

## **DesignOps in an academic library: Reducing barriers, improving efficiency, and scaling impact of design and research**

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Magnifying design value and scaling impact are challenging for small user experience and assessment teams at academic libraries. The University of Arizona's User Experience and Assessment unit is leading three Design Operations initiatives aiming to address these challenges: a participant pool that reduces barriers for recruiting research participants; The UX Cookbook that builds expertise and efficiency; and a research repository that shares findings broadly with the organization. Together these initiatives create better workflows for improving the scale and impact of design and research.

Keywords: DesignOps; user experience; assessment; research recruitment; how-to guides; research repositories; ResearchOps

### **Introduction**

The University of Arizona (UArizona) Libraries has a staff of 190 supporting a campus of 46,000 students and 3,100 faculty (University of Arizona, 2021a). Housed centrally within library administration is User Experience and Assessment (UXA), established in 2019, which includes a User Experience (UX) strategist, UX designer, content strategist, and assessment and analytics librarian. The UXA staff consists of this 4 FTE, plus student and intern support, and is responsible for cultivating a library culture of inquiry, empathy, and data-informed decision-making. We consult with, train, and empower library employees and campus partners on UX and assessment methods. We coordinate implementation of the library's strategic map and help tell the story of the impact of the library on student success, researcher productivity, and community engagement.

How to scale work and broaden impact has been a focus since UXA's inception. It's not feasible for the small staff to complete all research, design, and content work for the Libraries, so we have prioritized our efforts towards training, consulting, and providing

resources. A distributed model of UX and assessment work, where staff organization-wide are empowered to do the work locally, is more sustainable.

In this article, we will outline three projects that have moved us towards a more scalable and sustainable approach to UX and assessment work following a DesignOps (Design Operations) strategy, addressing some of the biggest barriers to this type of work for our employees. We will share our work on a participant pool for recruitment, The UX Cookbook for guiding staff on methods, and a research repository for storing and sharing research insights.

## **Literature review**

Introducing DesignOps strategies to improve efficiency and impact of library user research and assessment work is a new approach. DesignOps, however, is not a new concept in corporate settings. Battles, Black, Malouf, Whitehead, and Bernstein edited the *DesignOps Handbook* in 2019 for UX design teams to understand and introduce the model in their workplaces. The handbook focuses on amplifying the value of locally designed products, services, and tools and does not apply DesignOps to other core workings of user experience and assessment like research recruitment, self-paced learning, and archiving findings.

Prominent UX organizations like the Nielsen Norman Group and Rosenfeld Media offer up DesignOps trainings, and again these are geared toward design teams in industry settings rather than libraries (Kaplan, 2019; Rosenfeld Media).

While the use of DesignOps in academic libraries is not present in the literature, the implementation of scaling and sustaining—the goals of DesignOps—user experience and assessment findings are prevalent. Over the years, UX and assessment units have introduced methods to scale and sustain their work beyond their immediate teams. Libraries often evaluate the culture of assessment and user experience at their own institutions and note the

dissemination of findings to library staff is an important piece of further embedding into the organization. Zaugg (2020) describes the dissemination plan of assessment resulting in producing regular status reports for an internal library audience. A study by Young et al. (2020) researched the levels of UX maturity in libraries. They emphasized the importance of moving beyond one-time user research approaches to reach higher levels of efficiency. They found much of the UX work at libraries is done by UX individuals and teams and is still considered a new practice within libraries. Many user experience and assessment departments maintain public-facing websites to get findings accessible beyond their departments. The Duke University Libraries publishes findings from projects as blog posts, for example “Where do patrons get lost? A study of library navigation” pulls findings on library navigation from a larger biennial survey and includes information on some survey elements like the response rate, relevant insights, and outcomes. The post does not include raw data, tagging features, or presentation for an internal library audience.

