# Project management for digital projects with collaborators beyond the library

Authors: Theresa Burress, Chelcie Rowell

Persistent link: http://hdl.handle.net/2345/bc-ir:107641

This work is posted on eScholarship@BC, Boston College University Libraries.

Post-print version of an article published in College & Undergraduate Libraries 2(4): 300-321. doi:10.1080/10691316.2017.1336954.

These materials are made available for use in research, teaching and private study, pursuant to U.S. Copyright Law. The user must assume full responsibility for any use of the materials, including but not limited to, infringement of copyright and publication rights of reproduced materials. Any materials used for academic research or otherwise should be fully credited with the source. The publisher or original authors may retain copyright to the materials.

# Abstract

Librarians are increasingly embracing project management to guide their work outside of routine library operations. Some humanities scholars, too, especially within the digital humanities community, are bringing project management techniques to bear on scholarly digital projects. We argue that librarians and their diverse collaborators can apply project management practices to a broad range of research, teaching, and learning projects with collaborators beyond the library. Two case studies illustrate this argument, one from each author's experience: creating a community biodiversity wiki for West-Central Florida and redesigning an interdisciplinary firstyear seminar around creating 3D models of historic Venetian buildings.

# Keywords

project management, project development, collaborative research, collaborative pedagogy, librarian-faculty partnerships

# Introduction

The authors first met in 2016 as participants in the week-long course Issues in Large Project Planning and Management led by Lynne Siemens at the Digital Humanities Summer Institute (DHSI), which is held annually at the University of Victoria. As two of five librarians among sixteen participants—others were faculty members and doctoral candidates—we sympathized with each other's roles as de facto project managers for collaborative digital projects. In this article we share how we applied principles of project management, first formally practiced at DHSI, to our partnerships with faculty, students, and community members beyond the four walls of our respective libraries.

Project managers and teams working in different settings may use slightly different definitions of project management. For the purpose of this article, we will follow the definition used in our course. Project management is "a set of principles, methods, tools and techniques for the effective management of objectives-oriented work in the context of a specific and unique organizational environment" (Knutson and Bitz 1991, 2). Our literature review draws upon treatments of project management for library-centric projects as well as explorations of project management for scholarly digital projects—two environments that are usually aligned in terms of mission, but sometimes distinct in terms of culture.

Bringing together these two strands of the literature, we assert that librarians and their diverse collaborators can apply project management practices to a broad range of research, teaching, and learning projects in order to shepherd them from aspiration to fruition. Far from imposing a single formula for how to undertake projects, project management practices can be customized to fit a broad range of projects. Furthermore, project management principles can be deployed to diplomatically navigate fraught perceptions of hierarchy and establish appropriate credit, acknowledging the diverse expertise of collaborators and articulating the essential role each person plays in the project. The habits of thought developed by teams who adopt a project management approach enable project teams to reframe their composition from client and service provider to full-fledged partners. Librarians can adopt the vocabulary of project management to inflect project conversations with an understanding of collaboration as engagement, rather than collaboration as service provision.

To make our argument, we illustrate essential components of defining and planning projects with examples from two collaborative digital projects, one from each author's experience. Throughout our discussion, we demonstrate how teams applied project management practices—while also acknowledging where project teams struggled to do so—within the context of a collaborative digital project with a librarian as a key member of the project team.

# Literature Review

#### Project Management in Libraries

Increasingly, librarians are embracing project management to guide their work outside of routine library operations. A number of authors agree with the assertion of Kinkus (2007) that project management in libraries is "here to stay" (361) and that project management skills are now essential for professional librarians working in a variety of roles (Mathews and Pardue 2009; Mosley and Kaspar 2008; Fagan and Keach 2011; Feeney and Sult 2011; Horwath 2012; Saunders, Rozaklis, and Abels 2014).

Discussions of project management are an established part of the scholarly conversation within librarianship. Many case studies document the use of project management methods in the implementation of systems or technology-intensive projects (Cervone 2011, 2012a, 2012b, 2012c), which coincides with an elevated need for librarians to acquire project management skills in an information technology context (Cortez et al. 2004; Mathews and Pardue, 2009). Project management themes have also begun to emerge in other areas of library operations, such as technical services and collections (Maddox, Abbott, and Laskowski 2014), internal workload management (Vinopal 2012), and instruction (Stewart-Mailhiot and Ryan 2015). Feeney and Sult (2011) take an expansive approach with their broad incorporation of project management practices into workflows throughout the library organization.

Comprehensive guides and manuals provide guidance to librarians leading projects as well as library administrators who need to support their project managers (Carpenter 2010; Buser, Massis, and Pollack 2014; Note 2015). In *Project Management for Libraries*, Buser, Massis, and Pollack cover basic project management planning principles, phases and components of project management methodology, and they offer guidance as to which project management principles can be employed to greatest effect in different types of library projects. Note (2015) offers practical step-by-step advice to information professionals who find themselves leading project-based work, emphasizing that project management techniques represent a beneficial method of thinking, communicating, and successfully completing work. While the case studies outlined in reference guides often include examples of library systems and space planning projects as well as digitization projects and event programming, these publications do not yet cover the hybrid digital and community projects with which many liaison and digital scholarship librarians are engaging.

## Project Management in Scholarly Digital Projects

If librarians are embracing project management, disciplinary faculty members often still resist project management as emblematic of corporatization. Yet even within academia more and more proponents, especially within the digital humanities community, are making a case to bring project management techniques to bear on collaborative research, teaching, and learning (Siemens 2016). Consequently, humanities scholars are beginning to explore project management practices, especially as humanities scholarship becomes more collaborative and digitally inflected.

