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UCR Library Digital Scholarship Working Group (DSWG) Report: Findings and Recommendations for a Digital Scholarship Program

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UCR Library Digital Scholarship
Working Group (DSWG) Report:
Findings and Recommendations for a
Digital Scholarship Program

Submitted October 23, 2020

Table of Contents

Introduction	3
Background	3
Definition of Digital Scholarship	4
Executive Summary	5
Exploring Digital Scholarship Needs	8
Research Methodology	8
Findings #1: Common Digital Scholarship Needs	9
Findings #2: Digital Scholarship Needs at UCR	11
Findings #3: Common Digital Scholarship Support Models	13
Findings #4: Existing Digital Scholarship Support at UCR	14
Recommendations	16
Proposed Service Model	16
Research Support Program	17
Instructional Support Program	17
Project Planning and Management	18
Project Development and Hosting	18
Program Service Areas and Resources Needed	19
Proposed Team Structure and Service Workflow	23
Team Structure	23
Service Request Tiers	24
Service Request Workflow	25
Use and Handling of Digital Scholarship Project Content	29
Proposed Identity and Communication Strategies	30
Proposed Governance and Budget Requirements	31
Reporting Structures	31
Advisory Council	32
Budget Requirements and Financial Support	32
Development Support	33
Future Work	33
Plan for Investigating Library Space Needs	34
Plan for Ongoing Needs Assessment	34
12-Month Work Plan	36
Appendices	38

Introduction

Background

Support for digital scholarship has been an area of increasing interest for the UCR Library in recent years, with pockets of expertise developing in departments across the library. After the hiring of the AUL for the Digital Library, the library was well-positioned to undertake an exploration of this growing area in earnest. The AUL for the Digital Library and Director of Research Services collaborated to develop an initial charge for a working group that would do this exploratory work. The initial charge for what was designated as the Digital Scholarship Working Group (DSWG) was approved by Cabinet and the Library Leadership team in February 2020, and the group began meeting from April through October 2020. Due to the COVID-19 pandemic and resulting campus closure, the DSWG met remotely for the entirety of its work.

Members of the DSWG include:

- Alvaro Alvarez, Innovative Media Librarian
- Krystal Boehlert, Digital Initiatives Specialist
- Sandy Enriquez, Special Collections Public Services, Outreach & Community Engagement Librarian
- Noah Geraci, Digital Assets Metadata Librarian
- Rachel Starry, Digital Scholarship Librarian
- Kevin Comerford, AUL for the Digital Library (co-sponsor)
- Brianna Marshall, Director of Research Services (co-sponsor)

The working group was charged to propose a scalable and sustainable digital scholarship program at the UCR Library.¹ Meeting biweekly, we conducted a variety of research and assessment activities, initially by reading foundational digital scholarship (DS) literature to build a shared vocabulary and to understand what defines DS in general and specifically at UCR. Other foundational research topics included sustainability, labor and organizational models, and diversity, equity, and inclusion within the field.²

This report includes a brief definition of digital scholarship, both profession-wide and specific to UCR, as well as findings from our initial research and needs assessment. The report shares recommendations for a scalable and sustainable service model: research support, instructional support, project planning and management assistance, project development and hosting support, and the resources needed to provide that baseline support across particular digital scholarship service areas. It also describes the governance, roles, and workflows within the

¹ See Appendix 1: “Digital Scholarship Working Group Structure and Charge.”

² See Appendix 2: “Annotated DSWG Research Bibliography.” The DSWG also assembled a Zotero citation library, “[UCR Library Digital Scholarship](#).”

library needed to implement the proposed service model. Lastly, it provides an outline of future work: recommendations on investigating physical space needs upon a return to campus and a needs assessment plan for continuing to evaluate campus needs and develop the Digital Scholarship Program (DSP).

COVID-19 Caveat: As of October 2020, the UCR Library buildings remain closed to the public, and most staff are working remotely. A hiring freeze, instituted in March 2020, remains in place for an unknown duration of time. Prior to this COVID-19-related hiring freeze, some library departments had vacancies and planned retirements, and parts of our proposed plan for the DS Program were built on assumptions of pre-pandemic staffing levels and job descriptions. We fully acknowledge that planning alongside these uncertainties means that we may not accomplish everything articulated here during the coming year. We are also aware that library-wide strategic planning is underway, and see an opportunity to work alongside that process as we build the Digital Scholarship Program. Our intent is to remain flexible while implementing the first steps of this program and to reevaluate plans as needed.

Definition of Digital Scholarship

Digital scholarship is generally understood as the use of digital tools or methods for scholarly activities like research, teaching, and publishing. The phrase “digital scholarship” can describe both the *process* of creating new, often fluid forms of scholarship using digital tools and computational methods, as well as the ever-evolving *products* of technology-dependent research. Above all, *people* are at the heart of any digital scholarship program, both inside and outside the library.

Digital scholarship is intensely collaborative, iterative, public-facing, interdisciplinary, community-engaged, and open. “Doing digital scholarship” can look like a librarian managing a digital project; a student learning to do both close and distant (quantitative) readings of a text; scholars creating a digital archive; re-mixing images, audio, or video from a digital archive in an artistic work or performance; creating a database of digital projects; or sharing research online using multimodal publishing platforms.

UCR Library could take a leading role on campus in supporting technology-rich, interdisciplinary scholarship by becoming a more active partner in digital scholarly activities and supporting faculty and students in developing their digital research skills. “By providing a way to blur the ‘two culture’ divide of humanities and the sciences or institutional boundaries - processes that are reinforced by cultures of diversity and collaboration - **digital scholarship has the potential to transform research as it is currently practiced.**”³

³ Sehat, C. M., & Farr, E. (2009). *The Future of Digital Scholarship: Preparation, Training, Curricula*. Council on Library and Information Resources Report, <http://clir-staging.wordpress.clir.org/wp-content/uploads/sites/9/SehatFarr2009.pdf>. p. 8 (emphasis added).

This report provides recommendations for how the UCR Library can support digital scholarship activities and projects, primarily by:

- Lowering barriers to learning new technologies through hands-on workshops and training
- Bridging disciplinary silos by fostering inclusive communities of practice and regular community meetups
- Facilitating interdisciplinary collaboration and innovation through digital project management and consultations
- Promoting critical engagement with technology and radical openness in the creation and sharing of digital tools and resources

Executive Summary

This executive summary provides an overview of the content covered in this report, as well as embedded links to enable ease of navigation to relevant sections where our findings and recommendations are detailed.

As a permanent organizational element of the library, the Digital Scholarship Working Group (DSWG) designation would become the “Digital Scholarship Program” (DSP). The Program would be staffed by a collaborative team of representatives from multiple library departments and further supported by additional “affiliated staff” on a voluntary, as-needed basis. The [DS Program Team](#) would consist of existing DSWG members plus the addition of a Teaching & Learning representative.

We fully acknowledge that planning alongside the current budgetary and pandemic-related uncertainties means that we may not accomplish everything articulated in our 12-month work plan during the coming year. We intend for the Digital Scholarship Program to align with library-wide strategic planning and to remain flexible and responsive to user needs.

Summary of Needs

The following recommendations are supported by the findings articulated in [Exploring Digital Scholarship Needs](#). In our research, we found a set of common digital scholarship needs across the institutions we benchmarked with and in the literature on library DS initiatives. We also began a needs assessment specific to UCR, and our proposed service model and service areas respond directly to those needs and our local institutional context. Our findings include strategies utilized by other institutions to address similar needs to what we have found at UCR, and we outline existing UCR support structures and library expertise to underscore the collaborative nature of DS support work and need for cross-unit workflows.

Recommendations

Our proposed DS Program builds on existing UCR Library service areas and leverages expertise spread across library departments and staff. Our recommended [Service Model](#) consists of four core components:

1. [Research support program](#), including workshops, meetups, and student training.
2. [Instructional support program](#), consisting of collaborative approaches to tracking digital instruction needs and delivering course-related tool instruction.
3. [Project planning and management assistance](#), such as project scoping consultations, developing DS project workflows, and building a network of campus collaborators.
4. [Project development and hosting support](#), including establishing software and technical support workflows, investigating web and content hosting infrastructure, and creating digital project showcases and a virtual lab.

We propose that the DS Program address UCR-specific needs by offering support for the following DS [Service Areas](#), some of which may require additional resources in order for the library to provide baseline support:

- Research
 - 3D Modeling
 - Augmented/Virtual Reality (AR/VR)
 - Data Visualization
 - GIS and Digital Mapping
 - Network Analysis
 - Statistical Analysis
 - Text Mining and Analysis
 - Web Scraping and Accessing Datasets
- Teaching
 - Critical Digital Pedagogy
 - Social Annotation and Project Collaboration
- Digital Projects and Publishing
 - Digital Exhibits
 - Digital Publishing and Digital Storytelling
 - Multimedia and Podcast Production
 - Web Apps
- Digital Project Lifecycle
 - Project Planning
 - Transcription and Text/Handwriting Recognition (OCR/HTR)
 - Digitization
 - Metadata and Digital Asset Management
 - Project Development and Hosting
 - Digital Preservation and Born-Digital Archiving

We anticipate that many of our activities supporting these service areas will be request-based. The types of requests have been categorized into [Service Request Tiers](#) that correspond both

to the relative complexity and volume expected. We have outlined the overall DSP workflow from request submission through implementation and wrap-up, and have included general guidelines for handling the variety of materials and resources used in DS projects.

We recommend that the DS Program establish an [Advisory Council](#) consisting of UCR faculty, staff, and students engaged in digital scholarship, following the successful model of the Creat'R Lab steering committee. The primary purpose of this non-voting advisory council will be to provide high-level, quarterly feedback on the DS Program as it evolves over time.

