Benchmarking Study
LIS 628
Student Name
10/18/2018

To create a data services department for my institution, I reviewed services from four private, non-profit, liberal arts colleges, with a special focus on digital humanities services. The chosen colleges immerse students in a broad range of subjects, generally prioritize pedagogy and student-faculty relationships over solitary research, and serve approximately 1,900 - 2,500 undergraduates.[1] These hallmarks of a liberal arts education are reflected in the data and digital scholarship services they provide.

**Lafayette College: Digital Scholarship Services**
**https://dss.lafayette.edu/**

Digital Scholarship Services (DSS) at Lafayette College grew out of an initiative to digitize the Lafayette Special Collections & College Archives. As they created and maintained the digital collections, they combined this effort with a desire to both promote the use of the collection and to create a service that would support faculty and student digital research projects, thus creating DSS as it is today. They support digital projects on a rolling basis, providing guidance from initial ideas to the final preparations for maintenance and storage, though it seems they consult in a temporary capacity as well. The projects they prioritize are interdisciplinary, benefit the College and align with institutional values, engage undergraduates in the classroom or as student researchers, and/or have a regional focus.[2] The DSS team also maintains the digital institutional repository, and is currently transitioning to a Samvera-based digital repository framework. They encourage the researchers they work with to include their projects in the repository, or in other open-access digital repositories.[3]

Services they provide include[4]:
- Digitization of material for Special Collections & College Archives, as well as other campus units

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[1] College type and population size as determined by Carnegie Classifications of Higher Education®, accessed 10/10/2018.

[2] "About · Digital Scholarship Services · Lafayette College," accessed October 12, 2018, https://dss.lafayette.edu/about/.

[3] "Digital Repository · Digital Scholarship Services · Lafayette College," accessed October 16, 2018, https://dss.lafayette.edu/digital-repository/.

[4] "What We Do · Digital Scholarship Services · Lafayette College," accessed October 16, 2018, https://dss.lafayette.edu/about/what-we-do/.

- ○ DSS will also digitize a certain amount of material for faculty/community partners for research, publication, teaching, or other community engagement purposes
  - ○ DSS also responds to requests for copyright consultation and reproductions from Digital Collections
- ● Support faculty and student research with data in the humanities, arts, and humanistic social sciences
  - ○ DSS offers digitization and research data management consultation to create and curate digital research collections of text files, image files, geospatial data, and other raw materials of digital scholarship
  - ○ They help create digital text and image files, transform them by cropping, deskewing, changing file formats, or running them through OCR, for example. They also create descriptive metadata for digital collections.
  - ○ DSS provides consultation in the use of both desktop and web-based geographical information systems (GIS), and assist students and faculty in the discovery, acquisition and processing of geospatial data for analysis and visualization using GIS applications.
  - ○ They provide digital asset management and publishing support by helping researchers explore cloud storage options, apply file names, and determine directory structures for digital assets. DSS also provides consultation on scholarly web publishing platforms such as Omeka and Scalar.
  - ○ Through their website, DSS highlights certain digital scholarship projects and promotes their creation and use.
- ● Community-engaged digital research and pedagogy
  - ○ DSS collaborates on digital research and pedagogy projects with a regional focus, often with community partners such as the Easton Area Public Library, the Northampton County Historical Society, and the Lehigh Valley Research Network
  - ○ They provide instructional consultation and support through pedagogical consultation, workshops, and curriculum development services to incorporate digital humanities tools and methods in teaching. Consultation services include working with instructors on scaffolding digital project components to align with course learning objectives.
- ● Digital Repository and Infrastructure Development
  - ○ DSS develops and implements the digital repository framework for the Skillman Library institutional repository and Digital Collections

Through these services, the DSS appears to be meeting their goal of partnering with faculty and student researchers to create and sustain digital research projects. DSS prioritizes working closely with faculty and students throughout the life cycle of a project, from initial planning to maintenance and preservation. There is a strong focus on faculty, but in a way that prioritizes digital humanities as pedagogy and the inclusion of student researchers in faculty led projects. Treating faculty and student projects with the same standards and care as their own digital special collections and repository shows great regard for their work, and helps emphasize best practices, such as making research accessible, open, and well-managed, as soon as students are introduced to this kind of research.

Their focus overall emphasizes creating and working with digital archives and collections, which makes sense given their origins and the nature of humanities data projects and management. However, with this focus on collections, especially the college's collections/regional data, there is less attention given to data reference, discovering other sources of data, and data literacy. Their services also only cover the humanities, arts, and humanistic social sciences, with no real offering of data services for natural sciences. It is hard to know how much quick consultation they provide to students, or how they support more casual explorations of digital humanities, as they prioritize more guided, in-depth experiences with ongoing projects (though it seems they do offer short workshops to introduce students to GIS tools such as ArcGIS and Social Explorer).[5] Also, while they do provide support for projects in the form of expertise, tools, and storage options, they do not directly provide funding, nor do they mention helping researchers with finding and applying for grants.