Evidence of the uptake of project management can be found in the number of resources and training opportunities targeted at humanities scholars. Lynne Siemens' week-long course Issues in Large Project Planning and Management has been offered over ten times at DHSI (Siemens 2016). Siemens uses her course as a lens through which to examine the benefits and challenges of translating business-oriented tools and techniques for librarians and scholars within the digital humanities community of practice. Siemens points to an increasing number of grantfunded research opportunities for humanities scholars that require substantial collaborative efforts in proposing, implementing, and reporting results back to funding agencies, and she asserts that project management principles, methods, tools, and techniques can be used to effectively complete this work. Similarly, DevDH: Development for the digital humanities, a workshop and set of open learning modules developed by Appleford and Guiliano (2013), provides digital humanists initiating projects for the first time the "intellectual and strategic scaffolding" necessary to complete research objectives within the constraints of finite resources. Leon (2011) illustrates the adoption of project management practices for humanities scholarship with personal narrative and shares recommendations for how graduate education within the humanities could cultivate collaboration-ready scholars with project management skills.

Certainly, the translation of project management from industry to academia is not one-toone; the semantics are more nuanced. As Croxall (2011) notes, some "steps and considerations

5

that a project manager working for IBM might make simply don't translate to the university" where the project initiator is sometimes both client and project manager. Further tensions arise when applying project management practices to scholarship with a digital inflection because completion is a fuzzier concept for digital research projects than it is for scholarship embodied in print (Brown et al. 2009; Kretzschmar 2009). Still, for humanists who are not familiar with project management techniques the project plan is analogous to the research proposal.

#### Librarian Collaboration: From Service to Engagement

In the 2013 white paper titled *New Roles for New Times, Transforming Liaison Roles in Research Libraries*, authors Jaguszewski and Williams discuss how liaison librarian work has evolved away from a service model that emphasizes discipline-specific research assistance and instruction and towards an engaged liaison model, which requires the librarian to participate in every component of the research, teaching, and learning process. The authors note:

Engagement requires an outward focus...Building strong relationships with faculty and other campus professionals, and establishing collaborative partnerships within and across institutions, are necessary building blocks to librarians' success. (Jaguszewski and Williams 2013, 4)

Librarians are responding to these trends in the literature. The complex task of building relationships in an academic community is addressed by Pasek (2015), who uses a concept map to describe liaison librarian outreach and relationship-building activities. Broughton (2016) takes the next step of measuring the quality of librarian relationships with their academic departments

via an engagement matrix that seeks to differentiate between minimal engagement activities (e.g., one-shots and course guides) and high engagement activities such as those related to instruction (e.g., Conor 2016), grant-funded research (e.g., Brandenburg et al. forthcoming), and publishing (e.g., Burress et al. 2016).

This broad shift in librarian focus to an engagement model results in more projectoriented work. Librarians are initiating and leading hybrid projects that rely on technology (e.g., Atiso and Freeland 2016) and engaging in partnerships beyond the library (Burich et al. 2006; Wamsley 2009). As librarians engage in deeper and larger-scale collaborations with diverse partners—faculty and students, as well as campus and community partners—they may encounter differences in professional, disciplinary, or community-based norms about how to plan and implement work.

#### Library "Support" for Digital Humanities

Debates about service models for libraries and digital humanities echo the conversation taking place about liaison librarianship as service provision or engagement (Muñoz 2012; Nowviskie 2013; Posner 2013; Sula 2013; Vandegrift and Varner 2013; Vinopal and McCormick 2013). Nowviskie (2013) argues that when libraries and librarians conceive of their role in scholarly research and development as service provision, their contribution is encased in a "black box" (59). This perspective was informally affirmed at the 2016 Digital Library Federation forum when Rowell tweeted that describing her work as "magic" obfuscates her expertise; during the Forum her tweet was retweeted thirty-five times and favorited sixty-five times. [Insert figure 1: tweet] Some genres of digital scholarship, such as thematic digital research collections and digital scholarly editions, blur traditionally distinct roles of archivists, librarians, scholars, and humanists who now are "constantly negotiating their shifting roles in the stewardship of the archives of the future" (Clement et al. 2013, 113). At other times, differences in norms stand in sharp relief, as when, for example, negotiating authorship status for collaborative research among librarians (whose professional research community values co-authorship) and humanists (who may encounter stigma against multiple authors) (Keener 2015). Siemens et al. (2011) note that "academics may not be as accustomed to working within a team with deliverables on timelines, when compared to the often production-oriented work of many librarians" (342). Amidst the shifting sands of collaboration, librarians must navigate and execute these new, increasingly complex engagements that take them beyond the four walls of the library.

Many resources have been developed to help guide collaborative conversations between librarians and external partners. Among these are the UCLA Library's Special Collections Digital Project Toolkit (2015), the Emory Center for Digital Scholarship's project charter and project proposal form (Varner 2014a, 2014b), and the memorandum of understanding workbook developed at the University of Texas Arlington Libraries (Mirza, Currier, and Williamson 2016). Institutions are making use of these kinds of partnership agreements because they express intellectual and even emotional support for projects; these agreements universalize intent. In this paper, we argue that project management skills and associated habits of mind can offer crucial benefits to librarians who are actively seeking out and participating in high engagement activities.

# Case Studies: Two Collaborative Digital Projects

Siemens' course (2016) covers three main topic areas: (1) defining a project, (2) planning a project, and (3) project implementation. We illustrate components of the project definition (purpose, scope, roles, and responsibilities) and project plan (work breakdown structure and schedule) with two collaborative digital projects that were workshopped during the course. Implementation is beyond the scope of our discussion; instead we focus on the clarity brought to two very different projects by undertaking a more formal project management approach during the defining and planning stages of the projects. First we provide an overview and background of each collaborative digital project, one from each author's experience. Then we deconstruct the project definition and project plan into their essential components, illustrated by each project.