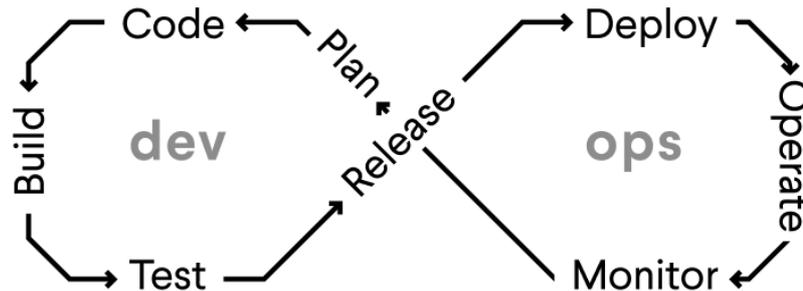
### **DesignOps: Design and Research at Scale**

The participant pool, the research repository, and The UX Cookbook are elements of UXA’s recent DesignOps efforts. DesignOps creates a framework that aims to improve efficiency in our design and research workflows while increasing their impact. A DesignOps framework breaks down into "design" and "ops" (short for operations). These two components support each other and ensure the quality, consistency, and scalability of design deliverables.

DesignOps was inspired by the concept of DevOps in software development. As in DesignOps, the name DevOps hints at combining “development” and “operations” into one process. The DevOps movement advocates for optimizing the collaboration workflow in development and operations, and aims to introduce a change to both collaboration workflows and organizational culture (Colomo-Palacios & Sánchez-Gordón, 2018). DevOps stands out

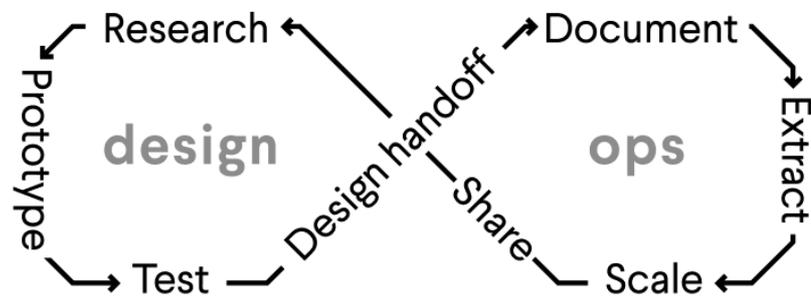
from traditional agile and lean software development methodologies by implementing automation to development, delivery, and maintenance workflows (Ebert et al., 2016).

Figure 1. Visual representation of a DevOps workflow.



A common DevOps workflow is represented in Figure 1 and consists of eight steps: plan → code → build → test → release → deploy → operate → monitor. Then the workflow begins again with plan, forming a loop. The workflow is also divided into two phases: Dev phase, that includes plan, code, build, test; and Ops phase, that includes release, deploy, operate, and monitor. Inspired by the DevOps movement, we visualized the DesignOps framework at our organization, illustrated in Figure 2.

Figure 2. Visual representation of the DesignOps workflow at the Libraries.



After the UX designer hands off the design to the development team or content managers, the outcome of the design is then implemented, after which the DesignOps process moves into its "ops" part. We properly document tools, methods, artifacts, and research data, then run assessments to ensure that the outcome meets the goal. The final step to close the DesignOps loop is sharing the project documentation within the organization, with a goal of raising awareness and developing a culture of collaboration.

## **Materials & Methods**

### ***The Participant Pool***

#### *Defining the problem*

Recruiting participants for library studies is a persistent challenge, especially for small teams

with budget and time constraints. Due to the challenges of recruiting, user experience and assessment teams often get caught in this phase for longer than anticipated. They are also left with lower recruitment numbers resulting in not enough data to draw meaningful conclusions.

Recruitment is core to conducting quality user research and assessment, and it's a difficult process. Libraries may not have straightforward and ready access to a wide array of students like other campus units. Libraries often don't have regular access to the same recruitment channels, like department or class lists. And requesting access to class or department lists is a cumbersome process filled with approval steps that might take months to achieve.

To overcome this lack of access, library employees use a variety of convenience sampling methods to find participants. Some start with their own immediate users like student employees or try to catch passersby in the library lobby. Others might reach out to faculty within their networks—a librarian will write a survey and send it to a familiar faculty member asking them to forward the survey invitation to their students. While working with the “usual suspects” is a good start, other voices like non-library users are often left out in this process.