We have identified and outlined [Program Budget Requirements](#) that align with standard library operating budget procedures and request processes. We anticipate that initial program expenses will be minimal, but to expand support to baseline level for the described service areas, DS Program co-sponsors will submit annual budget requests to Library Cabinet related to software, facilities, infrastructure, student workers, or additional project funding needed. For any significant program costs, we will collaborate with library development to identify appropriate gift and donor opportunities.

Summary of 12-Month Work Plan

To implement the DS service model, we will offer a robust slate of workshops and community-building events; collaborate with T&L to offer course-related instruction on DS tools; create an information-gathering tool for digital project planning; assemble an affiliated scholars community; and create a student digital project showcase. Additionally, over the coming year (see the full [12-Month Work Plan](#)) we will investigate physical library space needs and perform ongoing needs assessment. We also have concrete plans to develop cross-unit workflows, handoffs, and policies to manage incoming faculty and student requests.

In conclusion, we look forward to discussing feedback, answering questions, and working together to build a successful Digital Scholarship Program at UCR Library. We also look forward to sharing the outcomes and plans detailed in this report with our colleagues, within and beyond UCR Library. Following final approval by Cabinet, we propose uploading this report to the eScholarship repository so that it can be made openly available to all.

Exploring Digital Scholarship Needs

Research Methodology

The working group planned and performed a variety of research in order to understand the state of the field and prepare to recommend a service model for supporting digital scholarship at UCR Library. Our research had two primary goals: (1) to understand and articulate what the primary digital scholarship **needs** are in various disciplines - both at UCR and more broadly across higher education in North America; and (2) to investigate and summarize the approaches or

solutions that other institutions have used to address those needs through library services, programs, and spaces. The following sections represent our primary findings from this preliminary research.

Our methodologies for collecting data on DS support needs and academic libraries' approaches to meeting those needs varied. We began by conducting **benchmarking research** by reviewing the websites of 16 digital scholarship initiatives, some founded as early as 2006 while others were developed more recently.⁴ Our selection of initiatives to review was initially derived from the list of programs explored in the ARL Digital Scholarship Profiles series.⁵ We intentionally selected both initiatives housed within libraries and some that operated as multi-unit or independent centers, and opted to review DS support programs at a variety of institutional types, from private liberal arts colleges to research institutions of various sizes. Rather than benchmarking solely with UCR's own institutional peers, many of whom have implemented DS programs during the past 20 years, we believed that we would benefit from gathering data on how programs situated in diverse contexts were able to address common needs related to digital research, teaching, and publishing. This method afforded us broader exposure to the range of ways digital scholarship is conducted and supported in order to explore potential support models here at UCR.

Following our benchmarking research, the DSWG initiated an **environmental scan** to investigate areas of interest, ongoing digital projects, and existing DS support structures across the various departments, schools, and colleges at UCR.⁶ We began by compiling a list of individual faculty members, graduate students, postdoctoral researchers, and professional staff either known to the library as being engaged in digital work or whose online profiles or departmental webpages indicated a level of interest or engagement with digital scholarship. We drew on this initial list as we began our needs assessment, described below. For the environmental scan we also collated a list of campus labs, research centers, student programs, or other units that either engage with digital research or support DS on campus. Finally, we scanned the departmental websites and faculty listings of all seven UCR schools and colleges to gain a broader understanding of the range of DS-related research being undertaken at UCR.

The third pillar of our preliminary research took the form of a **needs assessment** plan and literature review to explore the most pressing needs for DS support in the form of instruction, infrastructure, spaces, or project management both here at UCR and at other institutions. Our methodology for conducting the literature review was simply to read widely in the literature on digital library programs, digital humanities curricula, and LIS more generally. We collaboratively summarized the variety of needs facing researchers in the humanities, social sciences, medical and natural sciences, and engineering, as well as needs related to issues of diversity, equity, and inclusion in digital scholarship programs. We also tracked common DS support needs

⁴ See Appendix 3: "List of Reviewed Digital Scholarship Initiatives."

⁵ ARL Digital Scholarship Profiles, <https://www.arl.org/arl-terms/digital-scholarship-profiles/>.

⁶ A static version of our working "UCR Environmental Scan Spreadsheet" is included as Appendix 6.

specific to undergraduates, graduate students, and faculty, as needs often vary across those different researcher roles.

In addition to these three research areas, we launched our needs assessment by holding a series of **group interviews** with key faculty stakeholders identified through our environmental scan. At these 30-60 minute interviews, held in May through September, we invited faculty members to describe their research generally, to share what digital methods or tools they commonly use, and advise on what kinds of support they need from the library to conduct their DS work. We also used snowball sampling, asking our interviewees to refer their colleagues to us, which broadens our network and provides future interview subjects.

Findings #1: Common Digital Scholarship Needs

This section provides an overview of general DS needs of faculty and students across disciplines and institutions, derived primarily from our literature review. The following types of needs are typically addressed through core aspects of a DS program: technical, social, research, teaching, project development/management, and professional development.⁷

Technical needs can be divided into two main categories: infrastructure and expertise. The core infrastructure needs we identified are web and content hosting services for student and faculty projects - such as hosting digital project websites or apps (web hosting) or managing collections of digitized materials (content hosting). The hosting of digital project sites or collections necessarily involves additional support and maintenance, and the long-term preservation of research materials and digital projects is also a primary infrastructure-related concern. Support for data storage and data management, as well as access to public datasets and digitized materials, were other commonly articulated needs across disciplines.

Needs around technical expertise and training include skills for creating digital project websites (including the use of platforms such as Omeka S or Scalar) and supporting born-digital archives, digital exhibits, and course websites. Other areas of interest for faculty and students to develop technical expertise are computational analysis of historical data, qualitative data, and geospatial data for integration into various kinds of research projects.

Social needs in digital scholarship refer to support required for facilitating collaboration across disciplines, departments, institutions, and with external community partners. Generally this means helping users find communities of support and providing spaces, both physical and virtual, to meet and work with project partners on campus. Both faculty and graduate students expressed the need for opportunities to present research and receive feedback from peers, and for libraries to build awareness of the value and possibilities of DS work.

⁷ For citations, see the summary of these needs in Appendix 5: "Literature Review Summary of Common DS Needs."

In terms of **teaching needs**, our literature review found that faculty in the medical and natural sciences identified finding, evaluating, and using Open Education Resources (OER) as an important need. Another need highlighted across disciplines was interest in centralized repositories for pedagogical resources relating to DS tools and methodologies. Humanities faculty expressed needs and interest in accessing digitized primary sources for teaching.

Research needs in digital scholarship share some overarching themes across disciplines: increasing awareness of the tools, methods, and materials available for digital research; support for discovering and experimenting with new digital methodologies; student access to research opportunities; and support for interdisciplinary and comparative research methods. More specific needs surfaced through our research include support for data visualization and mapping; digitization of primary source materials and data; support for working with non-text data (images, video, audio, other multimedia); and support for multilingual projects or projects in languages other than English.

The complex and collaborative nature of much digital research surfaces a variety of **project management** needs for researchers throughout the lifecycle of a project. These needs include support for project design and workflow development; support for grant writing and identifying DS grant funding; data curation and support for sharing data, creating metadata, and meeting funder open data requirements; digital publishing and website development support (technical, editorial, and financial); support for navigating copyright, intellectual property, and licensing; and support for peer review of digital projects.

Finally, general **professional development and training** needs identified by researchers include opportunities for technical skills training; ethics training regarding the use of digital data (such as social media data); and support for using digital media to effectively communicate the results of research to public audiences.

Findings #2: Digital Scholarship Needs at UCR

During our research we found several strong needs specific to the UCR community. These needs were articulated through our collective interviews with faculty, feedback on the pilot Digital Scholarship Meetup series that took place during summer 2020, and our ongoing environmental scan.

Several key insights emerged from the **faculty interviews** we conducted. Faculty members expressed a central desire that the library develop ways to preserve and showcase student work, either physically or virtually. Other concerns included increasing support for website and content hosting, tools for managing large datasets, resources to promote digital literacy and students' DS skills, and more options for visualization and GIS-based projects. Additionally, faculty emphasized needing help from the library to find opportunities and physical spaces for

researchers to cultivate and engage in interdisciplinary collaborations across campus. Grant-writing was also identified as an important support area that the library could provide, especially for newer faculty members. Another area of concern for newer faculty members is the evaluation of their DS work in the tenure process. They identified the library as a potential ally in highlighting the significance and impact of DS work across their disciplines.

During the **DS Meetups** held over the summer term, we collected feedback through collaborative notes from attendees that point to some recurring needs.⁸ The meetup format comprised a brief DS tool demonstration followed by questions and discussion; participants included a mix of faculty, students, postdocs, librarians, and other university staff. The introductions to various tools were very well received by participants, who also requested deeper explorations of those tools in future. Participants expressed a general need for opportunities to share their research among the campus DS community, and requested support for additional topics, such as digital literacy, GIS, project management, text analysis, digital publishing, and collaborative research tools. Several attendees also shared their gratitude for the DS Meetup series as a regular social space for connecting with others interested in DS topics. The format of this event was inspired by in-person meetups and would benefit from a physical meeting space, once it is safe to do so.