#### Background of Case One: A Course Redesign

Our first case study is a collaboration between a librarian and a history faculty member to redesign the first-year seminar (FYS) Floating City: Public Life in Renaissance Venice around creating 3D models of historic Venetian buildings in order to empower students to develop a critical interpretive approach to primary sources. A small-scale project, the partnership nevertheless benefited from a project-management approach, particularly because each collaborator was involved in a number of other projects.

The Z. Smith Reynolds Library serves the Undergraduate College, School of Business, Graduate School of Arts and Sciences, and School of Divinity of Wake Forest University, a private university of 7,800 students with a strong liberal arts ethos. At Wake Forest, the Professional Center Library serves the School of Law, and the Coy C. Carpenter Library serves the School of Medicine and North Carolina Baptist Hospital.

Wake Forest University's first-year seminars foster "intense intellectual exchange" on a thought-provoking topic across the disciplines during students' first year as undergraduates (Undergraduate College of Wake Forest University 2016). Seminars are designed to spark the intellectual curiosity of students and foster alternate forms of creative expression, both within the bounds of the semester and throughout students' lives (Committee on First Year Seminars 2016). Each first year seminar shares core learning outcomes. By the end of a first-year seminar, students have practiced:

- Reading increasingly sophisticated texts critically,
- Posing and responding to complex ideas,
- Identifying, analyzing, interpreting, and evaluating different points of view, and
- Constructing cogent arguments in both written and oral form.

This particular partnership built upon the librarian's two previous collaborations with history faculty to incorporate digital projects into a first-year seminar. The librarian worked with one history faculty member to incorporate collaborative web exhibits and digital mapping into the first year seminar Nature, Environment, and Place in American Thought taught in spring 2014 and fall 2015. The librarian first collaborated with a history faculty member to reimagine the Floating City first-year seminar taught in spring 2015 by incorporating two different digital mapping assignments. The first iterations of each of these course designs were improvisations, and the collaborators cheerfully described the experiences as "building the bicycle at the same time that we're riding." Nevertheless, anticipating a second iteration of the Floating City first-

year seminar, both the faculty member and the librarian felt that the planning process would benefit from a more purposeful approach and more resources. Together they applied for a Summer Technology Exploration Program (STEP) grant to support direct expenses and stipends in support of planning time and professional development to redesign the Floating City first-year seminar to incorporate 3D modeling as well as digital mapping (Office of the Provost of Wake Forest University 2016). The STEP grant proposal formed the basis of the project plan for the course redesign.

#### Background of Case Two: A Community Wiki

Our second case study is a project to create a crowdsourced biodiversity wiki for West-Central Florida and build a community of practice among the contributing institutions (including a public liberal arts college, a regional campus of a large public university, a non-profit research organization, a private arts college, and a public community college).

Cook Library serves two academic communities, that of New College of Florida (a public liberal arts college with approximately 850 students) and also University of South Florida Sarasota-Manatee (USF-SM is a regional campus of the USF university system with approximately 2,100 students).

The concept of this digital community project originated in the spring of 2016 with two USF-SM faculty members (biology and technical communications) who wanted to identify and document microorganisms found in the local region. The technical communications professor, who previously used wikis in his coursework, met the humanities librarian through an informal meeting set up by the Dean of Cook Library to explore collaboration opportunities between Cook Library and USF-SM, and discovered through informal conversation that the humanities librarian had experience with Wikipedia-related course and outreach initiatives and wanted to learn more. The librarian followed up by organizing a meeting with both faculty members and the sciences librarian, and a collaborative project was proposed. The group agreed to pursue two preliminary action items:

- 1. The humanities librarian led a wiki workshop in June 2016 to introduce the faculty members to the digital platform and provide some examples of science-related wikis.
- One faculty member investigated available campus technology options suitable to support a wiki platform.

Although the workshop successfully provided an overview of the *how* and *why* of science-related wiki initiatives, the attempt to garner institutional technology support to host a wiki was unsuccessful. The project lost traction and seemingly reached a dead end without a clear plan or resources. However, the librarian used the project as her case study during the DHSI course Issues in Large Project Planning and Management. The process of defining the project and creating a project plan for the community wiki allowed this author to articulate the project goals, better understand the existing obstacles, and identify the questions that must be addressed by the planning group in order to determine if the project is feasible.

At the start of the fall 2016 semester, the librarian attempted to convene the group but initially received affirmation from only the sciences librarian. After a second communication, the librarian received affirmative responses from the team members. The biology faculty member met with the humanities librarian for an in-depth discussion regarding short- and long-term goals for the project. This led to an impromptu opportunity to meet the department administrator regarding possible avenues to obtain seed funding that would support the pilot wiki platform. Based on the project start documentation that the librarian had created, the project team drafted a preliminary proposal requesting internal funding to procure server space on which to set up a wiki platform and develop a set of pilot articles that can be used as templates for future contributions.

# Defining a Project

The first step in managing a successful project is to define the project (Siemens 2016). Project start documentation is often created by project teams during the project definition phase as a way to fully consider the various facets of a project including the problem and opportunity statement, scope, completion criteria, assumptions, impact statement, risks, resource requirements, and constraints.

## Purpose and Scope

The project's purpose serves as an overview, or elevator speech, for external audiences and internally serves as a touchstone to remind the team of what success looks like throughout later phases of planning and implementation. As such, the statement of purpose is collaboratively composed by the project team, even when one team member provides the germ of the project idea. Clear and concise, a statement of purpose should be able to be expressed in three minutes although the process of attaining that level of clarity and concision invariably takes much longer. Essentially, the purpose statement answers a project's *why* question. After being introduced to the principles of project management, course participants spent day one defining the project's purpose and delineating project scope—not only what is within scope, but also, crucially, what is out of scope. Without other project team members present, these statements of purpose and scope served only as drafts on which course participants could receive instructor and peer feedback.

