



Partnering with Teaching Faculty on Research Projects

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INTRODUCTION

Collaborating with faculty in other departments on campus can be one of the most rewarding and challenging types of research partnerships for the practitioner-researcher librarian. The challenges to such a partnership can take the form of different departmental and professional needs and goals and may include accounting for different academic schedules and finding areas of mutual interest. However, when those challenges are addressed, you can develop a strong, rewarding research partnership. The most obvious benefit to cross-disciplinary research is the ability to learn about and engage with disciplines beyond your own. A partnership, such as ours at the Colorado School of Mines between an instruction librarian and a teaching faculty member, gets the librarian out of the library and more actively involved in the needs and curriculum of the departments they serve on campus. Throughout the course of the partnership, you learn more about your partner's home discipline and develop a shared vocabulary of terms and concepts. Aspects of the process for developing such a partnership can be daunting to novice practitioner-researchers. In this chapter, we provide advice on finding, growing, and maintaining a research partnership. We also provide techniques and suggestions for navigating the challenges of cross-disciplinary research that we have found useful.

OUR PARTNERSHIP

The Colorado School of Mines (Mines) is Colorado's STEM-focused public university, serving roughly 6,500 undergraduate and graduate students. The Arthur Lakes Library's information literacy program includes a strong, ACRL *Framework*-based foundation in multiple first-year core courses, including Design I. Design I is the required first-year technical design course in the Engineering, Design, and Society Division (EDS) at Mines and is part of the Cornerstone Design@Mines program. Each semester, roughly 600 students, in teams of four or five, tackle a large-scale problem-based project on topics such as food deserts, urban infrastructure, upcycling, or bicycle and pedestrian safety. Our partnership consists of Brianna, the library's teaching and learning librarian, and Leslie, director of the Cornerstone Design@Mines program.

When Brianna joined Mines in fall 2016, an information literacy lesson on scholarly and authoritative sources was already in place for Design I. In preparing for the following spring semester, we discovered that we had mutual interest in making changes to the library's lesson plan. Brianna was interested in making the lesson more effective for students. Leslie was in the process of making changes to the course to provide students with more in-class time to work on their design projects.

Following these initial discussions, we evaluated the information literacy lesson and piloted a new flipped lesson that combined a module in the campus learning management system with a required design team meeting with a librarian. Development of the new lesson evolved into a research partnership examining the effectiveness of the flipped lesson for Design I.¹ Our partnership has expanded beyond our initial published paper to a better understanding of each other's work on campus as well as plans for continued integration of information literacy into the Design I course and the follow-on Design II course.

FINDING A RESEARCH PARTNERSHIP

There are dozens of hidden potential areas of mutual interest between a particular campus librarian and any member of another campus department. The trick is to uncover a few promising nuggets. Some potential areas of research collaboration can be found through the clichéd chatting at the watercooler or at campus events, parties, or functions. While seemingly straightforward sounding, it can be difficult for novice researchers to identify partners and get the conversation started. Begin by using events to become more familiar with the research being conducted on campus and with the priorities of different departments. You can attend lectures and workshops put on by departments in your liaison area if you have one. If you do not have a specific liaison area, start with events that look interesting to you. You can also look out for events put on by your campus center for teaching and learning, especially if you are interested in pursuing any educational research. For example, at Mines, the Trefny Center for Innovative Instruction hosts a variety of events to help faculty learn about educational research and curriculum innovation being done on campus. Workshops on active learning, lunchtime lectures, and other such events can be great places to learn about the issues facing faculty and to meet potential collaborators.

You do not need to approach every campus event with the explicit intent to find research collaborations. Treat them more as fact-finding missions, especially if you are new to an institution or less than confident in your networking skills. Regardless of the venue, you find yourself in, listen to your colleagues explain their research areas, the frustrations they may experience in the classroom, and their department initiatives. These insights can give you a better idea of where classroom faculty needs may intersect with your skills and priorities as a librarian. If one of these discussions sparks your interest, consider scheduling an informal chat over coffee with that colleague. As you learn more, you may need to make an effort to explain how you can contribute to a project as a full research partner. You are going beyond offering routine library services, such as literature search or material acquisition, to “contributing to the actual knowledge creation using the specialized knowledge and skills librarians possess.”² Tying your specific skills and interests as a researcher to their needs as a classroom faculty can be a great way to initiate a partnership.