To use their services, students or faculty need to fill out an online form with their name, email, and a brief description of their request.[6] To partner with them for the entire lifecycle of a project, the same form is used. While it is not quite as easy as being able to walk up to a desk to ask a question, the preliminary request form is pretty open ended, so it seems like you can come to them with a wide variety of abilities and ideas. DSS takes on new projects on a rolling, discretionary basis, following a project evaluation and a "scope of work" conversation, which includes discussing project benchmarks and data management plans with everyone who will be involved in the project.[7] Creating a new project or initiative requires putting in a significant amount of work, but DSS seems to be committed to consulting and working closely with researchers throughout to facilitate the creation and maintenance of digital scholarship.

[5] "New Semester, New Mapping Workshops! · Digital Scholarship Services · Lafayette College," accessed October 16, 2018, https://dss.lafayette.edu/2018/09/04/new-semester-new-gis-workshops/.
[6] "Digital Scholarship Services · Lafayette College," accessed October 12, 2018, https://dss.lafayette.edu/.
[7] "Scope of Work Planning · Digital Scholarship Services · Lafayette College," accessed October 12, 2018, https://dss.lafayette.edu/memorandum-of-understanding/.

DSS appears to be well entrenched at Lafayette College. It has existed for at least five years, and grew out of and around the college's digital collections and institutional repository, both services which are unlikely to disappear. They also focus strongly on projects that have a regional focus or utilize the resources at the college, so benefits to the institution are made very clear. Working with faculty to provide learning and research opportunities to students is also well in line with liberal arts educational goals.

Four staff members are listed as working for DSS: a director, a digital projects/repository developer, a data visualization and GIS librarian, and a visual resource coordinator, who is jointly appointed with the College's art department.[8] In addition to the costs of labor, the digital preservation work likely required a significant amount of funds to purchase equipment. For example, they mention having a Bookeye scanner,[9] which costs somewhere around $40,000, though this piece of equipment may have been purchased for the benefit of the entire library. Building and maintaining the institutional repository and digital collections would also involve server, backup storage, and possibly network costs. For the data services themselves, on top of the existing digital collections department and institutional repository, the main costs would be the staff, bringing in outside speakers and workshop leaders, and the software they are using, including institutional subscriptions to Artstor and tools like Social Explorer. DSS does have a commitment to using open source software to build their repository, so I imagine they promote the use of free and open-source tools for data collection and analysis as well, which would help to lessen costs. It is unclear what kind of physical space they have for consultations and what kind of hardware or tools exist there; it is possible they use existing library tech and space to teach and work with researchers, which would eliminate that added cost.

**Vassar College: Digital Scholarship Services Collaboration**
**https://pages.vassar.edu/dissco/**

The Digital Scholarship Services Collaboration (DiSSCo) at Vassar College is a group comprised of members of the Library Digital Scholarship & Technology Services, Academic Computing Services, Library Research Services, and Media Resources departments. Their goal is to collectively better meet the needs and support the interests of faculty and students pursuing digital scholarship in their teaching, learning, and research. DiSSCo provides training, workshops, expertise, and other resources to

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[8] "Our Team · Digital Scholarship Services · Lafayette College," accessed October 12, 2018, https://dss.lafayette.edu/about/our-team/.

[9] "Digitization Services for Research & Teaching · Digital Scholarship Services · Lafayette College," accessed October 16, 2018, https://dss.lafayette.edu/digitization-services-for-research-teaching/.

help guide researchers through the process of transforming ideas into sustainable projects that can be shared, extended, and reviewed within the scholarly community.[10] DiSSCo also oversees the Vassar's institutional repository.[11]

Services they provide include[12]:
- Project planning and support
  - They can provide expertise to help plan, develop, and complete projects, from incorporating digital material into lessons to ongoing research. Services specifically mentioned include metadata consultations, how to manage data entry and cleaning, designing data management plans, and the creation of data dictionaries
- Providing and training researchers on how to use specialized equipment and software
  - DiSSCo provides technical consultation and assistance with using specific tools (including Final Cut Pro, WordPress, ArcGIS, 3D printers) to create items such as maps, timelines, exhibits, digital stories, collections of digital documents, images, or other objects. Training in techniques such as data visualization and text analysis is also offered.
- Workshops
  - Topics include personal digital archiving, 3D printing, Linux, R, GitHub, using the command line, how to photograph your artwork, and video and sound editing. These workshops appear to be specifically geared towards students. Workshops for faculty on instructional technologies and digital pedagogy are also offered.
- Funding
  - DiSSCo helps researchers develop competitive and compliant external funding proposals.
- Copyright and Fair Use
  - They help researchers navigate issues of copyright and Fair Use for data citation purposes, as well as for their own research's rights management.
- Institutional Repository
  - DiSSCo makes available an institutional repository for members of the Vassar Community who wish to publish their work as open access. Items

[10] "Digital Scholarship Services Collaboration – DiSSCO | Vassar College," accessed October 12, 2018, https://pages.vassar.edu/dissco/.

[11] "Open Access and Institutional Repository Services – Digital Scholarship Services Collaboration," accessed October 12, 2018, http://pages.vassar.edu/dissco/our-services/open-access-and-institutional-repository-services/.