The purpose of redesigning the Floating City first-year seminar is two-fold. First, the course redesign aims to heighten students' awareness of their own learning processes as they read, interpret, and construct arguments about primary sources by requiring them to do so through the less familiar means of constructing digital maps and 3D models. Second, it aim to create a set of modifiable, repeatable methods for incorporating digital mapping and 3D modeling into the early-college classroom, enabling our exploration to serve as a generative platform for other teacher-scholars in the Wake Forest community. Bringing 3D modeling into the humanities classroom is not in itself innovative. The 3D Virtual Buildings Project (Bonnett 2003, 2004) provides a model for this pedagogical approach. As Bonnett (2003) notes, "Our aim is to help students realize an important concept about historical representations-namely that they are models, models that are imperfect representations of the objects they purport to represent. We believe that students best learn this insight by constructing a historical artifact for themselves." However, the approach is new to Wake Forest's classrooms. Our contribution, then, is to document and disseminate our experiment throughout our campus community. Furthermore, the models that guide our experimentation took place within advanced digital history or digital art history courses. We are adapting these digitally inflected assignments for a first-year seminar.

The most important aspect of our project scoping, then, was determining what kind of learning goals were in scope and out of scope for the Floating City first-year seminar. During a visit to Duke University's Wired! Lab for Digital Art History & Visual Culture, experienced faculty and librarians distinguished between courses with a "small plate" digital component and courses with a "large plate" digital component (Jacobs 2016). This distinction became core to how we bounded the scope of our course redesign. When the content of the course is as much about mastering the process knowledge of a digital tool or method as it is about the subjectmatter knowledge, it's a "large plate" course. When the focus is squarely on subject-matter knowledge and digital process knowledge is de-emphasized, it's a "small plate" course. Although a first-year seminar is not an advanced course within a discipline that is the typical "large plate" course, it is a decidedly process-oriented course. The "Guidelines for proposals for first year seminar (FYS) courses" (Committee on First Year Seminars 2016) specify that a "central focus of the FYS should be attention to the processes involved in learning, in addition to the coverage of content and mastery of topic." In many ways, too, our scoping conversations were dependent upon our familiarity with creating digital maps and 3D models. Throughout the summer, as we cultivated our own digital process knowledge, we clarified the scope of our expectations for students participating in the course. Ultimately, we came to view creating a structurally sound 3D model of a historic building as beyond the scope of learning goals for a first-year seminar. For example, the units of measurement need not be precisely correct, so long as the proportions were recognizable. The broad learning goals of the course instead were defined as closely reading visual and textual primary sources in order to represent them as 3D models and digital maps, understanding 3D modeling and digital mapping as interpreting acts, articulating an

academic argument in a digital medium, and assessing how different technologies either facilitate or constrain academic inquiry or argumentation.

The purpose of the community wiki project is to create a crowdsourced biodiversity catalog for West Central Florida and build a community of practice among the local consortium of higher education institutions. For this author, a major benefit of articulating the purpose of the project was to limit the scope of the project to a feasible goal within a specific time frame. During the initial exploratory conversation, one faculty member expressed particular interest in describing locally-occurring species of microscopic organisms. Although a community collaborator considered expanding to other areas of Florida as well as another country in which that organization is actively doing research, the project purpose was consulted, and the project team chose to limit the scope to a geographic area that includes two counties in Florida. Throughout the planning stages, the project team returned to the project's articulated purpose at each meeting to avoid the temptation of mission creep and overpromising time and other resources.

#### Building a Team

A crucial step in defining a project is creating a team who has the requisite skills needed to accomplish the project goals. Key roles on a project team include the researcher or principal investigator, the project manager, and the project members. After learning about and discussing the facets of building and developing teams, course participants spent day two delineating their project team roles and responsibilities. In smaller projects such as the case study of a course

16

redesign, a single person might play more than one role. However, the act of identifying each role and the requisite skills needed to carry out that role can provide clarity to all team members.

In the first case study of a course redesign the collaborators' roles followed from tacit structures of collaboration that emerged in the earlier experimentation with incorporating digital mapping into the Floating City first-year seminar taught in spring 2015. However, writing the STEP grant proposal made it necessary to explicitly define the roles that we found ourselves playing before. The librarian was responsible for investigating technologies for 3D modeling in the humanities, seeking training opportunities in these technologies, offering feedback to the history faculty member on assignment and assessment design, and providing instruction and consultation to students throughout the spring 2017 semester. The history faculty member was responsible for exploring best practices in the design of digitally inflected assignments and taking the lead on designing assignments and assessments consistent with the technology choices. During collaborations on both iterations of the course, the two found it most effective to work in parallel: the librarian explored technology options while the faculty member drafted assignments; we shared and adjusted our work in regular meetings. The faculty member was the lead instructor of the course, and the librarian embedded within the course, delivering guest lectures and attending students' oral presentations delivering the outputs of digitally inflected assignments. Both the faculty member and the librarian shared the responsibility of cultivating new expertise in 3D modeling for the humanities with the expectation that the librarian would partner with, and the historian would mentor, other faculty wishing to explore similar pedagogical strategies.

In the second case study of the community wiki, a skill inventory matrix was extremely helpful to identify the skills that each team member brought to the project, as well as to identify skill gaps for which the team needed to recruit additional members. Articulating team member roles and responsibilities via the same matrix also helped the librarian to begin a conversation about the project manager role and the tasks that would be involved. Table 1 shows the preliminary skill inventory matrix that identifies the skills needed to complete each of the project components as well as possible collaborators who have the needed skills to contribute to the project.