Not all research partnerships will develop through a chance conversation at a campus event. You could stumble into a research partnership after working together on a campus committee or teaching an information literacy session for a course. As mentioned above, our research relationship developed from our shared priority of embedding more active learning in the Design I course. In our early conversations, we were receptive to each other and built on each other’s ideas for improvement, which then encouraged further discussions. Look for colleagues who are enthusiastic about, rather than resistant to, new ideas and collaborations. These “yes, and” people will build you up, add to your creativity, and help you to become a better researcher and partner.

Sometimes a potential topic does not materialize on its own, even if you have a strong working relationship. That does not necessarily mean that you have no common priorities. In fact, it can take just twenty to thirty minutes of focused effort to find several collaboration areas that are very interesting to both of you. We suggest utilizing a brainstorming session to help you identify any (or perhaps many!) possible areas for collaboration. This brainstorming activity can also be helpful to conduct after you have been working together for a while. We recently used this exercise to consider next steps for our research partnership following the publication of our conference paper.

The following is a basic description of a brainstorming session you can undertake with a research partner with examples of how we approached each step. First, create a list of your own priority questions, strategic initiatives, or problem areas that you think *may* be relevant to your colleague. Set a timer for six to eight minutes, if that is helpful. The idea-generation session we conducted in the summer of 2018 yielded around twenty ideas for continued collaboration, such as comparing content absorption rates between honors and non-honors students and exploring what information or skills transfer students might be lacking on the topic. Read over each team member’s list and ask clarifying questions as you go. Take your time with this step to carefully review each list. As Knapp et al explain, “Demonstrating your interest and enthusiasm is of much higher value than pretending to know everything already.”³ You will most likely find that you have questions about discipline-specific jargon, teaching methods, and strategic initiatives that need clarification, and vice versa. Highlight areas that are of mutual interest

as you go through the lists together. Of our initial twenty ideas, we found six ideas that appealed to both of us.

It is important to continually ask clarifying questions and build your shared vocabulary. Knapp et al illustrate the confusion that can come from cross-disciplinary research by examining a single term: “Model’ is probably the most ambiguous word in science. Mathematical, statistical, experimental, observational, theoretical, computational, analytical, verbal, legal, mental, graphical, geometrical, structural, and workflow models all have different meanings. Almost every field will have its own interpretation....”⁴ Finally, articulate each short-listed item in a common language that motivates everyone and briefly discuss approaches you might take to address each matter.

It is worth categorizing your possible collaboration ideas once you have had a few discussions. Some ideas will be more along the lines of practical tasks or projects to do together to work toward continuous improvement, rather than academic research. An example of a practical task was our idea that better training of our professor team may lead to better student citations. In this case, we simply added a brief training session to the agenda for the semester faculty kick-off training. Other areas may lead to a literature review by one party, who can share what they have learned with the rest of the team. A third category may be research projects to save for later, if current conditions may not be quite right to pursue these ideas. In our list of common interests, we identified the need to compare student learning in a new degree program versus those in traditional degree programs; however, we will need to wait a year until more students have signed up for the new degree. Finally, you will be left with some items in the category of possible research collaborations to pursue immediately. If there is one idea in this final category that you both are excited to pursue, then it is time to plan out your work together. If, however, you have several to consider, you will want to prioritize them. There are many tools for prioritizing, such as decision matrices, cost-benefit analysis, and listing out pros and cons.

GROWING AND MAINTAINING A RESEARCH PARTNERSHIP

While you are going through the process of starting a research project and brainstorming ideas, also focus on fostering your budding relationship. There are several considerations for your team before you start collecting data, including departmental needs, institutional constraints, personal professional goals, and the requirements of your day-to-day work. Having honest discussions with research partners about goals and constraints early in the relationship can help you to ensure you both have the same expectations for the project. When partnering across departmental lines in an academic setting, it is important for the research team to account for the goals and constraints each person will face during the project. Research projects should be mutually beneficial to all team members and their home departments without putting undue strain on individuals, both professionally and personally. According to Ingram et al, “Researchers studying academic partnerships have found that getting partners to align their goals is a critical early step and is often

not explicitly addressed or appropriately resolved prior to significant forward action.”⁵ Goal alignment is especially key when a single librarian often serves multiple academic departments. The desire to partner with course faculty on research does not always translate into an effective project when balanced against the rest of the librarian’s workload. Pre-planning and a candid discussion about goals and constraints can save your team from work overload, putting too much focus on non-priority items, and struggling to complete project tasks.