[12] "Our Services – Digital Scholarship Services Collaboration," accessed October 16, 2018, http://pages.vassar.edu/dissco/our-services/.

for inclusion appear to be limited mostly to static items. They promote the use of the repository for long-term, open access storage, but will help researchers find the most appropriate place for their data.
- Partnerships with regional and peer institutions to seek opportunities for shared digital project support and collaboration
  - Outside speakers, colloquiums, and panels on digital scholarship have been organized.

All of these services contribute to DiSSCo's broad goal of supporting faculty and student digital scholarship. Rather than limiting the services by project or discipline (such as the humanities), they provide comprehensive, but open-ended support for researchers, with a special focus on data management and open digital scholarship. Their workshops on software and digital skills cover interdisciplinary interests, and touch on personal data management. Guidance for complying with and obtaining grant funding for projects also greatly supports their mission, as does assisting with copyright and data citation.

However, they seem to be focused primarily on faculty and supporting their research, though digital pedagogy is mentioned. Most of their services (besides the workshops) target those already engaged in or familiar with digital humanities or researching with data. There is also little mention of helping researchers find and critically use sources of data. The looser structure of their services could lead to a greater variety of topics and projects pursued by both students and faculty, but again, this model would likely work best for self-starters. On their website, DiSSCo does highlight sample questions they are asked, which could help people realize the many reasons they may need those services, but there are no guided, long-term experiences offered that shepherd undergraduates through the process and best practices of data research and management. Consultations can be set up via email, and workshops are open to the Vassar community, so their services are easy to utilize, provided you already have a sense of what you want to do or why you want to learn how to use a certain tool.

DiSSCo has existed for approximately 3 years. They do not appear to be offering many workshops recently, and as the service is a collaboration, most of the 10 staff members have come from other areas of the college, and presumably have other duties to attend to.[13] All of these factors could point to potential service degradation. However, in the library's strategic plan from 2015, enhancing the library's capacity for digital scholarship, hiring a librarian with data and instruction skills, and developing students into empowered researchers are all listed as priorities, so a commitment growing these

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[13] "Members – Digital Scholarship Services Collaboration," accessed October 12, 2018, http://pages.vassar.edu/dissco/members/.

services is there (in fact, these strategic goals may have been the impetus for DiSSCo's creation).[14]

Paying the 10 staff members, either their full salary or part of their salary for the dual appointees, would contribute to the cost of this service. Many of them come from the academic computing department, and it is likely that DiSSCo takes advantage of the tech resources they already possess, plus the hardware and software already owned by the library. DiSSCo's website mentions the use of a mix of open source and proprietary software such as Final Cut Pro and ArcGIS, and they have likely purchased additional software resources. While Vassar was soliciting student opinions and benchmarking other institutions' makerspaces in 2015,[15] it is unclear whether or not a makerspace was actually developed by DiSSCo. They do mention having 3D printers, so they have invested at least some money in that type of tool. Maintaining the institutional repository would involve paying bepress for their services, as Vassar uses Digital Commons.

## Hamilton College: Digital Humanities Initiative
http://www.dhinitiative.org/

Digital Humanities Initiative (DHi) at Hamilton College, established in 2010, is a humanities-based collaboratory supporting long-term faculty-led interdisciplinary research projects. DHi is a co-curricular center at the College whose original goals included:[16]
- Developing scholars' understanding of digital research methods and tools.
- Integrating student collaborators into faculty research projects.
- Connecting scholars with related research interests nationally and internationally.
- Promoting "big ideas" in digital humanities investigations.
- Assisting faculty in securing funds for and managing research projects.
- Facilitating translations of research into curricula.

Now in a new phase of strategic planning, their goals have expanded to include:[17]
- Continuing to institutionalize DHi's work at Hamilton through research projects, curricular integration, and Culture, Liberal Arts and Society Scholars Program (an undergraduate research and fellowship program in the digital humanities awarded to student scholars).

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[14] Joanna DiPasquale, "Libraries: About the Libraries: Strategic Directions," accessed October 12, 2018, https://library.vassar.edu/about/strategic-directions.

[15] "Tell Us Your Ideas for a Makerspace | VC Makerspace Talks," accessed October 16, 2018, http://pages.vassar.edu/makerspacetalk/input-your-ideas-for-a-makerspace/.

[16] "DHi's Goals | DHi - Digital Humanities Initiative," accessed October 16, 2018, http://www.dhinitiative.org/about/goals-phase1.

[17] "DHi's Goals | DHi - Digital Humanities Initiative," accessed October 16, 2018, http://www.dhinitiative.org/about/goals.

- ○ Students are the backbone of all DHi research projects and as such are involved from brainstorming through dissemination.
  - ○ DHi will delve more deeply into new models for teaching information management, metadata schema, and collection development in the liberal arts through a series of short term hands-on workshops and integration of assignments in existing courses.
- Developing an Innovation Lab for interdisciplinary digital scholarship that will include:
  - ○ Invited speaker events, followed by workshops and/or guided discussions of innovations in digital approaches with both academic and industry leaders from across the US and abroad.
  - ○ Working Groups based on current faculty, staff and student collaborations.
  - ○ Game Development Studio (GDS).
- Providing leadership on the ways of integrating digital scholarship into the Appointment, Promotion and Tenure Review process at the College and Department levels.
- Building an open source digital scholarship/humanities consortium of Liberal Arts Colleges (LACs).
- Developing a Liberal Arts Colleges (LAC) Digital Scholarship/Humanities Summer Training Institute for faculty, staff and students.
- Developing increasing connections to art and social justice-based activities between DHi digital scholarship and local and international communities.