#### [Insert Table 1: skill inventory matrix]

Once the project team is assembled, the team can meet and establish ground rules that are specific to the project, determining who will coordinate the meetings, how often meetings will occur, as well as the information sharing tools that will be used throughout the planning and implementation of the project. If these types of details are overlooked, they can often lead to communication breakdowns, but in projects that are conducted in an ad hoc manner where common expectations and norms are not established, the risk of failure increases substantially. Particularly for projects whose teams are composed of team members from different disciplinary or professional communities—historians and librarians, for example—it is important to discuss authorship conventions. Who will be a named author on which project outputs? Does the order in which authors are listed matter for that project team member's processes for evaluation and promotion? As crucial as these conversations are, the librarians in both cases struggled to raise these questions given few face-to-face meeting opportunities, in which project content inevitably takes precedence.

For an in-depth treatment of the development of teams throughout a large-scale multiyear research collaboration, see Siemen's series on collaboration and team building during the six years of the INKE project (Siemens 2013a, 2013b, 2014, 2015; Siemens et al. 2016).

#### **Project Start Documentation**

Once the project purpose has been articulated and a team is assembled, the project manager must create the project start documentation, which allows the project team to review the purpose of the project and articulate the following:

- Problem and opportunity statement
- Scope of the project
- Completion criteria
- Assumptions
- Impact statement
- Risks
- Resource requirements

On day three of the course, participants revisited their project purpose together with the project documentation, and they began drafting more comprehensive project start documentation.

In the case of the community wiki, the process of creating the project start documentation raised more questions than it answered and it uncovered several assumptions and issues that had not previously been discussed among the team. It was also an opportunity to further limit the scope of the project by the geographic region covered as well as the criteria for completion. With born digital projects, project completion is known to be an issue (Brown et al 2009; Kretzschmar

2009) and this project was no exception. Librarians at Cook Library work on a twelve-month contract and take annual leave throughout the year, while faculty members normally work on a nine-month contract and rarely take leave during the fall and spring semesters. These two different work schedules create different workflows throughout the course of the year and limit the amount of time that faculty members and librarians can work together. The academic calendars of New College of Florida differs from that of USF-SM, adding an additional wrinkle when attempting to coordinate a project team's schedule. The difficult step of identifying a specific time frame (in this case, one academic year) and completion criteria that included technology infrastructure, site governance, and the need for template articles describing individual species resulted in a better understanding of what goals would be feasible during the time frame as well as what goals would need to be deferred to a subsequent stage of the project.

# Planning a Project

Once a project team agrees to all of the components of the project start documentation, the work of creating a project plan can begin. According to Siemens (2016), the planning stage of a project is designed to create a map linking together tasks, time, and resources meant to reduce uncertainty throughout the project implementation while "realizing that uncertainty cannot be fully eliminated" (347).

#### Work Breakdown Structure

The process of creating a work breakdown structure begins with a list of each and every task that is required in order for the project to be successfully completed. The tasks are then organized into workflows (e.g., by person, phase, or location) and the relationships between tasks are identified. At this point in the process, time is *not* considered but critical dependencies *are* considered. A critical dependency is when a particular task cannot be completed until another task is completed. The process of reviewing parallel workflows and identifying critical dependent tasks may be found in different workflows. Ultimately, a critical path should be identified, in which delays on specific tasks may slow down or halt the entire project, putting the completion of the project in jeopardy. Contingency plans may be worth developing for the critical path in order to assure project completion.

After learning about the various components of work breakdown structure, course participants turned to their own projects on day four to create task lists, assemble tasks into a network based on the relationships between tasks, and review the resulting network to identify one or more critical paths.

In the case of the course redesign, the tasks of the work breakdown structure derived from the project's broad goals of instructional design, documentation, and dissemination. Instructional design tasks included revising the fifty-word course description, finalizing the syllabus, designing each individual assignment and grading workbook, designing the day-long 3D modeling workshop for students, scheduling librarian office hours for student project groups, etc. Documentation tasks included making student work available online (with their permission) and making assignments and assessment rubrics available as open educational resources for other faculty to consult and adapt as necessary to their own courses. Finally, dissemination tasks included presenting at TechXploration (the forum for all STEP grant recipients), writing a blog post for the website of Wake Forest's DH Community, leading a workshop sponsored by the DH Community on the pedagogy of 3D modeling in the humanities, and contributing to a disciplinary newsletter identified by the faculty member. These high-level tasks were already identified either implicitly or explicitly by the STEP grant proposal. However, the exercise at DHSI of listing all project tasks-not only those at the highest level of granularity-clarified the work to be done. Upon returning to campus, the librarian suggested to the faculty member that they spend their regularly scheduled meeting identifying each task, which they did using the web-based collaboration tool Trello (see figure 2). Furthermore, they broke broad tasks such as writing an assignment down into intermediate steps (see figure 3). This work breakdown structure is extremely lightweight compared to what would be required for a large-scale project. Nevertheless, it helped to identify the most critical path: educating ourselves on the digital method of 3D modeling, upon which all instructional design activities were contingent. If we had no sense of what we were asking students to create, we could have no sense of how to design learning strategies or assessment strategies.

[Insert figure 2: Trello board]

[Insert figure 3: Trello card]

In the case of the community wiki, the initial task list included only a handful of items; however, the act of writing single tasks on individual sticky notes and visualizing them on the wall prompted the recollection of many additional tasks, and the final list, while still reflecting information gaps, gave this author a strong sense of the project as a whole. The act of re-ordering each individual task in their appropriate parallel workflows while disregarding a specific schedule or timeline was also illuminating in that the interdependencies of specific tasks became evident (see figure 4).

#### [Insert figure 4: sticky-note tasks]

As with the process of project definition, exploring the tasks, workflows, and network for community wiki resulted in a number of new questions about the project trajectory to address with the project team, including:

- When to begin recruiting collaborators? Before, after, or in parallel with the development of the technical infrastructure, the site governance and policies, and article submission structure?
- When to apply for funding? Before, after, or in parallel with the pilot development?
- When to publish?