Even when a pool of potential research participants is representative, budgeting enough time to screen, schedule, and coordinate with participants can be a hurdle. A study from the Nielsen Norman Group found research recruiters spend an average of 1.15 hours coordinating each participant (Sova & Nielsen, 2003). And many times, students sign up for a usability test or interview, but the timing and location are inconvenient. We also know compensation—like gift cards or cash—motivate students to join, but often libraries are not able to dedicate such financial resources on an ongoing basis.

Even before the Libraries closed its doors due to COVID-19, UXA was searching for solutions to reduce recruitment barriers and speed up the research process. Like other small

library teams, we mostly depended on in-person recruitment for user research. Each week, we hosted Tiny Café and talk-back boards in the library lobby for quick research using intercept recruitment (Blakiston, 2021; Curl, 2020). We found Tiny Café, a pop-up station with drinks and snacks, is an effective method when the research activity can be completed in under 10 minutes. Other library departments typically solicit feedback at a point of service. For example, distributing short surveys on how students use laptops at the information walk-up desk where technology is checked out.

While intercept recruitment works well for some research, it doesn't work for remote or unmoderated research, or research that requires more targeted recruitment. Especially during the remote environment during COVID-19, UXA was determined to reduce the barriers to recruitment.

### *Designing the solution*

UXA sought a solution to make recruitment easier and more regular for researchers, and decided to create a participant pool—a database of people willing to participate in occasional research. Participant pools are common in market research for quick recruitment. Companies build databases of people willing to share their opinions about new products and services. Oftentimes consumers are paid for participating. UXA sought to replicate this model knowing the pool could scale user research and assessment work by minimizing steps in the recruitment phase.

Before creating the participant pool, we wanted to better understand the process for doing so and the needs of those recruiting for research. We conducted an environmental scan and then met with library professionals who use databases for recruitment: Harini Kannan from New York University Libraries, Amy Deschenes from Harvard Library, and Josh Boyer

from North Carolina State University Libraries. During these exploratory, conversational interviews, we asked:

- What was your process of creating your recruitment databases?
- How long did it take?
- Who did you collaborate with on campus? (e.g. research office, central marketing)
- What systems support the pool on the backend? Do you integrate with existing databases of information?
- How do people opt-in and opt-out, and how often? Do you have a way to integrate scheduling tool for meeting with participants (e.g. Calendly)?
- May you show us the backend of the pool?
- How do you get the word out for signing participants up?

We learned recruitment databases were housed in a variety of ways. Libraries chose different tools like Qualtrics, Google Forms, or Mailchimp to manage and communicate with participants in the pools. Each tool offered an effective opt-out option for people, an important element for our consideration. Each institution saw increased participation in user research after creating their pools and found the reach extended beyond library users.

Institutions collaborated with library marketing teams and campus units to recruit members to the pool. Recruitment mainly happened through orientation events, student organizations, and specific academic programs. One institution even partnered with a central IT to generate a list of potential participants then invited a representative sample of undergraduate and graduate students to sign up for the pool.

### *Building the participant pool*

We chose Mailchimp as the tool for our participant pool. Mailchimp was a tool we were familiar with using and it provided a key feature. Mailchimp allows for an opt-out

mechanism as people can remove themselves by clicking “unsubscribe” at the bottom of any email. Creating effective and true modes of opting out are important for ethical research recruitment. And allowing participants to manage their own subscription removed the need to refresh the pool manually at regular intervals.

People sign up for the pool using Google Forms, and an integration with Zapier allows them to be automatically added to the email list hosted within Mailchimp. They can volunteer basic demographic information about themselves: affiliation status, degree program, expected graduation date, employment status, and professional role. To build a diverse group of voices, we decided to open the participant pool to everyone, including community members outside the university.

### *Using the participant pool*

Sign-up is open throughout the year, and UX@UA conducts two larger recruiting phases the beginning of the fall and spring semesters. We recruit people to join the pool through departmental email listservs, reaching out to advisors in the department and asking them to share the invitation. We also promote signup through LibGuides and at in-person events in the library lobby, including by posting a QR code by our regular talk-back boards. More recruitment to the pool continues throughout the year as well through networking and informal channels. As in-person user research and assessment resumes, UX@UA is exploring more recruitment opportunities like signing up students at orientation events and encouraging subject liaisons to promote signup through academic departments.