Services they provide include:
- Supporting and helping to plan the approach, dissemination, and management of long-term faculty-led interdisciplinary projects that fit the following criteria[18]:
  - ○ Must be digital humanities-based research question
  - ○ Project scope must fit within DHi's sustainable technology infrastructure - digital collections based in Institutional Repository and contextualized within our DHi multisite content management system.
  - ○ Expect that projects will take 2 years to reach proof of concept stage
    - ■ Within the 2-year timeframe, expect to write a grant proposal with our support to further project development, with an emphasis on NEH grants for reviewer visibility
  - ○ Research Project must be connected to the curriculum though coursework, course assignment, independent project with student researchers or fellows, etc.

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[18] "DHi Project Guidelines | DHi - Digital Humanities Initiative," accessed October 16, 2018, http://www.dhinitiative.org/about/projectguidelines.

- ○ Must have civic and/or public component
  - ○ Project durations reevaluated at regular milestones (6 mo.) in consultation with DHi.
- ● Paid student opportunities[19]
  - ○ Culture, Liberal Arts, and Society (CLASS) fellows program
    - ■ Our Culture, Liberal Arts, and Society (CLASS) fellows program provides students with skills training in digital literacies through intensive research and scholarship coupled with two unique internship experiences. In the summer between sophomore and junior years, students work alongside a faculty member and the DHi CDT project team as a co-collaborator on a proposed project. It is required that collaborative research in the digital humanities be the primary focus of the student's summer work – the equivalent of a full-time job – typically for 11 weeks ($4000 stipend per student for summer). In the summer between junior and senior years, CLASS, in partnership with the Career Center, offers undergraduate students an intensive professional development experience and provides a comprehensive overview of work in their respective fields of interest (budget varies based on remote paid or unpaid internship, DHi and/or Career Center subsidizes internship on a case by case basis). The second internship experience is chosen by the student from an agreed upon list of pre-approved opportunities with cultural organizations and/or multi-media business entities. After their second internship experience students are prepared to enter employment and/or graduate study having mastered a range of new digital literacies and understanding of research methods in the humanities.
  - ○ Interns
    - ■ DHi Interns are paid hourly wages based on their skill sets and experience. DHi Interns develop one or more core areas of skill sets that integrate understanding of research approach/method with the digital technologies associated with that approach. DHi Interns start at an entry level, perhaps with no existing skills, but with interest in working on a research project. DHi interns who work with us for one or more years begin training other students and working across projects. These students are given increasing responsibility across projects and become our Paraprofessional DHi Interns.

[19] "DHi Interns and CLASS Fellows Skills | DHi - Digital Humanities Initiative," accessed October 16, 2018, http://www.dhinitiative.org/about/interns-class-skills.

- Through these opportunities, students have been taught research methods and digital skills in areas such as[20]:
  - Oral history research
    - Methods include: understanding oral history interview technique (different from journalistic style), ethics, legal permissions, IRB policies, research project dependent sensitivities, transcriptions process, emergent theme analysis, coding of themes, language and dialect considerations, etc.
    - Digital technology skills include: Field to Archive digital video and audio collection, delivery, and data management. These skills include *Production* - operating A/V equipment in a variety of field situations to obtain the highest quality audio/video recordings possible; *Postproduction* - audio/video editing to combine media recordings and edit for public; Delivery of appropriately encoded video interview for web display and export of a preservation file for archive (high quality archive file); *Data Management* of video/audio/transcripts for each interview and initial metadata for each interview.
  - Cataloging and metadata for digital research collection development
    - Methods include: basic understanding of data management and digital preservation goals, conceptual understanding of server and systems approaches to organization of information, conceptual understanding of digital preservation issues in short and long term data management.
    - Digital technology skills include: Digitization workflows by type of object being digitized, metadata schema, controlled vocabularies, metadata entry, OxygenXML software application, Google spreadsheets and organization of files. Cataloging process for analog objects that will be digitized. Basic understanding of how analog and digital derivatives will be related to each other over time.
  - Text/Image Analysis & Visualizations
    - Methods include: understanding large scale and/or topic analysis approaches to text based research, basic understanding of statistical results relative to the data sets being analyzed, basic understanding of the potential and limits of specific text analysis tools.

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[20] "DHi Interns and CLASS Fellows Skills | DHi - Digital Humanities Initiative," accessed October 16, 2018, http://www.dhinitiative.org/about/interns-class-skills.