#### Schedule

Not until this point in the planning process, when all workflows and contingencies have been identified, does a project team take all of the previously generated documentation and allocate necessary resources to the project, including time. On day five participants were asked to manually sketch out their draft schedule using the structure of a Gantt chart (see figure 5). [Insert figure 5: Gantt chart]

After reviewing the Gantt chart, the project team can then reflect on and analyze the original project plan to determine if the objectives are still being met in a balanced way. In the

case of the course redesign, the team removed obstacles from the critical path of laying a foundation of knowledge about 3D modeling by setting learning milestones with plenty of slack for missed deadlines: completing tutorials, sketching a simple house, sketching a structure from a source photograph. In the case of the community wiki, the critical path remained the identification of technical infrastructure that can host the wiki platform. Funding opportunities would be constrained by the schedule of external grant cycles and timelines for funding opportunities. It became clear that revised project documentation would be necessary to feed both grant proposals and publishing opportunities. Scheduling a time when the entire project team could focus on that documentation would be important.

# **Reflections on Two Projects in Progress**

In the case of the course redesign, understanding the undertaking as a project, not business as usual, reframed the partners' collaborative processes. The first time that the librarian and faculty member experimented together with reimagining the Floating City first-year seminar, the framework of the semester was already in place. The second time, the collaborators together imagined the purpose of the course redesign and shared design responsibilities from early in the course planning process. Defining roles in the project documentation surfaced the expertise each partner was bringing to the table, as well as our shared skills gaps. The greatest benefit of the project documentation, however, was realized when the librarian accepted a position at another institution. Instead of a stressful experience collecting project documentation scattered throughout email, the collaborators were able to simply invite a new collaborator from the library to review and contribute to the project documentation and spaces for collaboration in Google Drive, Google Calendar, and Trello.

In the case of the community wiki, the thought work involved throughout the project definition and planning process allowed this author to better understand and articulate the project concept and scope. The week-long process of defining a project and crafting a project plan resulted in a wealth of documentation that formed the bedrock of a cohesive funding proposal. As the project team transitions from project planning to project implementation, the team will continue to benefit from the sustained effort to develop a project framework that took place during and after this course.

Furthermore, the clarity of the project documentation has contributed to the formation and deepening of collaborative relationships because prospective new partners can more easily gauge whether their interests and aspirations align with the stated purpose of the project. In one instance, a meeting of faculty across academic institutions revealed similar goals. The project team invited that faculty member to review and contribute to the internal funding proposal. By signing off on the project plan, the faculty member became an official member of the project team. In another instance, the project documentation has helped to reveal divergent goals. Following a successful pitch of the project purpose to a department administrator, the administrator organized an exploratory meeting with the core project team and the leadership team from a community research organization. The project documentation formed the basis of talking points for the meeting. This information sharing resulted in the realization that the preliminary project goals of the academic partners diverged from the potential project goals of the community partners. Nevertheless, the clarity afforded by the project documentation enabled the conversation to turn to other possible collaborations, leading the meeting participants to come away with new contacts and leads for other research opportunities.

The clarity of the project documentation has also helped to identify tie-ins to other distinct projects. One potential tie-in project is for the communications professor and sciences librarian to co-develop and co-teach a science writing course for both institutions. The community wiki could serve as a public venue for students' science writing, and the course could serve as a model for generating and maintaining wiki content.

# Conclusion

In this article, we have illustrated the kinds of project-based work in which librarians (both subject specialists and functional specialists) are engaging with collaborators beyond the library. In the cases of two very different kinds of projects, adopting a project management approach helped to move the project forward within constraints of cost, scope, and schedule. Perhaps more importantly, however, the project management approach helped to bridge cultural differences in ways of working among librarians and their partners.

# Acknowledgements

The authors are grateful to Lynn Siemens and participants in the 2016 Issues in Large Project Planning and Management course at the Digital Humanities Summer Institute (DHSI) for engaging in rich discussions and sharing perspectives drawn from personal experience. The redesign of the first year seminar Floating City: Public Life in Renaissance Venice was supported by a Summer Technology Exploration Program (STEP) grant co-sponsored by Wake Forest University's Office of the Provost and Information Systems. Professional development funding for Burress to attend DHSI was sponsored by the New College of Florida. Professional development funding for Rowell to attend DHSI was sponsored by the Wake Forest University's Humanities Institute with support made possible by a major grant from the National Endowment for the Humanities.

# Bibliography

- Appleford, Simon, and Jen Guiliano. 2013. "DevDH: Development for the Digital Humanities." http://devdh.org.
- Atiso, Kodjo, and Chris Freeland. 2016. "Identifying the Social and Technical Barriers Affecting Engagement in Online Community Archives: A Preliminary Study of the 'Documenting Ferguson' Archive." *Library Philosophy and Practice*, 1.
- Bonnett, John. 2003. "Following in Rabelais' Footsteps: Immersive History and the 3D Virtual Buildings Project." *Journal of the Association for History and Computing* 6 (2). http://hdl.handle.net/2027/spo.3310410.0006.202.
- ——. 2004. "New Technologies, New Formalisms for Historians: The 3D Virtual Buildings." Literary and Linguistic Computing 19 (3): 273–87. doi:10.1093/llc/19.3.273.
- Brandenburg, Marci D., Sigrid Anderson Cordell, Justin Joque, Mark P. MacEachern, and Jean Song. 2017. "Interdisciplinary Collaboration: Librarian Involvement in Grant Projects." *College & Research Libraries* 78 (3): 272–282. doi: 10.5860/crl.78.3.272.

