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## The Library as a Lab for Student Work (chapter 3)

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## CHAPTER 3

# The Library as a Lab for Student Work

*Amy S. Jackson, Cindy Pierard, and Suzanne M. Schadt*

This section recognizes the practice of research as a social and experiential craft. The library as laboratory supports this practice through makerspaces, exhibition areas, lecture spaces, digital design studios, large-scale visualizations, and collaborative learning spaces. The idea of a lab also transcends the characteristics of a particular physical space or a set of tools to encourage an ethos of exploration and experimentation.

Neither labs nor libraries have always welcomed students as participants in their spaces. It was not until the late nineteenth century that student labs were constructed in high school and college settings. Even then, the aim was primarily focused on training students to follow specific protocols and carry out highly prescribed experiments with the idea that learning the process of scientific reasoning and discovery would naturally follow.<sup>1</sup> Similarly, academic libraries did not begin programs of bibliographic instruction until the early part of the twentieth century, with the focus of teaching students how to navigate large print-based collections as a means of uncovering knowledge.<sup>2</sup> In both settings, it was not until the late twentieth century that the idea of using these settings as spaces to teach research as an intellectual process—and not just a set of tools and techniques—began to take hold.

Library labs serve a vital role for Derek Bruff's "students as producers" frame. They are settings where students can engage with open-ended prob-

lems, make choices about how they might try to address those problems, and experience successes (along with failures) as essential components of learning and discovery. Accordingly, chapters in this section respond to Bruff's call to action in a number of ways: by addressing the value of productive failure as an element of scholarship (Morse, Temnyalova, and Gordon, chapter 2), by exploring the power of high-visibility and high-tech spaces as a canvas for student work (Evans Groth, chapter 7), by extolling the transformative role of students as lab leaders within a makerspace setting (Wong-Welch, Casabar, Ghazala, and White, chapter 5), and by encouraging library space planners and service providers to embrace ongoing risk taking and assessment as the working ingredients of a successful lab space (Wofford and Milewicz, chapter 6).

Experimentation is core to the laboratory process with recognition that not all testing will result in success. Digital humanities, which—at a basic level—uses digital technology to advance knowledge across the humanities disciplines, encourage serendipitous discovery and the testing and retesting of approaches to a particular research question. Ian Morse, Will Gordon, and Mila Temnyalova, all alumni of Lafayette College's Digital Humanities Summer Scholars program, discuss their experiences as emerging digital humanities scholars and how their encounters with productive failure shaped their individual processes and projects, as well as their overall appreciation for the role of difficult learning and setbacks in scholarly work. The power of this experience, as the students describe, was that their program was one of the few places where they had the chance to develop and work out questions of their own design. Also striking in this case is how the student scholars describe the library as “a natural home for the program” and a place where they were supported in developing and refining their research questions, exploring tools to help them investigate those questions, and sharing their successes and failures with both student peers and faculty and library mentors.

Evans Groth shifts the lab focus back to the physical space in the NCSU Spotlight chapter, sharing examples of how he and his colleagues at the Hunt Library have leveraged the characteristics of the library's physical design to offer students working production spaces as well as highly visible stages for sharing those products. Of particular interest is the inclusive approach to the library's audio studios, one that encourages participation, whether users are novices or possess extensive experience. The lab setup includes a robust suite of hardware and software, but it is also coupled with support from library staff and student employees and has developed a community of peer creators who come together for regular Music Meetups. Projects inspired by classroom assignments—designed collaboratively by classroom faculty and library staff—have now been converted into public workshops, expanding the opportunities for students to experience the power of creating and sharing

original music. The public nature of the studio spaces, which make extensive use of glass, exposes the often-private process of music creation and welcomes new students to participate in that process of creation.