Our **environmental scan** revealed a number of areas where faculty and graduate students are engaged in research requiring digital tools and methods. Across the disciplines represented by all seven UCR schools and colleges, the following are the **top digital scholarship-related research interests at UCR**. The first four of these (emphasized in bold) were very common across disciplines and include existing library service areas, while others on this list represent important areas where we might expand support.⁹

- **GIS / geospatial analysis**
- **Computational text analysis**
- **Data visualization**
- **Digital publishing**
- Machine learning
- Networks
- Digital media / multimedia
- Algorithms
- Finding public datasets
- Data mining and analysis

Additionally, within each school or college we detected a concentration of DS-related interests around particular topics, beyond those on the common list above. While some of these research areas may be supported by local college or departmental resources, these lists generally

⁸ Digital Scholarship Summer Meetups, Collaborative Notes.

⁹ See Appendix 6: "UCR Environmental Scan Spreadsheet," for the detailed breakdown of these research areas across particular schools and colleges.

represent areas where the UCR Library could have a high impact on particular campus units if we expand our support for technology-engaged research.

Bourns College of Engineering (BCOE): machine vision, big data analytics, databases, spatial data management, image processing, natural language processing, computational modeling.

College of Humanities, Arts, and Social Sciences (CHASS): public datasets, augmented/virtual reality, digital collections, digital curation, digital exhibits, video games, sound analysis.

College of Natural and Agricultural Sciences (CNAS): 3D printing, bioinformatics, data management, computational/statistical modeling, image processing, augmented/virtual reality.

Graduate School of Education (GSE): critical pedagogy, video analysis, qualitative analysis, critical media literacy.

School of Business (SOB): business analytics, big data analytics, quantitative marketing.

School of Medicine (SOM): quantitative methods, bioinformatics, computational/statistical modeling.

School of Public Policy (SPP): n/a.

Findings #3: Common Digital Scholarship Support Models

We surveyed the literature and websites of different academic institutions to learn about their resources and strategies for supporting digital scholarship on their campuses. In this section, we summarize the findings drawn from our benchmarking research.¹⁰ We explored the following aspects of DS programs to the extent possible from their online documentation and web presence: stakeholders, services, DS methods supported, types of programming, physical spaces, governance models, and staffing models.

Our findings indicate that DS programs typically focus on faculty and graduate students as **stakeholders**, with undergraduate students also a priority at some institutions. Staff and community members are less likely to be target audiences for DS programs, but we did encounter institutions that identify them as primary stakeholders.

¹⁰ See Appendix 4: “Benchmarking Research Summaries and Visualizations.”

Services offered by DS programs most commonly include consultations, instructional workshops, website and/or project hosting, and, to a lesser extent, project development, project management, and in-class instruction. Another important aspect of the DS programs we investigated was their support for a wide variety of different DS methodologies. The institutions we surveyed most commonly supported GIS/digital mapping and digital publishing, followed by data management, data visualization, text analysis, digitization, and network analysis.

In terms of **programming**, we found that the vast majority of programs implemented instructional workshops, with community of practice meetups being the second most common type of event. Several institutions also incorporated certificate programs and online learning modules. Both recurring/series-based workshops and singular “one-shot” workshops were found to be common in the DS programs we surveyed. In general, most DS initiatives offer a variety of programming, most of which is geared towards their primary stakeholders.

Physical DS spaces are often situated in libraries and typically serve as a central hub for DS-related activities on campus. Most of the initiatives reviewed had designated areas for group consultation and/or project work rooms. A majority of DS programs also included computer labs with specialized hardware and software, as well as staff offices. Almost half of the programs reviewed included makerspaces, likely because they overlap with digital scholarship in terms of audiences and services offered.

In terms of **governance models**, we found that single directorship models were the most common by far in DS programs, followed by a co-directorship model or advisory board/steering committee. Most DS programs also have a specialized DS Librarian or staff specialist to oversee the day-to-day operations of the department or program. Additional governance structures we examined included a steering committee that is internal to the institution or an external advisory board. Committees and advisory boards appeared to provide a mechanism for programs to solicit input from a diverse group of faculty, staff, and students.

As the DS initiatives we explored were situated primarily in institutions' libraries, most utilized dedicated, full-time librarians and library workers to **staff** their programs. Faculty fellows and student employees (both undergraduate and graduate) were also commonly employed, though not to the same extent as library staff. Another form of staffing takes the form of a network across units, leveraging the services from various departments like IT, the library, makerspaces, and the faculty.

Findings #4: Existing Digital Scholarship Support at UCR

UCR Campus-Level Support

Existing support for digital scholarship on campus is largely concentrated in the Graduate Quantitative Methods Center (GradQuant), part of the Graduate Division. GradQuant is dedicated to providing support and training on quantitative methods, computer programming, and digital research methods to all UCR graduate students and postdoctoral scholars through free, individualized consultations and workshops. GradQuant's programs span academic disciplines, and include a Digital Humanities Fellowship program that funds students to attend the Digital Humanities Summer Institute (DHSI).¹¹ The library has a strong relationship with GradQuant and its director, Dr. Yelda Serin, including collaboration on Hacky Hours drop-in programming instruction sessions. GradQuant is an essential resource for digital scholarship at UCR, yet because it is situated within the Graduate Division with the mission and scope of supporting graduate students and postdocs, it is not able to offer DS support directly to faculty, undergraduate students, or community partners.

A variety of campus centers and programs pursue work using digital research methods. These include the Center for Geospatial Sciences; Statistical Consulting Collaboratory (CNAS); Center for Ideas and Society (CHASS); Spanish of California Lab at UCR (CHASS); Center for Social Innovation (CHASS); Center for Robotics and Intelligent Systems (BCOE); and Brain Game Center. These programs tend to support pockets of DS-related activity but do not constitute a cohesive network of support for the UCR community.

UCR Library Support

In recent years, UCR Library Cabinet and Leadership have supported innovative programming and expansion of our core services, and we anticipate that the proposed Digital Scholarship Program will build on the existing strengths, service areas, and flexibility of the functional organizational model at UCR Library.

Research Services (RS) Department: The RS department is positioned to offer support for digital scholarship through consultations, project support, and a robust slate of public-facing workshops, community meetups, and programs. Functional areas supported by the RS department include:

- Data management and data science
- Digital scholarship
- Geospatial information
- Maker and media support (including access to the Creat'R Lab makerspace)

¹¹ Digital Humanities Summer Institute (DHSI), <https://dhsi.org/>.

- Scholarly communication and open research

Teaching & Learning (T&L) Department: The T&L Department supports student success by offering course-related library instruction sessions, developing reusable learning objects, and providing consultations on research assignment design. They are interested in collaborating to support digitally based projects within and adjacent to the curriculum (courses but also projects from prestigious undergraduate fellowship programs), and in gaining additional access to unique digitized content that could be used in classes.

Special Collections and University Archives (SCUA): SCUA may support digital scholarship through collaborative instruction, the digitization of archival materials, as well as the planning, development, and maintenance of digital exhibits and other digitally based projects. SCUA may create digital exhibits, or other digitally based projects, in collaboration with faculty members, as part of a course curriculum, or as an initiative directly from SCUA staff. More recently, SCUA has sought to highlight external digital archives and other archives-related DS projects through workshops such as the upcoming “Latin America Outside the Library” event. SCUA is also exploring the development of digital scavenger hunts and digital escape rooms using materials from the collections.

Digital Library Division (DLD): DLD supports the mission and strategic goals of the library by providing information technology services and solutions, and by developing and publishing the library’s digital collections online. DLD also provides comprehensive digital content development and preservation services. DLD includes Digitization Services, Digital Initiatives, and Cyberinfrastructure.

- **Digitization Services** offers programmatic digitization of SCUA collections, oversized materials, and general collections for special projects, along with a digital preservation program for library assets. Digitization Services also provides expertise and consultations on digital collection building and development, digital asset management, project planning for digitization projects, digital forensics, born-digital archiving, and web archiving.
- **Digital Initiatives** works in collaboration with library research, teaching, and collections departments to develop digital content, tools, and systems for the library’s DS and digital media services. Digital Initiatives provides consultations on tools, methods, outputs, and project management of digital projects.
- **Cyberinfrastructure** manages library technology infrastructure and supports library staff, faculty, and students. Major IT services provided by Cyberinfrastructure include desktop computing support, application server management, systems virtualization, application development, data storage, cloud computing, and disaster recovery services. These technology services all touch the DS Program in some form, and ongoing IT support for the DS Program is critical to its successful operation. It is reasonable to expect that as the library’s DS activities expand and develop, there will be a parallel increase in the program’s need for IT support services.

At present, the Cyberinfrastructure team directly or indirectly supports the following technology resources and services for the DS Program:

- Library Helpdesk Support (Custom DS Support Category)
- Confluence Wiki and JIRA project management (in progress)
- Omeka Classic digital publishing system
- Omeka S content hosting system
- Open Simulator Virtual Reality Server/OSGrid VR Region Support
- Apporto Virtual Lab (in progress)

Metadata & Technical Services (MTS) Department: MTS works closely with Digitization Services to develop and maintain digital collections through work with metadata creation, digital asset management, and born-digital archives. MTS also provides expertise and consultations on digital collection development.

Recommendations

Based on our research and assessment of local needs, we recommend that digital scholarship support should be implemented at UCR Library as an interdepartmental library program that draws on the broad expertise of librarians and staff across the organization. As a permanent organizational element of the library, the Digital Scholarship Working Group (DSWG) designation would become the “Digital Scholarship Program” (DSP) and would adopt more formal staffing roles and budgetary status within the library. Below, we outline our recommendations for a service model, team structure, service workflows, brand identity, and governance.

Proposed Service Model

In contrast to other models for supporting digital scholarship - such as independent labs and centers, or a distributed network of support across multiple campus units - implementing a robust library service model has the potential to meet the majority of known DS needs at UCR.¹² Given our existing staffing, where subject and functional expertise is distributed across librarians and library staff members in various departments, we propose below a scalable and sustainable service model that will set up the UCR Library to be a strong partner in creating, sharing, and preserving campus digital scholarship.