First, consider the strategic and long-term goals of each department involved. Over the past couple of years, Mines has encouraged strategic thinking and planning within the academic departments and across campus as the school prepares for its 150th anniversary in 2024. Our research team had to factor our research project into the strategic goals of our home departments, the library and Engineering, Design, and Society (EDS). In the library, increasing and improving the information literacy program is a strategic goal, so our initial collaboration to design a flipped lesson research project fit well with departmental goals. Ongoing collaboration to strengthen that lesson and student learning in EDS also fits well within the strategic plan. Thus, it was possible to devote the ongoing time and resources necessary to the project to see it succeed. Likewise, in EDS, increasing active and experiential learning was a strategic mandate backed by funding for a summer salary, which meant it would not be another item crammed into Leslie’s “spare time.” Each team member was able to prioritize the project because it aligned well with the strategic direction of our home departments.

In addition to taking advantage of department and university strategic initiatives, consider other institutional factors that could impact your project. What institutional policies will you need to comply with to accomplish the project? Policies on research involving students and procedures for institutional review boards will vary depending on the institution. Early in your development of the project plan, be sure to account for potentially time-consuming institutional policies. You may need to submit the project to a dean or the institutional review board prior to beginning. You also might need to navigate elements of the campus culture and subcultures that are unique to your institution. According to Saunders, “While each college and university has an overall culture that permeates the whole institution, different groups and departments within the institution may also have their own culture, sometimes referred to as subcultures or organizational cultures, separate from the institutional culture.”⁶ Learn about the subcultures on your campus that could positively or negatively impact your project. Teaching faculty, not typically paid over summer or winter breaks, may need to appeal or apply for funding sources. Perhaps there is special support offered for interdisciplinary research on campus. Also, the highly constrained structure of a semester at its start and end requires that interventions are planned extra early so opportunities are not missed in the noise of other curriculum improvements and scheduling preparations. It is important for partners to be careful about making commitments and to be open and honest about personal priorities, other projects, and time constraints.

Each team member’s individual professional goals will also factor in the accomplishment of your research project as well as the longer-term implications of the work. On the

librarian side of the partnership, consider status, promotion potential, and your other duties. Depending on the institution, the librarian partner may have either staff or faculty status, and within those designations, some institutions encourage—or even require—research and scholarship while others do not. For example, at Mines, librarians are academic faculty with a workload that is 80 percent professional duties, 10 percent scholarship, and 10 percent service. Our status means that we are required to complete original research, but it is a relatively small portion of our overall workload. Promotion and tenure potential can also complicate research partnerships. Some institutions have certain types of publications that are encouraged; they may also encourage or require work to be published in certain venues. In our case, we are both members of the American Society for Engineering Education, making it a logical venue for publishing our work. In preparing our paper proposal for their conference, it became a discussion of which division, Engineering Libraries or Design in Engineering Education, would be most appropriate.

Likewise, on the teaching side of the partnership, some professors are tenured or tenure-track, while others are non-tenure-track lecturers or teaching faculty. While one of the main responsibilities of tenure-track faculty is to attain professional expertise and recognition through research, in some cases research takes so much time that innovation of teaching practice is deemphasized. For teaching faculty, professional priorities are the other way around. At Mines, teaching faculty like Leslie typically have a workload of 75 percent teaching and 25 percent service, which includes curriculum improvement initiatives, committee appointments, search committees, and the like. Research is listed on performance evaluations but is given no weighting. Some chairs consider any original research in the “service” category and rate the teaching faculty accordingly, but you can see that this may not incentivize a teaching faculty to prioritize research. For promotion and tenure, teaching faculty are primarily graded on their proficiency in the classroom and curricular and instructional innovations. There is a secondary list of considerations that includes educational research. For Leslie to consider promotion in the future, any research would need to improve her performance in the classroom and contribute to her program’s instructional methods.

Build in some time to learn about the campus-specific eccentricities of promotion and tenure for the types of faculty represented in your research team. Discussing any restrictions ahead of time, and well as your anticipated timeline for promotion or tenure, with your cross-campus research partners will help you to account for them throughout the research process.