- Broughton, Kelly. 2016. "Developing a Matrix and Using Self-Reported Scoring to Measure
   Librarian Engagement on Campus." Edited by Stephen Town. *Performance Measurement and Metrics* 17 (2): 142–49. doi:10.1108/PMM-04-2016-0018.
- Brown, Susan, Patricia Clements, Isobel Grundy, Stan Ruecker, Jeffery Antoniuk, and Sharon
  Balazs. 2009. "Published yet Never Done: The Tension between Projection and
  Completion in Digital Humanities Research." *DHQ: Digital Humanities Quarterly* 3 (2).
  http://www.digitalhumanities.org/dhq/vol/3/2/000040.html.
- Burich, Nancy J., Anne Marie Casey, Frances A. Devlin, and Lana Ivanitskaya. 2006. "Project Management and Institutional Collaboration in Libraries." *Technical Services Quarterly* 24 (1): 17–36. doi:10.1300/J124v24n01\_02.
- Burress, Theresa, Maribeth Clark, Sarah Hernandez, and Nova Myhill. Forthcoming.
  "Metaliteracy in the Digital Landscape: Using Wikipedia for Research-Writing across the Curriculum." In *Rewired: Research-Writing Partnerships in a Frameworks State of Mind*, edited by Randall McClure, 175–90. Chicago: Association of College & Research Libraries.
- Buser, Robin A., Massis, Bruce E., and Pollack, Miriam. 2014. *Project Management for Libraries: A Practical Approach*. Jefferson, North Carolina: McFarland & Company, Inc.
- Carpenter, Julie. 2010. Project Management in Libraries, Archives and Museums: Working with Government and Other External Partners. Elsevier.
- Cervone, H. Frank. 2011. "Understanding Agile Project Management Methods Using Scrum." OCLC Systems & Services: International Digital Library Perspectives 27 (1): 18–22. doi:10.1108/10650751111106528.

- 2012a. "Understanding the Elements of a Digital Library Project Plan: Part 1." OCLC Systems & Services: International Digital Library Perspectives 28 (2): 75–78. doi:10.1108/10650751211236604.
- 2012b. "Understanding the Elements of a Digital Library Project Plan: Part 2." OCLC Systems & Services: International Digital Library Perspectives 28 (3): 126–29. doi:10.1108/10650751211262119.
- 2012c. "Understanding the Elements of a Digital Library Project Plan: Part 3." OCLC Systems & Services: International Digital Library Perspectives 28 (4): 176–79. doi:10.1108/10650751211279111.
- 2016. "Organizational Considerations Initiating a Big Data and Analytics
   Implementation." *Digital Library Perspectives* 32 (3): 137–41. doi:10.1108/DLP-05-2016-0013.
- Clement, Tanya, Wendy Hagenmaier, and Jennie Levine Knies. 2013. "Toward a Notion of the Archive of the Future: Impressions of Practice by Librarians, Archivists, and Digital Humanities Scholars." *The Library Quarterly* 83 (2): 112–30. doi:10.1086/669550.
- Committee on First Year Seminars. 2016. "Guidelines for Proposals for First Year Seminar (FYS) Courses." Undergraduate College of Wake Forest University. http://college.wfu.edu/files/2016/12/FYS-guidelines-2016-17.pdf.
- Conor, Erin. 2016. "Engaging Students in Disciplinary Practices: Music Information Literacy and the ACRL Framework for Information Literacy in Higher Education." *Notes* 73 (1): 9–21. doi:10.1353/not.2016.0087.

- Cortez, Edwin M., Sanjay K. Dutta, and Edward John Kazlauskas. 2004. "What the Library and Information Professional Can Learn from the Information Technology and Project Management Knowledge Areas." *Portal: Libraries and the Academy* 4 (1): 131–44. doi:10.1353/pla.2004.0005.
- Croxall, Brian. 2011. "12 Basic Principles of Project Management." Blog. ProfHacker: Teaching, Tech, & Productivity. March 3. http://www.chronicle.com/blogs/profhacker/12-basic-principles-of-projectmanagement/31421.
- Fagan, Jody Condit, and Jennifer A. Keach. 2011. "Managing Web Projects in Academic Libraries." *Library Leadership & Management* 25 (3). https://journals.tdl.org/llm/index.php/llm/article/view/2159.
- Feeney, Mary, and Leslie Sult. 2011. "Project Management in Practice: Implementing a Process to Ensure Accountability and Success." *Journal of Library Administration* 51 (7-8): 744–63. doi:10.1080/01930826.2011.601273.
- Horwath, Jenn Anne. 2012. "How Do We Manage? Project Management in Libraries: An Investigation." *Partnership: The Canadian Journal of Library and Information Practice* and Research 7 (1). doi:10.21083/partnership.v7i1.1802.
- Jacobs, Hannah. 2016. "Scaling Digital Humanities Pedagogy." Presented at the Duke Center for Instructional Technology Showcase, Durham, NC, October 12. https://cit.duke.edu/showcase2016/files/2016/10/digital-humanities-PDF.pdf.

- Jaguszewski, Janice, and Karen Williams. 2013. "New Roles for New Times: Transforming Liaison Roles in Research Libraries." Report. Association of Research Libraries. http://conservancy.umn.edu/handle/11299/169867.
- Keener, Alix. 2015. "The Arrival Fallacy: Collaborative Research Relationships in the Digital Humanities" 9 (2). http://www.digitalhumanities.org/dhq/vol/9/2/000213/000213.html.
- Kinkus, Jane. 2007. "Project Management Skills: A Literature Review and Content Analysis of Librarian Position Announcements." *College & Research Libraries* 68 (4): 352–63. doi:10.5860/crl.68.4.352.
- Knutson, Joan, and Ira Bitz. 1991. Project Management: How to Plan and Manage Successful Projects. AMACOM Division of American Management Association.
- Kretzschmar, William A., Jr. 2009. "Large-Scale Humanities Computing Projects: Snakes Eating Tails, or Every End Is a New Beginning?" 3 (2).

http://www.digitalhumanities.org/dhq/vol/3/2/000038/000038.html.