¹² On service models in comparison to labs/centers and networks, see Maron, N. & Pickle, S. (2014). *Sustaining the Digital Humanities: Host Institution Support Beyond the Start-up Phase*. Ithaka S+R Report. <https://sr.ithaka.org/publications/sustaining-the-digital-humanities/>. pp. 23-25, 31-35.

The recommended service model consists of four primary facets: research and community-building programming; a collaborative instructional support process; project planning and management assistance; and project development and hosting support.

Research Support Program

We suggest developing digital scholarship workshops, communities of practice, and other forms of graduate student and faculty training on digital research tools and methods. As the DS Program grows, we see value in exploring ways to further incentivize engagement, including possibly developing a certificate program, as well as communicating with users in a variety of ways.

Over the next year, we specifically plan to implement the following:

1. Offer DS workshops on data visualization, text analysis, web publishing, and other high-impact, frequently requested topics.
2. Continue to host the successful DS Meetups as a community-building virtual space.
3. Collaborate with GradQuant and Blackstone LaunchPad on additional student training and workshop opportunities.

Instructional Support Program

This area of support requires collaboration with the T&L librarians as front-line course supporters and with SCUA staff on collections-based instruction. DS instructional support may consist of joint course-related consultations, embedded DS tool instruction, supporting course-related digital projects, and creating reusable learning modules for regular DS-related courses.

Over the next year, we specifically plan to implement the following:

1. Collaborate with the Director of T&L to develop an efficient working process with T&L librarians, particularly the Primary Source Literacy Librarian, to deliver effective course-related instruction on digital tools or methods.
2. Create active communication channels and mechanisms to track requests and data on the digital tools and methods being used by UCR faculty and students.
3. Generate new skill-sharing opportunities such as learning modules, internal library workshops, or project demonstrations to build and maintain awareness of DS across library departments.

Project Planning and Management

This area of support includes 1:1 and department-level consultations, matchmaking faculty-student research partnerships, supporting digital project scoping, and digital scholarship grant support.

Over the next year, we specifically plan to implement the following:

1. Identify and implement an information-gathering tool for digital project planning. This will be the starting point for outlining appropriate scope, resources (people, technology, and funding), expectations, outputs, and timelines for patrons' digital projects.
2. Establish a collaborative consultation workflow for DS project-planning questions and for triaging DS requests (see [Service Request Workflow](#), below).
3. Begin an affiliated scholars list to highlight the various faculty and staff on campus who are engaged in digital scholarship. With individuals' consent, we will link to profiles and/or digital projects, making visible a roster of potential collaborators for those seeking cross-discipline partnerships.

Project Development and Hosting

In order to begin partnering on the development and hosting of student and faculty digital projects, websites, or exhibits, we must scale existing internal workflows.

Over the next year, we specifically plan to implement the following:

1. Create a digital project showcase that will highlight student work developed in collaboration with the DS Program.
2. Offer the Apporto Virtual Lab as a software discovery platform, for small group workshops, or for independent DS project work.
3. Develop a platform-agnostic, holistic (i.e. lifecycle start-to-finish) digital project support workflow that includes digitization, the implementation of digital project hosting (including metadata creation and website/web app creation), and digital preservation. This workflow will build on existing internal digitization and preservation workflows.

Program Service Areas and Resources Needed

Cutting across these four facets of the core service model, we recommend formally supporting the following digital scholarship activities, including research methods, teaching, and publishing or sharing digital projects publicly. To effectively support these activities, the DSP requires robust internal workflows inherent to the digital project lifecycle to be supported at a base level and, in some cases, scaled up in order to support external student and faculty DS projects. The tables below summarize (in the left-hand column) our **current capacity, services, equipment,**

and/or infrastructure - i.e. what we are currently doing to support each area - as well as (in the right-hand column) the specific **resources needed to provide baseline support** for that area.

We understand “baseline support” in a service area to refer to the ability of UCR Library staff to offer UCR patrons consultations, programming, and general assistance with relevant tools, methods, and library resources related to that area. For some of these service areas, baseline support is already provided by various library departments; in others, no support is currently provided. All areas/activities on this list were derived from significant DS needs we found during our environmental scan and needs assessment.

Research	
3D Modeling	
<i>Existing Support:</i> Creat'R Lab staff, software, and physical spaces provide baseline support.	<i>Resources Needed:</i> Apporto Virtual Lab expansion (as needed to scale instruction and project workspace); software and staff training
Augmented/Virtual Reality (AR/VR)	
<i>Existing Support:</i> Creat'R Lab staff currently exploring technology and support workflows; UCR Library OSGrid instance (faculty/student VR publishing service) is live and supported by Digital Initiatives and Cyberinfrastructure.	<i>Resources Needed:</i> staff time to support additional faculty projects; staff training; AR/VR headset equipment, software, and dedicated physical space for safe use
Data Visualization	
<i>Existing Support:</i> Research Services offers some software, methods support; DS Librarian can add support to bring this up to baseline.	<i>Resources Needed:</i> Apporto Virtual Lab expansion (as needed to scale instruction and project workspace)
GIS and Digital Mapping	
<i>Existing Support:</i> Research Services provides training, community meetups, and baseline project consultation support, as well as occasionally partnering on project development.	<i>Resources Needed:</i> physical GIS lab space with high-performance computer workstations (dedicated DS lab space can serve this function); staff time to support additional faculty projects
Network Analysis	
<i>Existing Support:</i> DS Librarian has capacity to provide baseline support in this area.	<i>Resources Needed:</i> Apporto Virtual Lab expansion (as needed to scale instruction and project workspace)

Statistical Analysis	
<i>Existing Support:</i> Research Services provides training, Hacky Hours, and baseline project consultation support.	<i>Resources Needed:</i> staff time to support additional faculty consultations and projects, particularly for qualitative data analysis
Text Mining and Analysis	
<i>Existing Support:</i> DS Librarian has capacity to provide baseline support in this area.	<i>Resources Needed:</i> n/a
Web Scraping and Accessing Datasets	
<i>Existing Support:</i> Research Services provides general support; DS Librarian has capacity to provide baseline support in this area.	<i>Resources Needed:</i> n/a

Table 1. DSP Service Areas Supporting Research

Teaching	
Critical Digital Pedagogy (teaching DS methods)	
<i>Existing Support:</i> SCUA and T&L provide some ad-hoc support and training for particular DS tools/methods; DS Librarian can add support to bring this up to baseline.	<i>Resources Needed:</i> workflows for tracking faculty members' digital pedagogy tool/method instructional needs and performing hand-offs across library departments
Social Annotation and Project Collaboration	
<i>Existing Support:</i> DS Librarian has capacity to provide baseline support in this area.	<i>Resources Needed:</i> n/a

Table 2. DSP Service Areas Supporting Teaching

Projects and Publishing	
Digital Exhibits	
<i>Existing Support:</i> Internal projects undertaken collaboratively by MTS, SCUA, and DLD; Omeka S in place to support faculty digital exhibits and student showcases.	<i>Resources Needed:</i> additional developer support; workflows for supporting faculty and student exhibits using Omeka S; staff time to support faculty projects

Digital Publishing and Digital Storytelling	
<i>Existing Support:</i> Research Services currently supports ESRI Story Maps; DS Librarian can add support to bring this up to baseline.	<i>Resources Needed:</i> workflows for supporting faculty and student projects using Omeka S; investigation of resources needed to host additional platforms for faculty and student projects (Scalar, WordPress, etc.); staff time to support additional faculty consultations and projects
Multimedia and Podcast Production	
<i>Existing Support:</i> Creat'R Lab staff software, and physical spaces provide baseline support for digital media production.	<i>Resources Needed:</i> equipment and physical spaces for audio and video recording and production; staff time to expand support
Web Apps	
<i>Existing Support:</i> Research Services currently supports ESRI Story Maps; DS Librarian can add support to bring this up to baseline.	<i>Resources Needed:</i> staff time to support additional faculty projects

Table 3. DSP Service Areas Supporting Projects and Publishing

Digital Project Lifecycle	
Project Planning	
<i>Existing Support:</i> Digital Initiatives Specialist and DS Librarian have capacity to provide baseline support in this area.	<i>Resources Needed:</i> n/a
Transcription and Text/Handwriting Recognition (OCR/HTR)	
<i>Existing Support:</i> DS Librarian has capacity to provide baseline support in this area.	<i>Resources Needed:</i> OCR software; Apporto Virtual Lab expansion (as needed to scale instruction and project workspace)
Digitization	
<i>Existing Support:</i> DLD has systems and workflows for internal digitization; SCUA offers paid and limited free COVID-19 on-demand digitization; Access Services offers course reserve digitization.	<i>Resources Needed:</i> Digitization Services Manager and student workers needed to support faculty projects; additional digitization equipment required for complex projects; staff time

Metadata and Digital Asset Management	
<i>Existing Support:</i> MTS, SCUA, and DLD have systems and workflows for regular library operations; Omeka S in place to support faculty and student mediated-access content.	<i>Resources Needed:</i> staff time to support additional faculty projects; additional MTS staffing required to support complex faculty projects and scale support for project maintenance
Project Development and Hosting	
<i>Existing Support:</i> Omeka S instance is live; workflows for supporting faculty and student projects in Omeka S are being explored by DLD and SCUA.	<i>Resources Needed:</i> additional developer support; staff time to partner on faculty projects; investigation of resources needed to host additional platforms for faculty and student projects (Scalar, WordPress, etc.)
Digital Preservation and Born-Digital Archiving	
<i>Existing Support:</i> Digital Preservation Working Group (DPWG) and SCUA have systems and workflows for internal assets; Creat'R Lab is investigating storage and preservation for some student and faculty projects.	<i>Resources Needed:</i> additional staffing to support complex faculty projects and scale support for project maintenance; dedicated funding for a Digital Preservation Management System; workflows for preserving inactive digital projects; investigation of interoperability across library digital collections, asset management, and preservation systems; policy development for handling faculty and student content and born-digital assets

Table 4. DSP Service Areas Supporting the Digital Project Lifecycle

Developing each of these service areas within a comprehensive Digital Scholarship Program will require the library to leverage existing support structures and staff expertise across multiple departments. The library's capacity to support most of the research, teaching, and publishing activities can be scaled through (a) internal librarian cross-training and (b) active collaboration across library units and the DS Program team (see below for the DS [Team Structure](#)).