The University of Arizona has a robust UX learning community called UX@UA, which has been an additional source for both recruitment and use. We promote the participant pool on the UX@UA website, social media, and at monthly meetups (UX@UA, 2021). The UX@UA leadership team had also long expressed interest in having such a pool to reduce

barriers to recruitment for people across campus. So while library employees are the main users of the participant pool, we recognized the value this could provide to campus units looking to better understand student experiences across the university. Once UXA operationalized the participant pool, we offered it as a service to campus units looking to recruit for lightweight user research.

The pool was advertised as an available library-run tool with our network of user researchers and assessment staff. With interest growing from campus units like UArizona's Information Technology department, UXA finalized a set of guiding principles. If interested in recruiting via the pool, the study being recruited for must be:

- In service of improving experiences of people using University of Arizona services or products.
- For program evaluation exempt from IRB, not rigorous studies intended to contribute to generalizable knowledge.
- The pool cannot be used for a commercial or profit-seeking product or endeavor.
- If researchers ask for more than 30 minutes of participants' time, they must offer incentives like gift cards, food/drink, or swag.

### *Making an impact*

The participant pool has over 320 subscribers and continues to grow. As of October 2021, the pool included:

- 232 undergraduate students
- 130 student employees, graduate assistants, and interns
- 38 university staff
- 38 graduate students
- 10 faculty

- 5 instructors
- 58 members of the community

Since March 2020, UXA has sent out more than 40 opportunities through the participant pool. Messages included invites to short surveys, first-click testing, user interviews, usability testing, impression testing, and one focus group. Students and community members have provided feedback on their library experiences during COVID-19, preferred research incentives, and online library tutorials to name a few.

The open and click rates of email invites have improved throughout the past year in the participant pool. For the “Help us pick the best thank-you item” survey invitation, 162 people opened the invitation email with 76 people clicking on the call-to-action button for a 26% click rate. Summer is a notoriously difficult time to find students for research studies, but our participant pool has helped us maintain good response rates throughout the summer. Our summer 2021 intern, Jung Mee Park, successfully recruited ten students for moderated usability sessions through Zoom.

We conduct ongoing data analysis on the pool. Yashvardhan Vats, a UX student assistant, spearheaded the analytics of the participant pool allowing us to analyze what makes an invitation successful. We found invites leading with verbs like “vote” or “help us choose” show the highest click rates. We suspect these click rates are high because the verb signals familiar and direct call-to-actions requiring a low amount of effort.

The participant pool has helped reduce barriers to recruitment, especially during the pandemic when all user research is remote. Various library departments have found the participant pool useful including Research & Learning and the Access and Information Services departments. UXA partnered with Access and Information Services (AIS) to survey students on their text message preferences for library notifications. AIS is considering a program to send out text messages for pick up and overdue notices. 35 students responded to

the survey—about 12% of the participant pool—and the results informed AIS’s decision to keep pursuing the workability of including a text notification feature.

## ***The UX Cookbook***

### *Defining the problem*

We work with campus and library colleagues who practice design thinking in their everyday work and are open to experimenting with UX methods such as user interviews, usability testing, and prototyping. UXA supports their work by providing training and consultation on a project basis, or through our regularly scheduled UX consultation hours.

However, as a small team based at the library, UXA’s limited capacity means step-by-step guidance and one-on-one meetings are not always available. Instead, we often find related articles and tutorials from external sources to share with our colleagues. At the same time, we often realize the resources are not tailored for a higher-ed environment. In some cases, we had worked on similar projects in the past but our own design artifacts and documentation were not easily available to share or replicate as they could have been.

In 2020, when we all shifted to remote work due to COVID-19, synchronous collaboration was made even more challenging because of the distributed workplace. As teams that used to provide physical service on campus found alternative online options, UXA started to receive an increasing amount of help requests on recurring topics. As a result, we would often jump between Zoom meetings and “reinvent the wheel” by sharing resources multiple times.