Leon, Sharon. 2011. "Project Management for Humanists: Preparing Future Primary Investigators." In #alt-Academy: Alternative Academic Careers, 173–86. Media Commons: A Digital Scholarly Network. http://mediacommons.futureofthebook.org/altac/pieces/project-management-humanists.

- Maddox Abbott, Jennifer A., and Mary S. Laskowski. 2014. "So Many Projects, so Few Resources: Using Effective Project Management in Technical Services." *Collection Management* 39 (2/3): 161–76. doi:10.1080/01462679.2014.891492.
- Mathews, Janie M., and Harold Pardue. 2009. "The Presence of IT Skill Sets in Librarian Position Announcements." *College & Research Libraries* 70 (3): 250–57.

- Mirza, Rafia, Brett Currier, and Peace Ossom Williamson. 2016. "Memorandum of Understanding Workbook, Version 1.0." <u>http://hdl.handle.net/10106/25651</u>.
- Mosley, Pixey Anne, and Wendi Arant Kaspar. 2008. "Making the Good Hire: Updating Hiring Practices for the Contemporary Multigenerational Workforce, Part One." *Library Leadership & Management* 22 (2): 92–99.
- Muñoz, Trevor. 2012. "Digital Humanities in the Library Isn't a Service." *Github Gist*. August 19. https://gist.github.com/trevormunoz/3415438.

Note, Margot. 2015. Project Management for Information Professionals. Chandos Publishing.

- Nowviskie, Bethany. 2013. "Skunks in the Library: A Path to Production for Scholarly R&D." Journal of Library Administration 53 (1): 53–66. doi:10.1080/01930826.2013.756698.
- Office of the Provost of Wake Forest University. 2016. "Grants and Funding." *Wake Forest University*. http://provost.wfu.edu/current-faculty/faculty-resources/grants-and-funding.
- Pasek, Judith E. 2015. "Organizing the Liaison Role." *College & Research Libraries News* 76 (4): 202–5.
- Posner, Miriam. 2013. "No Half Measures: Overcoming Common Challenges to Doing Digital Humanities in the Library." *Journal of Library Administration* 53 (1): 43–52. doi:10.1080/01930826.2013.756694.
- Rowell, Chelcie Juliet. 2016. "Tweet." Microblog. @ararebit. November 8. https://twitter.com/ararebit/status/796040309008437248.
- Saunders, Laura, Lillian Rozaklis, and Eileen G. Abels. 2014. *Repositioning Reference: New Methods and New Services for a New Age*. Rowman & Littlefield.

- Siemens, Lynne. 2013a. "Firing on All Cylinders: Progress and Transition in INKE's Year 2." Scholarly and Research Communication 3 (4).
- ———. 2013b. "Responding to Change and Transition in INKE's Year Three." *Scholarly and Research Communication* 4 (3).
- ——. 2014. "Research Collaboration as 'layers of Engagement': INKE in Year Four." *Scholarly and Research Communication* 5 (4).
- ———. 2015. "'INKE-Cubating' Research Networks, Projects, and Partnerships: Reflections on INKE's Fifth Year." Scholarly and Research Communication 6 (4).
- ———. 2016. "Project Management and the Digital Humanist." In *Doing Digital Humanities: Practice, Training, Research*, 343–57. London: Routledge.
- Siemens, Lynne, Richard Cunningham, Wendy Duff, and Claire Warwick. 2011. "A Tale of Two Cities: Implications of the Similarities and Differences in Collaborative Approaches within the Digital Libraries and Digital Humanities Communities." *Literary and Linguistic Computing* 26 (3): 335–48. doi:10.1093/llc/fqr028.
- Siemens, Lynne, INKE Research Group, and others. 2016. "'Faster Alone, Further Together': Reflections on INKE's Year Six." *Scholarly and Research Communication* 7 (2).
- Stewart-Mailhiot, Amy, and Marianne Ryan. 2015. "Project Management." *Reference & User Services Quarterly* 55 (1): 18–20.
- Sula, Chris Alen. 2013. "Digital Humanities and Libraries: A Conceptual Model." *Journal of Library Administration* 53 (1): 10–26. doi:10.1080/01930826.2013.756680.

- Sun, Li. 2008. "A Metadata Manager's Role in Collaborative Projects: The Rutgers University Libraries Experience." *The Electronic Library* 26 (6): 777–89. doi:10.1108/02640470810921574.
- UCLA Library. 2015. "Special Collections Digital Project Toolkit." http://www.library.ucla.edu/special-collections/programs-projects/digital-projectsspecial-collections.
- Undergraduate College of Wake Forest University. 2016. "First Year Seminars (FYS 100)." *Wake Forest University*. http://college.wfu.edu/academics/first-year-seminars.
- Vandegrift, Micah, and Stewart Varner. 2013. "Evolving in Common: Creating Mutually Supportive Relationships between Libraries and the Digital Humanities." *Journal of Library Administration* 53 (1): 67–78. doi:10.1080/01930826.2013.756699.
- Varner, Stewart. 2014a. "Project Charter." Stewart Varner: Scholarship, Libraries, Technology. May 6. https://stewartvarner.com/2014/05/project-charter/.
- 2014b. "Project Proposal Form." Stewart Varner: Scholarship, Libraries, Technology.
   May 8. https://stewartvarner.com/2014/05/project-proposal-form.
- Vinopal, Jennifer. 2012. "Project Portfolio Management for Academic Libraries: A Gentle Introduction." College & Research Libraries 73 (4): 379–89.
- Vinopal, Jennifer, and Monica McCormick. 2013. "Supporting Digital Scholarship in Research Libraries: Scalability and Sustainability." *Journal of Library Administration* 53 (1): 27– 42. doi:10.1080/01930826.2013.756689.
- Wamsley, Lori H. 2009. "Controlling Project Chaos: Project Management for Library Staff." PNLA Quarterly 73 (2): 5–27.