Though seemingly ubiquitous in 2018, the phenomenon of makerspaces is relatively recent. Both the term *makerspace*, defined as “[a] publicly-accessible space ...to design and create,” as well as a publication devoted to the movement, *Make: magazine*, debuted around 2005.<sup>3</sup> While makerspaces exist in a variety of settings, libraries have become particularly engaged with the makerspace movement, perhaps drawn by a similarity of mission: to provide resources and technologies otherwise unavailable to a community.<sup>4</sup> Within academic settings, the library is charged with supporting all disciplines and can act as neutral ground in providing access to resources that might otherwise be available to only specific segments of the campus population. For student producers, this type of neutral space offers a powerful opportunity to engage with open-ended problems and to design strategies and solutions. Jenny Wong-Welch, Charles Joseph Casabar, Rita Ghazala, and Lindsay White of the buildIT Makerspace @ San Diego State University Library share their experience co-creating a library makerspace in which student master builders from multiple disciplines lead efforts to support learning, making, and sharing approaches to design and fabrication. This case study exemplifies how a library makerspace has forged and sustained a community of practice, wherein participants exchange information and develop knowledge based on common practices. Master Builders share how they have found authentic audiences for their work through the experience of teaching peers and creating products to address defined needs.

Designing a lab space is an exciting and challenging proposition. How can a space help to drive social interaction, offer flexible configurations, support diverse projects, and serve as a showcase for products as well as processes? Brittany Wofford and Liz Milewicz discuss the multiyear process of envisioning, planning, implementing, and editing the Ruppert Commons for Research, Technology, and Collaboration at Duke University. They share how the experience of building a library lab has led them to embrace a spirit of experimentation with a constant need to tinker and adjust spaces, staffing, services, and programs to respond to failures and to better support student researchers and research teams. This spirit has been infused into all aspects of offering this space as service. New service models prompted by the creation of the lab led to the retooling of a student intern position that now involves developing proficiency with digital technology as well as its application to different disciplinary questions. Requests to use the lab have helped to drive changes to policies and procedures, as well as encourage networking and cross-referrals with other campus lab spaces. Lab programming is designed to foster curiosity (DataFest) and to encourage open discussion of research

realities, such as how students have overcome setbacks and obstacles in the research process (Edge Research Talks).

These library labs support student researchers by providing a space where theory and practice coalesce, where students can pose open-ended questions, learn about the application of research tools and methods, and find their own pathways to discovery. Labs described here are inclusive and welcoming to novice and expert researchers and creators, offering opportunities for interaction and informal learning from disciplinary experts, librarians, or fellow students. Programs or exhibits held within lab spaces make public the work of scholarship, serving to spark curiosity and inspire.<sup>5</sup> In addition to the end product, sharing the process of the work's creation—a discussion of a computer science student's process for developing a tool to analyze the text of Supreme Court opinions, or the steps undertaken by an art student to design digital maps of her university library—provide the opportunity for others to take in that information and consider it within the framework of their own experience and ideas. In addition to sharing successes, library labs offer a safe space to share the types of failures and challenges that are frequently core to research and creation. These labs also call us to embrace a reflective practice, considering how libraries might continually reinvent our services and spaces in support of authentic learning.

## Notes

1. National Research Council, *America's Lab Report* (Washington, DC: National Academies Press, 2006), 13, <https://doi.org/10.17226/11311>.
2. Susan Ariew, "How We Got Here: A Historical Look at the Academic Teaching Library and the Role of the Teaching Librarian," *Communications in Information Literacy* 8, no. 2 (2014): 212–13.
3. Gui Cavalcanti, "Is It a Hackerspace, Makerspace, TechShop, or FabLab?" *Make:* magazine, May 22, 2013, <https://makezine.com/2013/05/22/the-difference-between-hackerspaces-makerspaces-techshops-and-fablabs/>.
4. John Burke, "Making Sense: Can Makerspaces Work in Academic Libraries?" (presentation, Association of College and Research Libraries Conference, Portland, OR, March 25–28, 2015), <http://www.ala.org/acrl/sites/ala.org/acrl/files/content/conferences/confsandpreconfs/2015/Burke.pdf>.
5. Siu Hong Yu, "Just Curious: How Can Academic Libraries Incite Curiosity to Promote Science Literacy?" *Partnership: The Canadian Journal of Library and Information Practice and Research* 12, no. 1 (2017): 4–5.

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