With the introduction of DesignOps methodology, UXA started reimagining our consultation workflow with a goal of building a more sustainable model in a remote setup, including the curation of self-guided tutorials on popular UX design and research methods.

Another important consideration for us was incorporating our own past deliverables as examples as these were more relevant to the higher-ed audience.

### *Designing the solution*

We designed The UX Cookbook (<https://theuxcookbook.com>), a collection of articles that aims to help anyone get started with UX research and design, no matter their prior experience. With the goal of increasing the efficiency of collaboration through recycling and reusing deliverables from the past, The UX Cookbook was envisioned to be part of the “Ops” component in DesignOps.

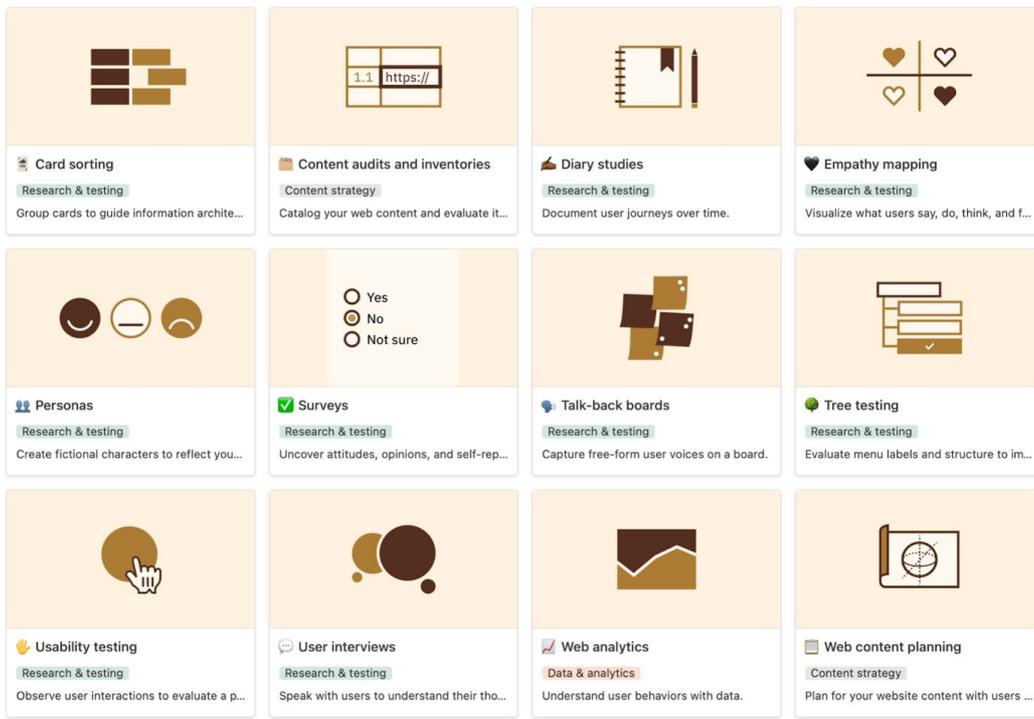
We chose the name to hint the UX process can be as fun as cooking. Accordingly, the tutorials inside The UX Cookbook are named “recipes” to model the step-by-step instructions used in the kitchen. Figure 3 shows how the recipes are listed on the website.

Figure 3. A list of recipes in The UX Cookbook.

## Recipes

All recipes ▾

🔍 Search



### *Anatomy of the recipes*

Instead of creating UX tutorials like the various ones people find on websites such as Nielsen Norman Group or Usability.gov, we use a consistent recipe template and assemble tutorials that are detailed, easy to follow, and playful at the same time. All Cookbook recipes follow the same pattern that starts by giving the reader an overview, then helps them get prepared, implement, and finally present their work or results.

Below are typical sections found in The UX Cookbook's recipes:

- Nutrition profile: A short description of the method.
- Cooking time: Estimated time of completing the method. If the time is dependent on the project, we provide an estimated range.
- Perfect for: Projects or settings that are a good fit for the method.