In order to expand the DS Program's capacity to support faculty and student digital project development, however, the staffing resources indicated above are absolutely necessary to provide baseline support for DS project digitization, metadata and digital asset management, and preservation, in particular. Our current staffing levels are adequate only for internal digital project development, and even internal digital library projects would benefit from the allocation of the resources described above.

Over the coming year, the DS Program team will continue to evaluate our capacity to support these areas. The success of the DS Program will require us to develop a better understanding of how to effectively leverage existing staff expertise across the library and build our capacity through cross-training (short-term) and hiring additional library staff (long-term).

Proposed Team Structure and Service Workflow

Team Structure

We recommend the staffing model for the DS Program described below in order to take advantage of the existing collegial environment at the library. The main DSP team will consist of current library staff from multiple library departments, but the interdisciplinary nature and technical needs of the DSP services will at times also require broad engagement of staff from across the library. Thus, the service model and workflow processes described in this report are designed to take advantage of a collaborative, team-based organizational model.

The core DSP team members will have both collaborative and specific program support roles, which include:

- DS Program Sponsors: Report to cabinet, submit budget and staffing requests, and ensure the DSP has sufficient resources to function effectively. The AUL for the Digital Library and the Director of Research Services will serve in this role.
- DS Program Lead: Serve as the coordinator of routine program activities and projects; maintain events schedule; supervise student workers; collect and submit reporting and feedback data. The Digital Scholarship Librarian will serve in this role.
- Digital Initiatives Representative: Serve as core team member and liaison to DLD (Digitization, Digital Initiatives, Cyberinfrastructure). The Digital Initiatives Specialist will serve in this role.
- Creat'R Lab Representative: Serve as core team member and liaison to Creat'R Lab. The Innovative Media Librarian will serve in this role.
- Teaching & Learning Representative: Serve as a liaison to the T&L department. (TBD)
- Special Collections (SCUA) Representative: Serve as core team member and liaison to SCUA. The Special Collections Public Services, Outreach & Community Engagement Librarian will serve in this role.
- Metadata (MTS) Representative: Serve as core team member and liaison to MTS. The Digital Assets Metadata Librarian will serve in this role.

It is recommended that the DSP team (in collaboration with each team member's supervisor) identify specific professional development activities that will support the development of the program's goals. Such activities may include grant writing, project management, emerging technologies, and research methods.

We anticipate that the development of the DSP services will also involve periodic collaboration with library units not directly represented by the core program team. Rather than approach each library department on an ad-hoc basis, the DSP will establish an informal community of liaison staff who can be approached when departmental assistance or individual expertise is needed from their areas. This group of “affiliated staff” will be recruited on an entirely voluntary basis and will be approved by each individual’s supervisor or department head.

Service Request Tiers

To a significant extent, DS Program services will be request-driven. In addition to scheduled programming and instruction activities, the DSP expects to receive a wide array of service requests from students and faculty. While it is not yet possible to project the precise distribution of these requests, for the purposes of establishing the DS Program structure the types of anticipated requests have been categorized into four tiers that correspond both to the relative complexity of the services requested and the volume of requests expected to be received at each level of service.¹³ The diagram below illustrates the relationship between the four tiers of anticipated service requests and their correspondence to the [Service Model](#) components described above, as well as how the DSP expects them to be funded.

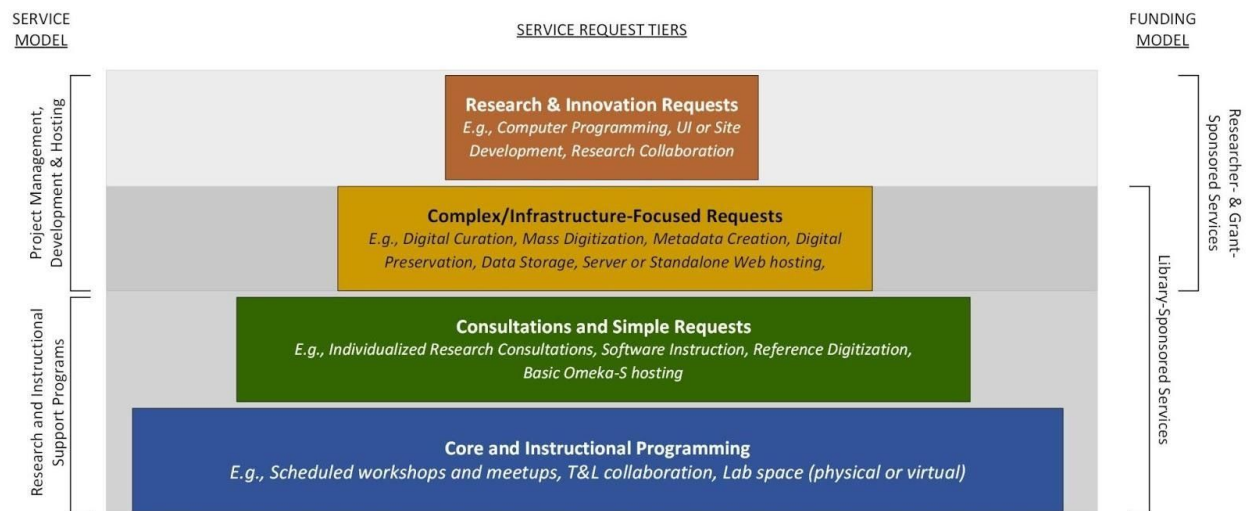


Figure 1. Proposed Service Request Tier Model for Digital Scholarship Services

The two foundational service request tiers - Core and Instructional Programming and Consultations and Simple Requests - represent the bulk of the services that the DSP will provide. As shown in the Funding Model column on the right, it is also assumed that these

¹³ This hierarchy is loosely adapted from the service model developed for New York University. See Vinopal, J. & McCormick, M. (2013). “Supporting Digital Scholarship in Research Libraries: Scalability and Sustainability.” *Journal of Library Administration* 53(1), p. 7.

categories of request will be sponsored, or funded, by the library, as they predominantly require staff time, library infrastructure, and library spaces to fulfill.

In contrast, the upper two tiers represent more complex services that require more staff time and library resources to complete. We expect that fewer requests will fall into these two categories. Because the library maintains some permanent level of technology infrastructure, some of the more complex projects (e.g. Omeka S hosting) can be subsidized and provided free of charge to student and faculty requestors. However, more sophisticated requests that involve in-depth research, custom software development, or additional infrastructure will need to be funded by the requestor or by external grant funding. As service requests are received over the next 12 months, the DSP will be able to more specifically define which services can be subsidized, and which should be funded by external sources.

Service Request Workflow

Students and faculty will access the Digital Scholarship Program services described above through a variety of communication channels, including in-person consultation, via email, or through an online request form. Regardless of the request method or size of the intended project, each inquiry will follow a common service request methodology that allows DSP team members to evaluate service needs, match them to the appropriate services, and establish an appropriate project plan, where needed. The overall stages of the DS service workflow include: 1) request submission, 2) request triage, 3) service implementation, 4) fulfillment, and 5) conclusion or wrap-up.