Another institutional factor that must be considered for a fruitful research partnership is how the research project will fit into your day-to-day work. Try to anticipate how time-consuming the project could become and what impact it will have on your other work. Each team member should consider the following questions individually and then discuss them early in the project with partners:

- Do you have the time available to devote to the project?
- Will other tasks or projects have to be scaled back to provide sufficient time?
- Are there times in the academic year that will be especially busy or quiet for you and your department?

- To what degree do nine-month faculty partner(s) wish to work over the summer and winter breaks?
- Are there times you anticipate being off campus or unavailable to your research partners?

Squeezing a large, time-consuming research project into an already packed schedule can make the project more difficult to complete and become a source of frustration for other team members. Accounting for summer, anticipated vacations, and busy times in the academic year will make your tentative deadlines more realistic to meet. As at many other institutions, Mines librarians wear several hats and juggle multiple projects and responsibilities. However, there are times in the academic year when the reference desk is quieter and the instruction load is light or perhaps non-existent. Using these “slow” times on assigned parts of the research project can be helpful in moving the project along at a realistic pace. Discussing the typical academic year from a librarian perspective, especially busy and slow times, will help partners from other academic departments better understand your availability and responsibilities.

Likewise, from the teaching faculty perspective, it is important to discuss honestly how much one is willing to work over those months that many faculty typically are not paid to work. Leslie learned over many summers that working around 25 to 30 percent time over summer break was ideal for her. The nine-month faculty in your research team may have a different approach to summer. Prioritization must then be done to determine what fits within that available amount of time. Additionally, sometimes there are windows for curricular improvements and innovations. For single-section classes, it may be possible to fit in interventions nearly in real time, but for the Design I course, curriculum changes are finalized one to two weeks before the semester begins so the team of around fifteen faculty has the material to begin preparing. This means any interventions, unless simply run as a single-section “pilot,” must be planned months ahead of implementation.

Finally, once all the institutional and professional goals and constraints have been discussed, do not forget that you and your research partners have personal lives. Research partnerships can be a great way to really get to know and form lasting relationships with your partners on campus. It is inevitable that life will get in the way of the perfectly conceived project plan and there is a high likelihood that deadlines will get adjusted. Embrace this inevitability and prepare the best you can for issues that may impact the project. First, be open and honest with your research partners, they will appreciate it. If you are facing stressful situations outside of work, or even just planning a much-needed family vacation, considering how it will impact your contribution to the project over the long term will help the team. Then, consider how you can best work within your personal context. You might need to have a brainstorming session in the evening or plan to avoid meetings on Friday mornings. You might also need to artificially push up timelines in anticipation of big events. This exact scenario happened to our team in drafting this chapter. We discussed one team member’s impending maternity leave well in advance, and this helped us to keep the project on task and meet deadlines.

The early project planning stage is also a good time to discuss the relative strengths of each team member and how they can best contribute to the project. There are obvious

reasons you might want to consider relative weaknesses when assigning tasks, such as punctuality, time management, or organization. A more effective approach is to consider and leverage the strengths of each team member. Focusing on positive skills and attributes, as opposed to negative, can help bolster your partnership and help you to learn more about each other. Consider utilizing a quiz, such as the Clifton StrengthsFinder, or a template, such as a Strengths, Opportunities, Aspirations, and Results (SOAR) analysis to identify individual strengths early in your partnership.⁷ Such tools, paired with a team discussion may help you to discover and leverage strengths you never knew you had.

TIPS FOR MANAGING PROJECTS WITH CROSS-CAMPUS COLLABORATORS

Finally, it is time to set up your working norms and the tools you will use to collaborate together. Deciding on and planning the working norms and tools you will use is especially important when you work in different departments and may not run into each other naturally. Start by discussing how you will work and where you will store your documents. In addition to occasional in-person work sessions, we found the Google suite of tools (Google Docs, Google Sheets, and Google Drive) provided what we needed, and each of us took care to organize the folders to be easily locatable. Once the location of your shared stored work has been determined, make sure you are both on the same page by defining specifically what you are trying to accomplish. Draft research questions. Consider several approaches to answering them and document the best ones. Talk about the right time to do the work and how you will track progress on the project. Create a list of tasks that will need to be done and assign them tentative due dates. You could select a realistic conference proposal deadline and work backward from there to develop your project plan. For example, our goal was to present our research at the 2018 American Society for Engineering Education conference, and knowing the initial proposal deadline is typically in early October, we worked backward to set reasonable deadlines for data collection and analysis. Depending on the project, a simple spreadsheet to track tasks and deadlines could be sufficient. For more involved or long-term projects, consider using a formalized project plan or Gantt chart that can be edited and adjusted as priorities shift.⁸