- ■ Digital technology skills include: use of text analysis tools, which applications address the question posed and understanding (ex: differences among Nvivo queries, R scripts parameters and associated data sets). Web programming using exiting Javascript library tools. Geospatial mapping and/or conceptual "mapping" of data with narration.
- ○ 3D Modeling & Virtual Reality
  - ■ Methods include: developing storyboarding and prototypes, understanding and interpreting visual and historical data/documents to accurately translate them to a 3D model or environment; conceptual understanding of spatial data (mapping & GIS) and relative data relationships and how to read them; conceptual understanding of mapping tools and visualization tools, conceptual understanding of graphic design and visual perception.
  - ■ Digital technology skills include: proficiency reading spatial data; Modeling – basic shape modeling; relative topographic positioning; wiring and rigging of characters; developing interactive applications based in 3D technologies such as Blender (modeling and animation), Unity (interactive virtual environments and applications), and web applications development (delivering interactive tools to DHi's web platform).
- ○ Web Development for communication of research goals, results, and publication
  - ■ Methods include: developing storyboards, navigational layout, production of audio/visual/graphics assets, research thesis, design of form relative to content and intended audience perception, etc.
  - ■ Digital technology skills include: conceptual understanding of content management systems, WordPress, basic html programming, digital asset management, design production skills, basic understanding of plug-ins and api's for interactive elements of website.
- ○ Communication and Administration & Social Media
  - ■ Methods include: effective writing and communication for web and social media platforms, developing communications for social media platforms to connect undergraduates to research and presentation opportunities; basic administrative skills, some project management skills.
  - ■ Digital technology skills include: conceptual understanding of and proficiency with social media & communication platforms –

> Facebook, Twitter, Instagram; proficiency with web forms and word processing/spreadsheet software.

- Classroom integration of Digital Humanities[21]
  - DHi promotes curricular initiatives in Hamilton's inter- and multi-disciplinary concentration (and minor) in Cinema and Media Studies (CMS). This concentration introduces students to history, theory, literacy and production skills in film and new media. CMS brings together courses involving historical and theoretical study and/or hands-on experience of photochemical, electronic and digital media.
  - DHi also offers faculty development workshops, and assist faculty in securing funds for and managing research projects.
- DHi hosts scholarly conferences and symposia, as well as a speaker series featuring both internal and external scholars[22]

DHi has very specific goals, and with these services, they appear to be reaching them. They are committed to deeply involving students in digital humanities practices, and pay them for their time and labor. They also have built strong relationships with faculty, and work with them to secure funding and to advance the role of digital scholarship in promotion and tenure decisions. Innovation-wise, DHi has goals to build and connect with other liberal arts colleges DH services, and work to build connections with researchers around the world. Their student fellowship program also involves internships with outside organizations, further expanding DH communities of practice. DHi also has a growing program to integrate DH into classes, which fulfills one of their strategic goals and underscores the importance of pedagogy in a liberal arts education. They also are taking steps to sustainably store and host the projects they sponsor, as they are beginning to build a repository using Fedora Commons and Islandora.[23]

The research sponsored by DHi is limited to digital humanities, so there is no integration of natural or social sciences. Additionally, the projects they accept have to adhere to a fairly strict set of guidelines and a particular workflow, though they encourage innovation within their parameters. As their main purpose is to support long-term faculty led projects, smaller ideas and student projects do not receive the same or any attention. The focus here is on in-depth experiences with students, rather than quick consultations or guidance. This does not leave much room for casual interest or applying principles and best practices to your everyday data management, though

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[21] "Mission Statement | DHi - Digital Humanities Initiative," accessed October 16, 2018, http://www.dhinitiative.org/about/mission.

[22] "DHi Speaker Series Events | DHi - Digital Humanities Initiative," accessed October 16, 2018, http://www.dhinitiative.org/community/events/speakerseries.

[23] "About Us | DHi - Digital Humanities Initiative," accessed October 15, 2018, http://www.dhinitiative.org/about/aboutus.

they do offer opportunities for those with little to no knowledge of DH. Still, it is a serious investment to ultimately train about 50 students over the past 8 years, though more have likely benefited from classroom initiatives. DHi addresses this in their upcoming goals, and they plan to develop more short-term, hands-on workshops and more integration of DH into classroom assignments.

The long-term nature of the project DHi takes on results in the service not being as accessible or easy to use as others. To use, a faculty member must apply to have their project sponsored, so they have to come in with the ability to conceptualize an innovative DH project. Calls for proposals are once a semester, and must include[24]:

1. Project Title
2. Summary description, including scope and interdisciplinary relevance
3. Statement of connection to the curriculum
    a. Does this project have immediate application in a course or assignment?
    b. Is there a role for a student collaborator in this project?
4. Resources
    a. Description of existing and desired resources
    b. Is digitization of materials needed?
    c. What digital research approaches are you considering? (e.g., oral histories, GIS, text analysis, etc.)
    d. Will research findings and collection be public?
    e. Names and institutions of potential collaborators

For students the service is slightly easier to use. Some projects are integrated into the classroom, so the service is brought to those students. Otherwise they too need to apply to become either an intern or a fellow. Again, there is not much opportunity for short-term or casual interest, so students need to be available to commit to a semester, or even several years of work.