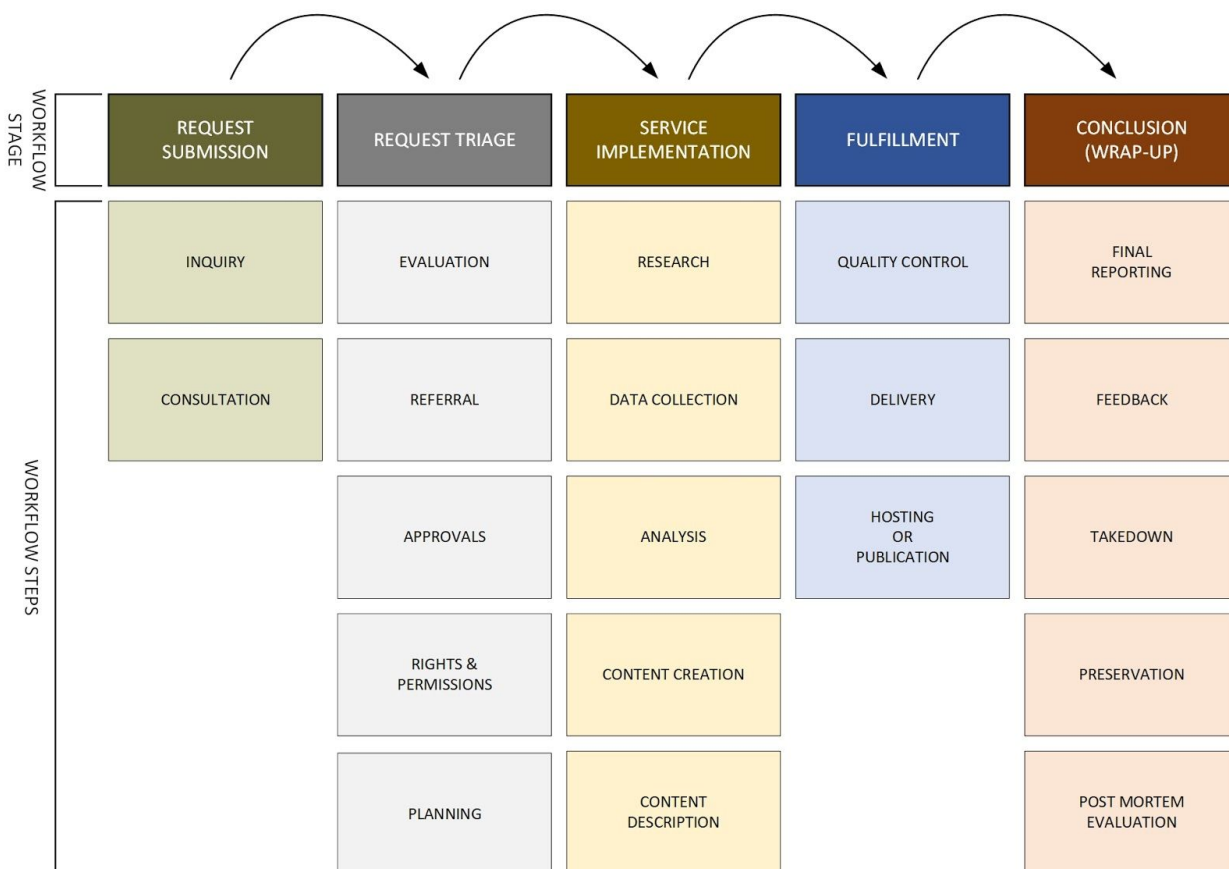


Figure 2. Proposed DSP Service Workflow Stages and Steps

The diagram above illustrates the main service request stages along the top row, and what are anticipated to be the most frequently required workflow steps for each stage listed beneath. The requirements of each service request will vary significantly, based on the complexity of the request and its resource needs. Thus, each stage may include all or just some of the workflow steps shown on the diagram, and as the DSP expands its service offerings, additional workflow steps may be added. Each workflow stage is described briefly below:

1. **Request Submission:** Patrons will be able to submit service requests through email, in person (once campus reopens), or through an information-gathering project request form that will be developed in the next 12 months.¹⁴ Service requests will also arise as a result of DSP outreach consultations and instructional programming, and in some cases the DS Program team may directly solicit project requests from students or faculty.
2. **Request Triage:** Once a request is received, the DS Program Lead will evaluate it and determine the appropriate next steps. In some cases, a service request may not match current DSP service areas, and the request will be referred to an appropriate specialist

¹⁴ We have reviewed several good examples of such working DS request forms; see, for instance, Indiana University Bloomington Libraries' form, <https://libraries.indiana.edu/file/planning-digital-projects-pdf>.

on campus who may be able to help. If the request is accepted, further evaluation is needed to determine whether the requestor possesses the rights or use permissions for any intellectual property content that will be used in the request. The overall complexity and resource requirements needed to fulfill the request are also examined at this stage: if significant library resources are required (e.g. staff time, contributions from multiple library departments, or the expenditure of funds), the request will be forwarded to the DS co-sponsors for approval before work on the request begins.

In cases where a service request cannot be fulfilled by a single referral, during the triage stage the DS Program Lead will consult with the program team to develop a project plan that identifies the staff and resources needed to fulfill the request. A hypothetical example would be that a faculty member approaches the DSP with a request to host online a set of photographic prints they made for use in one of their courses; the DS Program Lead will work with the program team to create a project plan that includes a consultation session with the Digital Assets Metadata Librarian, digitization work by the Digitization Services department, and online hosting with Omeka S with support from the Digital Initiatives department.

The project plan will define the end product of the service request, as well as the project workflow, staff involved, and resources needed. The requestor and the DS Program co-sponsors will sign off on the project plan to indicate agreement on the work to be done. Additionally, in cases where a project will involve extended use of a library resource (e.g. ongoing online hosting on Omeka S), a Memorandum of Understanding (MOU) will be signed by the requestor and the library; the MOU will include the obligations and limitations of the service provided by the library. The MOU template will be developed during the next 12 months.

3. **Service Implementation:** We anticipate that the majority of DS patron service requests will be relatively simple in scope and easily resolved by forwarding them to the appropriate DS team or library staff member. The diagram below illustrates how the request submission and triage stages will be used to forward the bulk of requests to the proper library specialist:

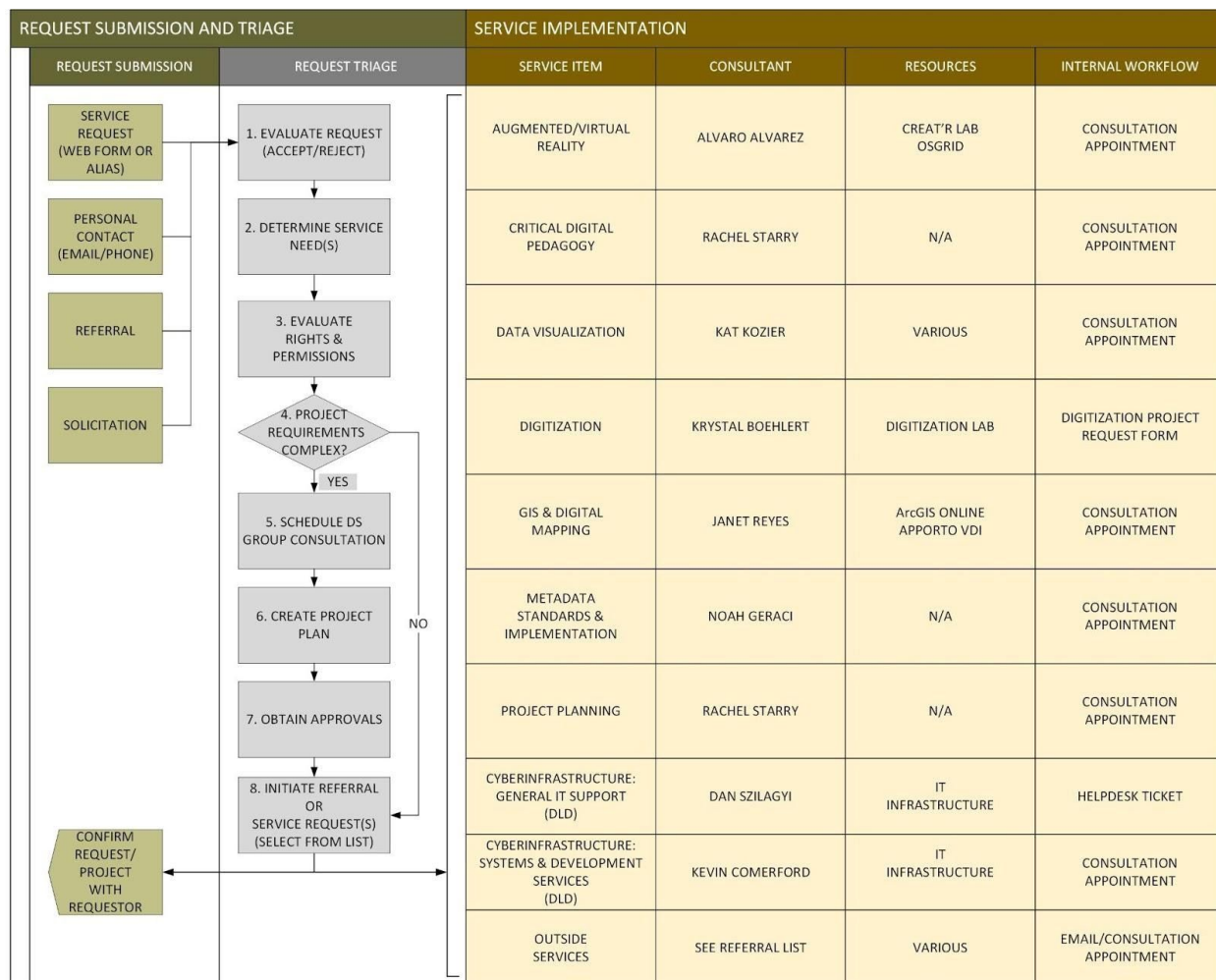


Figure 3. DS Service Request Submission, Triage, and Service Implementation

The list of services and contacts shown is selective and is meant to exemplify the internal network of service contacts that the DS Program will maintain. Updating, maintaining, and expanding our service areas and contact list will be an ongoing effort.

Over the next 12 months the DSP will begin developing standards for use in fulfilling DS service requests (e.g. minimum metadata requirements, scanning standards, etc.). Established library workflows will be utilized for any internal library services and resources used to fulfill a DS service request, and library policies will be followed in providing DS services.

4. **Fulfillment:** Once project work for a service request is completed, the end product is reviewed for quality and accuracy by the appropriate DSP team members and delivered to the requestor. Delivery may include online transfer of files, hosting of content online

(using library or external resources), or another agreed-upon method or technology.

5. **Conclusion or Wrap-Up:** Once a service request is completed, several “finishing up” tasks will be completed, including soliciting feedback from service requesters on the outcome of their request and performing internal evaluations of the resulting DS projects. Temporarily hosted projects will need to be taken down at an agreed-upon sunset date, and over the next 12 months the DSP will investigate options for preserving digital research content produced by the program. At this time, a practical solution for digital preservation appears to be that DS projects that utilize library-owned content should be preserved through the library’s internal digital preservation program, and requestors that provided non-library owned content should be referred to the CDL Merritt digital preservation service.