- Ingredients: Tools and software needed, and where to obtain them.
- Prep work: Preparation before implementing the method.
- Demystified: Answers to frequently asked questions whenever they fit in a callout.
- Directions: Step-by-step instructions for using the UX method in a project.
- Plating: Guidance on presenting research findings or design artifacts.
- Gallery: A showcase of finished work.

Unlike other UX guide articles, most of our recipes include real-life examples from projects in libraries and other higher education settings, making them more relevant to the audience. We often include photos of us the team using the methods in real life, and/or templates we prepared for past projects.

*Notion: Content management system + web hosting*

We wanted The UX Cookbook's content to live on a platform that's accessible by anyone with an internet connection but requires minimal setup and allows those who are interested in contributing to get started quickly. The platform also needs to handle content management so that we can plan for and draft recipes before publishing them.

Notion, a tool our team had already been using, became our platform of choice. At its core, Notion is a document editing tool similar to Google Docs that supports multi-user collaboration, so that contributors can either work on separate documents or edit and comment in the same one. What makes the tool unique is that any document created with it integrates flexible inline components, such as lists, tables, boards, calendars, and embedded widgets. This allows us to easily present content in a variety of formats and layouts other than plain text, without the need for developing these elements on a website from scratch. To ensure consistency across recipes, we created a recipe template with the tool's templating

feature and included all the aforementioned sections, and template buttons for pre-populating section headings.

Any document created with Notion can be publicly shared with a link. We created recipe pages and a landing page and made them available on the internet, so that anyone can access the content without logging in. By default, Notion generates URLs consisting of a string of random characters that are difficult to remember. As a workaround, we utilized an open-source toolkit called Fruition and added a custom domain for The UX Cookbook's landing page and all recipe pages. This makes all our Notion documents appear as a subpage of the domain.

Another helpful feature in Notion is customizing access on a per-document basis, which lets us present content in different ways to users who are logged in versus those who are not. For example, anyone who lands on The UX Cookbook's homepage will see an introduction, a list of recipes, and a footer. But contributors who are logged into this Notion workspace can in fact see more on the same page because of their different access. In addition to the recipes that are still in the works, we also added an internal Kanban board for tracking the progress of each recipe.

### *Making an impact*

The UX Cookbook launched in November 2020. As of October 2021, The UX Cookbook includes 16 recipes in 5 categories: Research & testing, Prototyping & visual design, Content strategy, and Data & analytics. The website's analytics shows that it has an average of 39 unique visitors per day in October 2021, with a majority of its traffic coming from the United States and Canada.

The UX Cookbook started off as an internal project, with its content intended to be shared with our colleagues at the Libraries for library-related projects. There have been

multiple projects that utilized recipes from The UX Cookbook since its launch. An example is the Health Sciences Library's Website Transition project, during which the project team conducted user interviews with faculty members to understand their use of the library's website. Some project team members had no prior experience of facilitating a user interview, so they were provided with the User Interviews recipe from The UX Cookbook as a how-to guide. Maribeth Slebodnik, librarian at the Health Sciences Library, shared her feedback as follows:

I used the User Interviews recipe to prepare to interview faculty about our website. It had exactly what I needed to feel comfortable planning the process and then doing it. The level of detail and example is just right! As a cook, I love the Cookbook format, and that made it even easier to relax, read and learn ... We got great information that has really impacted our website redesign. (M. Slebodnik, personal communication, July 26, 2021.)

After making our recipes publicly available and publicizing some of them on social media and at UX@UA events, they also gained traction from those outside of the library, notably our partners in other University of Arizona colleges and departments. For example, Julie Christen, graduate student at College of Social & Behavioral Sciences of University of Arizona, was the instructor of the course ENGL430: User Experience Research class in Spring 2021. She used The UX Cookbook as a free-to-use educational resource for her students. At the end of the class, she shared her students' experience:

My class was a 400-level user experience research methods course taught entirely online (on Zoom) ... The UX Cookbook was not only a great introductory resource for overviewing several methods at once, but it provided students with clear, step-by-step frameworks for getting started with using specific methods that were new to them. For example, one student drew from the Diary Studies recipe card for her short study on the experience and effects of Zoom fatigue on students during the pandemic, and that project generated a lot of really insightful and useful data as a result of her careful planning (J. Christen, personal communication, July 22, 2021.)