Keeping your project plan up to date will help you coordinate which team member is doing specific tasks by specific due dates. It will also help you find and highlight points at which you will need input from project partners, times in the year that will be difficult for each team member, and critical milestones and deadlines. The most important aspect of staying on track with any project is regular, productive communication. Discuss communication modes that work best for each member. Make your team members aware if you are struggling to get your portion of the project done or if an issue has come up that will delay you. Flexibility of interim deadlines can help your team stay on track toward your ultimate goal. Regular email communication and use of collaborative features, such as suggestion mode and comments in Google Docs, helped us to be as productive as possible with offices on opposite ends of campus and schedules that become busy at different

points in the semester. We also set artificial deadlines at least a week ahead of the official deadlines for the project, such as a draft paper due date. This approach helped save time for editing and accounted for unforeseen work tasks or constraints that could arise.

REFLECTIONS

Looking back on our partnership, we feel confident that we have succeeded in improving the information literacy lesson in Design I as well as the library's relationship with EDS faculty. Through our conversations, we continue to find efficiencies in delivering the lesson and increasing its impact on faculty, librarians, and students. We also continue conversations on possible work we can do as partners. By completing a brainstorming session and prioritizing ideas for future projects, we have both practical projects that can be easily implemented as well as further directions for our research. An ancillary benefit of our partnership is the ease with which our departments can now collaborate. When opportunities and challenges come up, the partner departments are more likely to consider each other as a solution. For example, EDS was looking for a home for some sensors and testing kits used in the Design I course. Expanding the library's tool library to include these new items became the logical solution because the department now has a greater understanding of the library's resources. We intend to continue both our research partnership and nurture the expanded relationship between our two departments. The work with Leslie and EDS has become a model for the library to expand and improve information literacy instruction with other departments and programs on campus.

As our practitioner-researcher partnership has developed over the past year, we have learned many lessons about partnering across disciplines and across campus. First, find topics of mutual interest and areas of departmental alignment that contain potential research partnerships. Projects should be mutually beneficial to all team members and their home departments. Second, be intentional about prioritizing and brainstorming research project ideas. Avoid idea fixation by considering a broad range of potential research topics. It is OK to have ideas that you postpone for another time; it will help you to develop your partnership over the long term beyond that first research project. Our partnership developed from a single flipped lesson through a faculty training session and concept reinforcement activity to consideration of the ideal bibliography composition. We also have ideas to consider researching in the future if the right conditions arise. Finally, once you have identified a project, find a workflow that works for your team. Your team may need to work around busy work schedules or busy times in the semester. No matter what workflow you choose, communication is key and makes the work enjoyable. Schedule in time for regular check-ins and be proactive about communicating with team members as issues arise.

NOTES

1. Brianna B. Buljung and Leslie Light, "Using a Flipped Lesson to Improve Information Literacy Outcomes in a First-Year Design Class," in *ASEE Annual Conference and Exposition, Conference Proceedings*, vol. 2018–June (Salt Lake City, UT: American Society for Engineering Education, 2018), <https://peer.asee.org/31193>.

2. Amalia Monroe-Gulick, Megan S. O'Brien, and Glen W. White, "Librarians as Partners: Moving from Research Supporters to Research Partners," in *Association of College and Research Libraries Conference* (Indianapolis, IN: ACRL, 2013), <http://hdl.handle.net/1808/11070>.
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4. Knapp et al., "Ten Simple Rules."
5. Eliza Lee Ingram et al., "Board 159: The Researcher/Practitioner Strategic Partnership: Linking Theory and Practice for Change in Engineering and Computer Science Education," in *2018 ASEE Annual Conference & Exposition* (Salt Lake City, UT: American Society for Engineering Education, 2018), <https://peer.asee.org/29962>.
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