Use and Handling of Digital Scholarship Project Content

In the course of providing services to faculty and students, the Digital Scholarship Program will be required to work with a variety of intellectual property content. The broad variety of content used in digital scholarship research necessitates policies and procedures to ensure proper use and handling of research materials under U.S. Copyright and other laws. Some content will be owned outright by the service requestor (e.g. original research materials, such as data, interpretive graphics and visualizations, or creatively-produced content); some content will be derived from third-party sources; and some content will be taken from the library’s general and special collections. These guidelines will be further developed and expanded as the DSP receives a larger volume of requests.

1. **Working with Non-Library Content for DS Projects:** The following are general principles and guidelines for handling physical and digital content not owned by the library that are submitted as part of a digital scholarship service request:
 - Requestor supplies proof of ownership, rights, or formal permission to use the content for the project.
 - If supplying physical source material (e.g. papers to be scanned), the requestor must provide specific permission for library staff to handle the materials and should forewarn library staff if materials are fragile or unique (library staff should only accept fragile or unique materials with special approval from Cabinet). The requestor must also indemnify the library against damage occurring to the physical materials.
 - Requestor provides descriptive information about the content (for publishing), unless special arrangements are made with the library and funding is provided.
 - Requestor provides detailed specifications for digitization or conversion of content for the request (specifications can be developed in collaboration with library staff).

2. **Working with Library-Owned Content for DS Projects:** The following are general principles and guidelines for handling physical and digital collections materials that are owned by the library that are submitted as part of a digital scholarship service request:
 - Requestor submits requests to use or digitize library-owned materials through established library channels (e.g. a request for digitization of special collections materials is submitted to SCUA via Aeon).

Any use of library-owned collections materials necessitates the use of existing library workflows; for example, requests to digitize special collections materials would be submitted to the Digitization Services Steering Committee.

Proposed Identity and Communication Strategies

The UCR Library already has a strong foundation of marketing and communication strategies to build from; we do not recommend reinventing the wheel but instead leveraging existing expertise and practices to create a strong and identifiable brand for UCR Library digital scholarship support. With support from Cabinet and in coordination and consultation with the Communication Specialist, we plan to implement the following at minimum over the next year:

- **Brand identity for the DS Program:** The DS Program will benefit from the type of branding that we have implemented for public-facing departments and programs including Research Services, Teaching and Learning, Special Collections and University Archives, Collection Strategies, and the Creat'R Lab. Having this identity solidified will also enable us to create digital and physical flyers and signage, as needed.
- **Website content:** To start, content related to the Digital Scholarship Program will live under the Research Support dropdown menu. Over the coming year, we will consider additional places to link to and augment this content.
- **Listserv communication:** We will utilize the already-created digital scholarship listserv (digital-scholarship@lists.ucr.edu), which currently has 118 subscribers, to send a small monthly digital scholarship digest to the UCR community.¹⁵ The monthly digest serves the dual purposes of aggregating upcoming workshops and events for promotional purposes, as well as maintaining momentum and regular communication with the broader DS community. The listserv also creates a channel for the UCR community to write in and discuss any issues they would like group input on.
- **Quarterly newsletter:** In addition to the smaller monthly digests, we plan to assemble a quarterly community update of digital scholarship activities, resources, funding opportunities, and national conferences of interest to our community here at UCR. This quarterly newsletter will also be sent out over the DS listserv.

¹⁵ UCR Library, Digital Scholarship Community list, <https://lists.ucr.edu/mailman/listinfo/digital-scholarship>.

These recommendations suggest only a starting point for how we will communicate and promote the DS Program. We recognize that additional planning and iteration will be needed in the early years of the DS Program to coordinate outreach across library departments and ensure clear communication to the broader UCR community. Additionally, our communication strategies will need to be responsive to incoming feedback on the DS Program as we continue to build a network and assess our efforts.

Proposed Governance and Budget Requirements

Reporting Structures

The regular operations of the DS Program are subject to the supervisory authority of the Library Cabinet and the Associate University Librarians. The DS Program shall have one or more sponsors at director level or above, who provide routine guidance and direction on the structure and function of the program. DS services, activities, and operations will be coordinated by the Digital Scholarship Program Lead. The Digital Scholarship Team collaborates to deliver DSP services, and will include representative Librarians and staff from across the UCR Library.

The DS Program is subject to a variety of internal controls, including University-wide and Library policies and procedures. The DSP will operate under established principles of good governance: the program, its managers, and team members will strive to embody the principles of Accountability; Adherence to UC, University, and Library policies and procedures; Transparency; Responsiveness; Effective and Efficient operation; and fostering an environment that is Equitable, Inclusive, and Participatory.¹⁶

DS Program services and operations are influenced by input and feedback from a variety of sources, including program objectives and goals; input received from stakeholder and constituent feedback; and the consultation of a DS advisory council, described below.

¹⁶ See the UC Regents Policy 1111, [Policy on Statement of Ethical Values and Standards of Ethical Conduct](#).

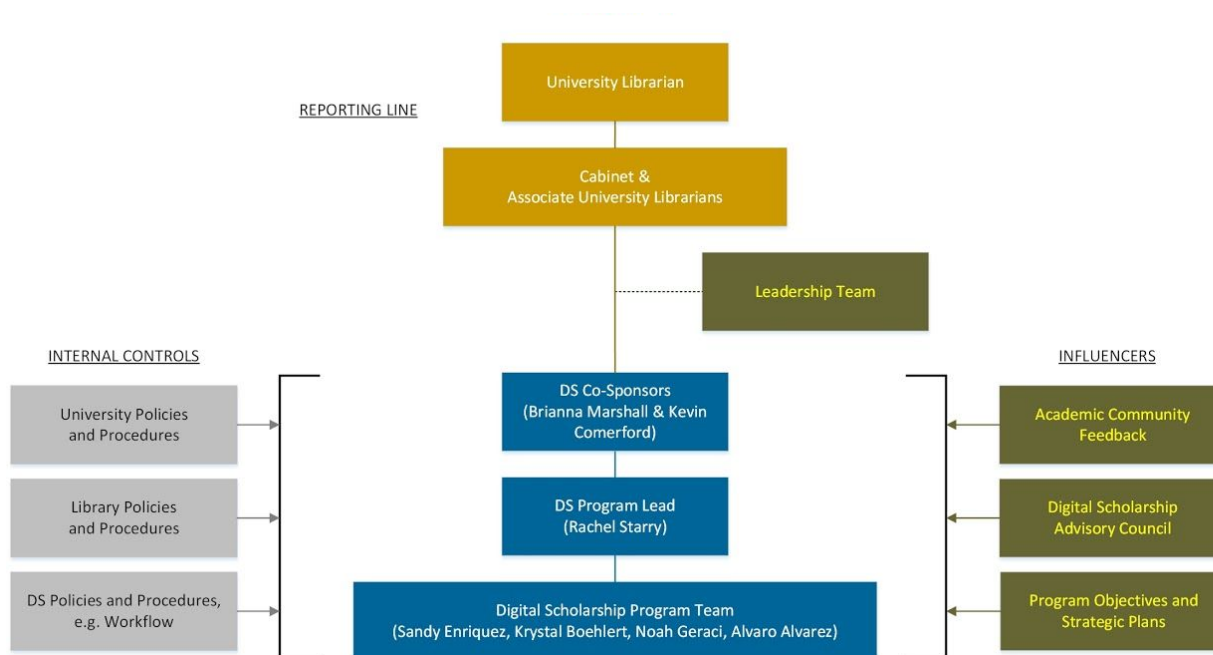


Figure 4. Digital Scholarship Program Reporting Line, Internal Controls, and Influencers

Advisory Council

Building on the successful steering committee model utilized by the Creat’R Lab, the DS advisory council would be a non-voting group of faculty, staff, and students whose role is to share high-level feedback on the DS Program as it evolves over time and to serve as ambassadors for the DS Program within other campus units. The council will consist of Brianna Marshall and Kevin Comerford as *ex officio* standing members from the UCR Library, in addition to 6-8 UCR community members who are invited to serve for 1-year terms, with the possibility of renewing for multiple terms. Members will be invited from among UCR faculty, staff, and students who are actively engaged in digital scholarship teaching, research, or support.

Budget Requirements and Financial Support

While budgetary needs for the initial startup year of the DSP will be minimal, ongoing services will need periodic software, outreach, or communications purchases that should fit into the regular library operating budget to be approved by Cabinet. It is assumed that in subsequent years there will be additional funding requirements for the program. As such, the DSP co-sponsors will submit an annual budget request to the library Cabinet for consideration each spring during the library’s regular budget planning process. Out-of-cycle budget requests for special projects may also be submitted by the DSP co-sponsors to the library Cabinet on a

case-by-case basis. DSP budget needs will likely fall into one or more of the following main categories: outreach and instruction, project funding, facilities and infrastructure, and student workers:

1. Outreach and Instruction: Most expenses for outreach and teaching needs can be purchased with normal library operating funds (e.g. communications services, software for teaching, etc.).
2. Project Funding: Many DS projects will be accomplished without the need to expend budgetary resources. However, when significant application software, vendor services, or temporary staff are required to complete a project, the DSP will seek grant, donor, or other funding sources. Wherever appropriate, project funding will be sought in partnership with a faculty collaborator.
3. Facilities and Infrastructure Funding: Once the library reopens and the DSP is able to resume evaluating physical spaces in which to establish a lab facility, the program will require remodeling and infrastructure funds to prepare the space for patron use. If library funding is not available for this initiative, the DSP will work with the library development staff to identify appropriate grants or donors who can provide funding.
4. Student Workers: Student workers (undergraduate or graduate) will be needed to assist in supporting virtual and physical DS spaces, maintaining DSP learning resources (e.g. LibGuides, online tutorials), and providing peer mentorship to other students. As such, the DS Program should participate in the regular student worker budget planning process each year. If regular student worker funds are unavailable, then the DSP will seek alternative funding sources for the student worker budget (e.g. grants, donations, etc.).