DHi is very much established in the College, and has secured a large amount of grant money. The service was founded in 2010 with an $800,000 grant from the Andrew W. Mellon Foundation, and receives additional funding from the College.[25] DHi has a strong mission, strategic goals, ongoing long-term projects, and plans for expansion that are backed by an additional grant. They are strongly networked both internally, with many affiliations to different professors, and externally, with consultants and advisors across the world who are professors, librarians, and DH specialists.

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[24] "Projects - Project Guidelines," Hamilton College, accessed October 16, 2018, https://www.hamilton.edu//academics/centers/digital-humanities-initiative/projects/project-guidelines.
[25] "Mellon Awards $800K for Digital Humanities Initiative - News," Hamilton College, accessed October 16, 2018, https://www.hamilton.edu/news/story/mellon-foundation-awards-800k-for-digital-humanities-initiative.

DHi is able to provide this depth of service with a significant amount of funds. In addition to the founding grant, DHi has received another $800,000 Mellon Grant[26], and more grants that cover specific projects. Costs would include paying the six staff members, most of whom have dual appointments: a director, cofounder, designer/software engineer, library information systems specialist (who also manages the College's digital collections), metadata and digital initiatives librarian, and a Unix/HPC system administrator.[27] DHi also pays its student fellows and interns, as well as outside speakers. DHi has its own space with offices, space for collaborations, and up to 15 workstations. The construction, renovation, and furnishing of this space was entirely funded by internal Hamilton College resources, and cost approximately $140,000.[28] DHi mentions the use of both open source and proprietary software, and offers a wide variety of multimedia hardware; it seems they utilize their own equipment, which would add significantly to the cost of service. They also have their own servers, where they are starting to build their own open-source repository.[29] The cost of maintaining these servers, as well as network costs, would also contribute to the overall funds needed.

**Middlebury College:  Digital Liberal Arts Initiative**
**http://sites.middlebury.edu/dla/**

Middlebury College's Digital Liberal Arts Initiative (DLA) is a faculty-and-student-driven, staff-inclusive, campus-wide resource to foster innovative digital scholarship. It is based at Middlebury College Library's Center for Teaching, Learning & Research. DLA provides funding and support for projects, teaching, public work, collaborations, events, workshops, and more. The DLA's overarching goal is to facilitate communities of digital scholarly practice in order to advance all levels of research, teaching, and learning at Middlebury.[30]

Services they provide include:
- DLA provides consultation for Middlebury faculty, students, or staff at any point in the process of developing a digital project, from conceptualizing through to

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[26] "DHi Awarded Second $800K Award From Mellon Foundation - News," Hamilton College, accessed October 16, 2018,
https://www.hamilton.edu/news/story/dhi-awarded-second-800k-award-from-mellon-foundation.
[27] "About Us | DHi - Digital Humanities Initiative," accessed October 15, 2018,
http://www.dhinitiative.org/about/aboutus.
[28] "DHi's Space | DHi - Digital Humanities Initiative," accessed October 15, 2018,
http://www.dhinitiative.org/about/dhispace.
[29] "About Us | DHi - Digital Humanities Initiative," accessed October 15, 2018,
http://www.dhinitiative.org/about/aboutus.
[30] "Dla," dla, accessed October 16, 2018, http://sites.middlebury.edu/dla/.

completing and publicizing a work. This service is offered regardless of whether or not the researcher receives funding from DLA. Types of research include[31]:
- ○ Research into digital tools, platforms, and software
- ○ Development of data and databases
- ○ Digital animation
- ○ 3D modeling
- ○ Website interface design
- ○ Digital storytelling and multimedia narrative
- ○ Digital mapping, geospatial approaches, and GIS
- ○ Network analysis
- ○ Podcast design and recording
- ○ Video production
- DLA offers funding for a variety of research purposes, including[32]:
  - ○ Small grants (up to $500) to support the initial discovery phases of research
    - ■ These could cover software licensing, hardware acquisition, an online course, or pay a for student research assistance, for example.
  - ○ Contribution to travel and other expenses (up to $1000) for digital scholarship exploration, workshops, or skills acquisition outside of Middlebury College
  - ○ Contribution to honoraria and travel expenses (up to $1000) to bring a digital expert to Middlebury
  - ○ Salaries for student research assistance (up to $3000)
  - ○ 2-4 year-long DLA Fellowships available for all or parts of faculty sabbaticals (up to $5000)
- Yearlong programming and events, including symposia, talks, and the Digital Fluencies Series[33]
  - ○ The Digital Fluencies Series investigates what it means to develop more critical facility and engagement with digital technologies. Meetings usually combine 1-3 readings (a link to materials will be provided when necessary) and a case study for hands-on exploration. Faculty, students, and staff are all welcome to participate regardless of digital skills.

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[31] "Guidelines & Application for DLA Funding," *Dla* (blog), November 10, 2014, http://sites.middlebury.edu/dla/funding/apply-for-funding/.
[32] "Guidelines & Application for DLA Funding," *Dla* (blog), November 10, 2014, http://sites.middlebury.edu/dla/funding/apply-for-funding/.
[33] Michael Kramer, "New DLA Digital Fluencies Series," *Dla* (blog), March 24, 2018, http://sites.middlebury.edu/dla/2018/03/24/new-dla-digital-fluencies-series/.