## **The Research Repository**

### *Defining the problem*

Libraries have a rich history of conducting research to inform decision making, with UX research being a foundational component of this work (Young et al., 2020). Research can be generative or evaluative and can result in either behavioral or attitudinal data (Conrick 2020), and libraries have used methods such as surveys, focus groups, user interviews, observations, and usability testing (Young et al., 2020). Libraries use this data to inform a breadth of decisions impacting the library experience, including website content and navigation, library hours, new services, and space renovation. Libraries with mature UX practices have accumulated dozens if not hundreds of reports, slide decks, and spreadsheets containing findings from research. This rich data is useful initially for the project team as well as for future associated research seeking to understand or tackle similar issues.

Unfortunately, research findings are often stored inconsistently, making them hard to locate or interpret later on. At our library, research is conducted across the organization, with departments having various norms and practices when it comes to documentation and file sharing. Documentation is stored in numerous places including a mix of shared file spaces (e.g. Box, Google Drive, SharePoint) and local workspaces. The formats of findings also vary, with some being in text documents, some in spreadsheets, and some in more feature-rich tools like Airtable and Notion. Some findings were never stored in a digital format and exist only in the researcher's minds or on sticky notes somewhere.

Because of this, libraries often have data that could inform decisions but employees don't know it exists or how to access it. This is problematic as it can lead to employees making decisions based on assumptions, replicating a past study, or duplicating past effort.

## *Designing the solution*

Fortunately, there is an established solution to this problem: a research repository. Research repositories are shared databases of research insights, and are increasingly common in large organizations with big research programs. Kate Kaplan and Rachel Krause highlight the importance of research repositories in the Nielsen Norman Group (2021) course *DesignOps: Scaling UX Design and User Research*. There is also writing community of people doing ResearchOps work to scale their design research practices (ResearchOps Community, 2021).

Research repositories can be housed in a variety of digital tools, depending on scale, scope, audience, and goals of the team. Simple repositories can be created in shared file management systems such as Google Drive and Dropbox, or web-based content platforms like blogs. At UArizona, we started with a set of folders in Box in the early 2010s, attempting to provide central access to raw files. While useful in facilitating access if someone knew what they were looking for, it failed to synthesize findings in any consistent way and was mostly invisible to our colleagues outside of the team.

More advanced repositories that include filtering, metadata, and associated files will benefit from database structures provided in tools such as Airtable and Notion. In 2017, the library's UX team started using Airtable to input research data, providing a more structured way to store, sort, and filter findings. Christina Kalel, UX graduate assistant at the time, spearheaded the effort and was a big advocate for using this more structured approach. While this provided great value internally to the team, again it failed to synthesize findings in a way that facilitated discovery, nor consider the broader audience which was mostly unfamiliar with Airtable and would need to create individual accounts in order to get access.

Last year, UXA recognized the limitations of our existing processes, and embarked on a more intentional project to build our own research repository. The goals we set out to achieve were to:

- Store and archive research findings in one place.
- Make research findings accessible and discoverable to library employees.
- Empower library employees to use project findings from the research repository to make data-informed decisions.

### *Scoping our Research Repository*

The term “research” is broad and often ambiguous, especially within the context of libraries. Library employees do lightweight research and assessment regularly, primarily to evaluate and make local improvements to services, spaces, and websites. Library faculty also do intensive, in-depth research that goes through Institutional Review Board (IRB) approval that aims to generalize findings to a broader population. Since UArizona librarians are faculty, they regularly conduct this type of formal research to produce new knowledge and scholarship. Library employees across the organization also collect data through systems and automated tools, like our Alma/Primo library management system, web analytics (e.g. Google Analytics, Siteimprove), and occupancy counters (e.g. SensSource).