Development Support

The DSP will require ongoing support from library development to identify appropriate donors, gift and grant opportunities to accomplish its program and infrastructure goals.

Future Work

Given the unique circumstances impacting our work since campus closures began earlier in 2020, the working group adapted our activities and timeline to focus on conducting a robust research agenda and initial needs assessment in order to meet the original charge of outlining recommendations for a UCR Library DS Program and service model. We recognize that outreach, assessment, and implementation of new programs and services will be an ongoing process, and wish to note where we have identified specific plans for this work to be carried out over the next 12 months.

Plan for Investigating Library Space Needs

While the majority of our program is being designed as virtual-first to accommodate the new COVID-era working environment, it is important to look ahead to what the DSP will need upon a return to campus. Building virtual first does not negate the need for physical meeting and collaboration spaces, but allows us to remain nimble and responsive in the case of future disruptions. As noted in the findings sections above, access to physical spaces may have a significant impact on both our programming and on the community we are building and serving.

Several physical space options are being considered, based on overall library organizational needs, space availability and the DSWG's needs assessment. This assessment will look at our capacity to host events, presentations, workshops, and group collaborations, as well as physical hardware and technologies. It is envisioned that the physical space for the Digital Scholarship program would also be available for other library departments to use for instructional and training purposes. Space needs were proposed in the Digital Scholarship and Media Center (DSMC) Proposal, and the current options being considered are Rivera LRDC (preferred) or Orbach Classroom 122.¹⁷

Over the coming year we will investigate library space needs for the DS Program in the following ways, noting that these actions will first require us to centralize data collection across the involved library units:

- Evaluate the ways that collaboration, visualization, and presentation spaces would benefit the upcoming slate of programming.
- Determine space needed for special equipment or special workspaces (e.g. video production).
- Evaluate the attendance of workshops, meetups, and other DS events as an indication of value and capacity to plan for hosting in-person events.
- Track the usage of the Apporto Virtual Lab stations as an indication of the need for physical workstations with specific DS software, including hardware and software requests that can only be accommodated in a physical space.

Plan for Ongoing Needs Assessment

Summary of Completed Needs Assessment Activities

During the course of our work this year, we have completed an initial round of faculty interviews to investigate specific local needs; a review of the literature to explore general digital scholarship support needs across disciplines; and an environmental scan of digital research interests and current support across all campus labs, centers, schools, colleges, and departments. Additionally, we launched a pilot Digital Scholarship Meetup event series during

¹⁷ See Appendix 7: "Digital Scholarship and Media Center (DSMC) Proposal."

Summer 2020, which has enabled us to gather general feedback and begin to build a community of practice including librarians, students, faculty, and university staff. For a more detailed overview of our completed needs assessment activities, see [Findings #2: Digital Scholarship Needs at UCR](#).

Proposed Future Needs Assessment Activities

Collective Interviews

- Description: A second round of faculty interviews conducted by the DS Program team.
- Timeframe: Winter 2021 (and ongoing, as needed)
- Facilitators: DSP team members
- Data collected: Qualitative data on UCR-specific digital scholarship research interests, ongoing projects, teaching, and library support needs.
- Stakeholders: UCR faculty and staff

Workshop & Event Assessment Form

- Description: A short assessment form distributed to workshop/event attendees to solicit feedback on the event.
- Timeframe: Deliver form by January 2021 for use in Winter 2021 and onwards
- Facilitators: Rachel Starry, Krystal Boehlert
- Data collected: Workshop learning outcomes; participant information; requests for future workshop topics.
- Stakeholders: all UCR community members (UG, graduate students, faculty, staff)

Social Media Outreach

- Description: A series of posts over library social media accounts to engage undergraduates and solicit feedback on undergraduate DS interests and needs.
- Timeframe: Spring Quarter 2021 (April-June)
- Facilitators: Rachel Starry (working with Melanie Ramiro)
- Data collected: Quantitative data on undergraduate digital scholarship interest levels, areas of interest, software used/needed, and requested workshop topics.
- Stakeholders: UCR undergraduate students

Individual Interviews

- Description: Outreach interviews conducted by librarians on the DS team to supplement the collective interviews as needed.
- Timeframe: Ongoing
- Facilitators: Librarians on DSP team
- Data collected: Qualitative data on digital scholarship research interests and project support needs.
- Stakeholders: UCR graduate students, faculty, and staff

Student Group Outreach

- Description: Online meetings with small groups of DS practitioners to discuss their interests and needs, either hosting dedicated meetings or attending organizations' standing meetings.
- Timeframe: Spring 2021, Fall 2021 (as needed)
- Facilitators: DSP team members
- Data collected: Quantitative and qualitative data on DS interests and needs among particular student or campus groups at UCR.
- Stakeholders: UCR UG students, graduate students, and faculty; student clubs, campus partners, specific departmental programs (e.g. Digital Agricultural Fellowship program)

Campus Survey

- Description: A survey of UCR community members on broad areas of interest and support needs, to round out our formal needs assessment and provide quantitative data to inform AY 2021-2022 services and programming. Specifically intended to align with library strategic planning over the next year.
- Timeframe: Conduct survey in Spring or Summer 2021 (survey instrument already drafted)
- Facilitators: Rachel Starry, Krystal Boehlert; will look to collaborate with campus partners to refine and deliver the survey.
- Data collected: Quantitative and qualitative data on digital scholarship research interests, planned library service areas, space needs, and programming/training needs.
- Stakeholders: UCR UG students, graduate students, and faculty

12-Month Work Plan

The following section summarizes the action items identified by the Digital Scholarship Working Group as DS Program priorities over the coming year. This list represents the first phase of the program's implementation at UCR Library and will serve as a benchmark for future assessment and evaluation of the program.

Research Support Program

- Offer DS workshops on data visualization, text analysis, web publishing, and other high-impact, frequently requested topics.
- Continue to host the successful DS Meetups as a community-building virtual space.
- Collaborate with GradQuant and Blackstone LaunchPad on additional student training and workshop opportunities.

Instructional Support Program

- Collaborate with the Director of T&L to develop an efficient working process with T&L librarians, particularly the Primary Source Literacy Librarian, to deliver effective course-related instruction on digital tools or methods.

- Create active communication channels and mechanisms to track requests and data on the digital tools and methods being used by UCR faculty and students.
- Generate new skill-sharing opportunities such as learning modules, internal library workshops, or project demonstrations to build and maintain awareness of DS across library departments.

Project Planning and Management

- Identify and implement an information-gathering tool for digital project planning. This will be the starting point for outlining appropriate scope, resources (people, technology, and funding), expectations, outputs, and timelines for patrons' digital projects.
- Establish a collaborative consultation workflow for digital scholarship project planning questions and triaging DS requests.
- Begin an affiliated scholars list to highlight the various faculty and staff on campus who are engaged in digital scholarship. With individuals' consent, we will link to profiles and/or digital projects making visible a roster of potential collaborators for those seeking cross-discipline partnerships.

Project Development and Hosting

- Create a digital project showcase that will highlight student work developed in collaboration with the DS Program.
- Offer the Apporto Virtual Lab as a software discovery platform, for small group workshops, or for independent project work.
- Develop a platform-agnostic, holistic (i.e. lifecycle start-to-finish) digital project support workflow that includes digitization, the implementation of digital project hosting (including metadata creation and website/web app creation), and digital preservation. This workflow will build on existing internal digitization and preservation workflows.

Investigating Library Space Needs

- Evaluate the ways that collaboration, visualization, and presentation spaces would benefit the upcoming slate of programming.
- Determine space needed for special equipment or special workspaces.
- Evaluate the attendance of workshops, meetups, and other DS events as an indication of value and capacity to plan for hosting in-person events.
- Track the usage of the Apporto Virtual Lab stations as an indication of the need for physical workstations with specific DS software, including hardware and software requests that can only be accommodated in a physical space.

Ongoing Needs Assessment

- Conduct additional faculty interviews (collectively with the DSP team and through individual librarian outreach).
- Develop a workshop and event assessment form.
- Implement social media outreach in collaboration with UCR Library Communications.
- Conduct outreach to student groups.

- Solicit DSP feedback from campus units through a survey instrument.

Workflows, Policies, and Standards

- Begin developing standards for use in fulfilling DS service requests (e.g. minimum metadata requirements, scanning standards, etc.).
- Develop a project MOU template.
- Establish more detailed policies for the use and handling of library-owned and non-library-owned project content.

General Work

- Transition from biweekly Digital Scholarship Working Group meetings to regular Digital Scholarship Program team meetings.
- Establish an informal community of liaison staff who can be approached when departmental assistance or individual expertise is needed from their areas.
- Evaluate at regular intervals our capacity for supporting our core DS service areas, based on staff capacity and allocation of resources.
- Work with the Communications Specialist to implement brand identity and communications strategies for marketing events and growing our DS community.

Appendices (Available Separately)

The 7 report appendices were not included in this version of the report due to space considerations

Appendix 1: Working Group Structure and Charge (PDF)

Appendix 2: Annotated DSWG Research Bibliography (PDF)

Appendix 3: List of Reviewed Digital Scholarship Initiatives (PDF)

Appendix 4: Benchmarking Research Summaries and Visualizations (PDF)

Appendix 5: Literature Review Summary of Common DS Needs (PDF)

Appendix 6: UCR Environmental Scan Spreadsheet (Static View) (PDF)

Appendix 7: Digital Scholarship and Media Center (DSMC) Proposal (PDF)