- ○ Past programs include talks on technology and ethics of social media and web harvesting, algorithmic racism, digital publishing, data visualization, and open access.
- DLA provides news about external opportunities and digital liberal arts activities on campus
- DLA publicizes and provides access to ongoing, funded, digital projects

The projects DLA supports are mainly faculty driven, but often include and benefit students, and even staff members. Welcoming all to come in for consultations without having to apply or receive their funding is admirable, and encourages self-starters and those with a casual interest in digital scholarship to utilize their services. Providing funds to researchers is a definite incentive for digital initiatives, and supports their goal to make the labor behind these projects valued and visible. The projects they sponsor are noteworthy for including not just the traditional humanities, but also fine arts, dance, and music related digital projects. As for facilitating communities of digital scholarly practices, the inclusion of students in faculty projects, a focus on interdisciplinary efforts, funding to travel to opportunities, and funding to bring outside experts to Middlebury all support this goal.

While DLA does not specify project content beyond "liberal arts", the services they provide do center on the humanities rather than on the natural sciences. Not much information is given on the services they provide during quick consultations or to those with a casual interest in digital projects, and overall the focus is more on faculty projects and sponsoring them as fellows, and then including students in those projects in a more short-term capacity than at Hamilton College's DHi, for instance. There is also little to no mention of project sustainability or how DLA might assist with data management or storage.

Similar to the other profiled data services, DLA does not explicitly mention the provision of data reference and how to find data online, though through their events they do aim to explore data/digital literacy. DLA further partners with the recently created Middlebury Digital Learning and Inquiry (DLINQ), a service that promotes critical digital literacy and assists with integrating technology into pedagogy,[34] something that is also less of a focus for DLA.

Several of DLA's shortcomings are also filled by the other data services at Middlebury, which the DLA website disconcertingly does not mention. The Armstrong Science Library at Middlebury provides data management guidelines, aimed at faculty in

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[34] "About – Digital Learning and Inquiry (DLINQ)," accessed October 15, 2018, https://dlinq.middcreate.net/about/.

the sciences (but open to students and staff as well).[35] The library website offers limited guidelines to creating data management plans and lists external discipline specific data repositories that one could deposit their data in. A team of librarians and computing specialists/software engineers has also created a repository using Islandora that hosts data, open access faculty and staff scholarship, student scholarship, and digitized special collections and archives.[36] Whether or not the DLA staff members refer researchers to either of these services is unclear, but at least publicly, there does not seem to be much of a connection between them.

Middlebury College has several different digital learning, research, and pedagogy resources, one formed as recently as January 2018, which speaks to their commitment in that realm. While there is some staff overlap and collaboration between them, and while the services do address different disciplines, the overall lack of cohesion seems more like a weakness than a strength. In the mid to late 2000s, the library at Middlebury did create an open access publishing site for research projects,[37] and offered services to assess, vet, document, develop, and serve as a resource for digital scholarship projects and tools for faculty, students, and staff.[38] They sought to publicize research and encourage cross-disciplinary connections. It is now either defunct, or is only accessible to the Middlebury community. If it no longer exists, then it seems likely that the separate library services for faculty in the sciences and the DLA services for faculty, students, and staff in other disciplines grew separately out of that initiative. If it does still exist, then it seems likely that the multitude of services will be combined at some point, as they would share many overlapping goals.

While DLA seems well established, a large portion of the service and consultations is handled by the acting director, who also seems to play a large part in steering the interests of the DLA. This is not necessarily a bad thing, but the service may change significantly when it falls under different leadership.

To utilize the services of DLA, a Middlebury student, faculty, or staff member just needs to email one of the staff members to set up a consultation, or show up to a workshop or event. No prior ability is necessary, but some familiarity with digital methods would be necessary for people to be able to come up with their own projects. To receive funding, you can submit a proposal that includes your name, project title, description, timeline, collaborators, budget details, and potential funding sources. Proposals are accepted at four dates throughout the year, and the DLA strongly

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[35] "Data Management," Middlebury, accessed October 17, 2018, http://www.middlebury.edu/academics/lib/libcollections/libraries/armstronglib/datamgt.

[36] "Digital Collections at Middlebury | Digital Collections at Middlebury," accessed October 17, 2018, https://repository.middlebury.edu/islandora/object/islandora%3Aroot.

[37] "What Is MiddLab?," Middlebury, accessed October 17, 2018, http://www.middlebury.edu/middlab/what.

[38] "Teams," Middlebury, accessed October 17, 2018, http://www.middlebury.edu/academics/lib/about/teams.

recommends consulting with them before submitting. If you receive funding, you can expect[39]:

- The DLA will help you connect with technical experts on staff in the Library and the Office of Digital Learning and Inquiry for additional consultation and continue to provide ongoing advice and guidance
- You will thoughtfully mentor student research assistants
- A final report once the funded scholarship is completed
- Three brief blog posts on the funded digital scholarship for the DLA website. These can be written in collaboration with student research assistants or staff when applicable and the DLA will provide editorial assistance and consultation. When possible and relevant, multimedia elements can be included with posts:
  - An initial post that explains the funded scholarship (perhaps building on the language in the proposal)
  - A project-in-progress report that reports on how the scholarship is developing (particularly for more long-term funded projects)
  - A reflection on the funded work at its conclusion (this can draw upon language in the final report)

DLA also encourages faculty researchers to provide guidance, and clear structure and expectations to their student researchers, and to document and publicize their labor.[40]

The DLA was founded in 2014 with an $800,000 Andrew W. Mellon Grant.[41] Staff includes an acting director, a data services librarian, and an additional 5 steering committee members who also contribute some services.[42] Another cost in addition to labor would be providing the funding for research materials, speakers, student workers, and travel. DLA appears to spend money on an as needed basis for software/hardware through the small grants they give to researchers to buy the equipment they need for a particular project. This could limit the possibilities for digital projects for those not funded by the DLA, and does not bode well for the sustainability of the service. However, it appears that DLA uses the space, resources, and labor of the library and the Center for Teaching, Learning, and Research, which would also help lessen service costs.

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[39] "Guidelines & Application for DLA Funding," *Dla* (blog), November 10, 2014, http://sites.middlebury.edu/dla/funding/apply-for-funding/.

[40] "Mentoring Student Digital Research Assistants—Best Practices," *Dla* (blog), September 12, 2018, http://sites.middlebury.edu/dla/mentoring-student-digital-research-assistants-best-practices/.

[41] "Middlebury Awarded $800,000 Mellon Grant for Digital Scholarship," Middlebury, March 31, 2014, http://www.middlebury.edu/newsroom/archive/2014/node/472205.

[42] "People," *Dla* (blog), September 4, 2014, http://sites.middlebury.edu/dla/people/.

# Overall Thoughts

### Lafayette College: Digital Scholarship Services

Their model uniquely focuses on collections and digital archives - both the existing collection at the College, and helping researchers create collections - and treats archival collections as data for the humanities, arts, and humanistic social sciences. DSS consults mainly on projects that are faculty-driven and student-inclusive, and projects that are of regional or public interest. They also work with faculty to build and include digital projects in the classroom. Additionally, DSS maintains the College's soon to be open-source repository, and especially encourages researchers to follow best practices for data management, though their ability to adequately capture and store digital humanities projects and data remains to be seen.

What they do not offer is funding for research, or assistance to find and apply for grants. As DSS was built on top of existing services rather than created through a grant, perhaps with grant funding in the future that incentive could be added. Their focus on collections, especially their own material and material with regional interest, could limit the types and subjects of projects, though they do support humanities related digital projects that go beyond collections. DSS also does not provide as much support for student-led projects.

### Vassar College: Digital Scholarship Services Collaboration

Vassar College's DiSSCo provides the most open service, subject and project-wise, as it includes more computational and scientific research in addition to digital humanities, and offers mainly consultations rather than sponsoring specific projects. They have also provided useful workshops for students, including many on data analysis and coding skills, plus personal data management. While DiSSCo does not directly fund projects, they do help researchers apply for and comply with grants. DiSSCo also maintains the institutional repository, and specifically mentions assisting with the creation of data management plans.

However, they exist to serve mainly faculty, with no structure for including students in existing or proposed projects. While their website indicates that researchers can work with them regardless of skill level, the openness of their service would work best for those already at least somewhat familiar with digital materials and research methods. Using a pre-built solution for their repository also potentially limits the data they are able to accept and store.

### Hamilton College: Digital Humanities Initiative

DHi has very specific goals that support their mission to innovate in DH by sponsoring and hosting faculty-driven and student-focused long-term projects. They

often utilize connections with other data services and practitioners, and are working to build services with other liberal arts colleges and international communities. They provide funds and several levels of intensive training for students, and plan to advocate for the elevation in value of digital scholarship in faculty application, promotion, and tenure review processes.They also work with faculty to include digital humanities projects in the classroom.

One downside of these services is the amount of funding that was required to build them. DHi also does not provide many services for those with a more casual interest in DH, or for short-term projects, though they plan to develop more in the future in order to reach more students.

**Middlebury College:  Digital Liberal Arts Initiative**

DLA at Middlebury College offers consultations to anyone at Middlebury doing a digital project at any stage, though likely just for those in the humanities. They also provide different levels of funding if you apply to be sponsored by them. These funds cover various expenses, including travel to learn at conferences or different institutions. Student inclusion in faculty projects is encouraged, though it is not required. DLA emphasizes digital literacy, and works with DLINQ, another digital service, to explore this topic. Their Digital Fluencies Series combines critical explorations of digital technologies with hands-on demonstrations, and these sessions seem to be a great way to introduce folks to tools and the ways in which they could be used.

DLA does not focus as much on helping to build digital projects for curricular integration, though they do encourage the faculty they train to use digital tools in the classroom. Their service also centers on faculty rather than explicitly on students, though faculty, students, and staff are all encouraged to use DLA's services. They also do not provide much information on how they are helping to sustain and store the projects that they sponsor, or how they promote best practices of data management. Their lack of collaboration with other library services and the institutional repository is disappointing, but the separation of humanities and sciences may have been deemed necessary after earlier experimentation with digital scholarship support.

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