UXA recognized the need to scope our research repository carefully. We wanted it to be useful to the organization broadly, practical in what it aimed to include, and sustainable given our small team to oversee its implementation and ongoing maintenance. To this end, we defined the scope as user-focused research conducted by the library with the goal of improving service quality. An important criterion was that included projects must result in data that are of interest beyond a single department. This would include projects that study user behavior, perceptions, and attitudes, and people-generated data (e.g. interviews, surveys). We determined that systems-generated data (e.g. circulation records) and ongoing data collection efforts (e.g. head counts) would be outside the scope of the research repository.

## *Building the Research Repository*

We decided to use Notion, the same tool we used for The UX Cookbook, since it allows us to create filterable, sortable tables of information. It also allows for public links so our repository could be available to the world, and the ability to design custom landing pages similar to a standalone website. There was also a great article and template for using Notion to build a research repository which gave us a helpful starting point (Escher, 2020).

Adapting the template, we began to input recent research projects. We made a page for each research project containing a summary of findings. We made the repository itself available through a public link, so that anyone could access it, but any personalized or identifiable information would remain behind a login (e.g. Box). To adjust our template and refine our approach, it was helpful to add several research projects of different sizes and complexities. For example, we added results from a five-minute quantitative survey while also adding results from a semester-long internship project around library study spaces that had multiple stages and contained a variety of research methods.

After some iteration, we ultimately established ten metadata fields for each research project. Free text fields include title of project, researcher(s), and keywords. Structured fields, which allow filtering and manipulation of the data, include:

- Start date (date selector)
- Status (i.e. planning, execution, analysis, reporting, completed)
- Repository status (i.e. in progress, ready to review, final)
- Related department(s)
- Tags (for type of research, e.g. user interviews, usability testing)
- Products (e.g. website, Weaver Library, Primo)
- User type (e.g. faculty, undergraduate students, library employees)

We also created a template for each project summary, which can be adapted as appropriate. We wanted the summaries to be simple and written in plain language, providing a brief overview of the project goals and findings. The template includes:

- What we did and why
- How we did it
- What we found
- What we did next
- Now what?

Each project also has a sidebar of links for detailed documentation and raw data (e.g. Box) as well as related research that might also exist in the repository.

### *Making an impact*

As of October 2021, the research repository includes 43 entries. UXA continues to add findings from past studies that are still relevant and a useful reference. As research is being conducted, the team is proactively adding entries. For example, researchers are entering findings from ongoing efforts such as the talk-back board, and are figuring out ways to incorporate this into their workflows.

The repository has already proved useful for several library projects. For example, our library is embarking on a design refresh for our family of library websites. Past research around information architecture testing, top tasks, and personas are proving to be especially useful reference points. In summer 2021, intern Jung Mee Park focused on Primo usability testing and was able to review two past usability studies to build upon previous work and get inspiration. She said:

Reviewing the past Primo studies helped me figure out how to present my findings. It gave me ideas on what sort of graphs and tables would be helpful information.

The repository has also been helpful for students and faculty on campus. For example, an architecture student working on his senior capstone project reached out to UXA because he's focusing on library study spaces. We shared two past research projects with him: cognitive mapping and furniture assessment study. At the campus level, there has been interest in communication habits of students, particularly related to texting. Having recently conducted a survey on text message notification preferences, we were able to share our insights. The Office of Assessment and Research included our study in their campus report as an additional resource. In both cases, we were able to just share a public link so they could access the summary of findings to inform their work.

## **Discussion**

All three of these efforts are in early stages, and we would like to build on their success to continue to scale the impact of UX and assessment work at the Libraries. We will continue to grow the participant pool to include a larger set of potential participants and broader representation of our audience, especially that of faculty and instructors since the majority of people in the pool right now are students. We would also like to expand and refine the participant pool as a service, partnering with other units to reduce barriers to recruitment campus-wide.

We have a backlog of recipes we'd like to write for The UX Cookbook to expand its breadth and use. As of October 2021, we have sixteen published recipes, five recipes in progress, and twenty-three recipes identified but yet to be started. We would like expand our authorship, inviting others from the campus UX@UA community to partner with us on writing or updating recipes. In August 2021, we launched an interactive tool to recommend

UX recipes based on research goals or stage in a project, in the style of “Choose your own adventure.” As we continue to build upon this tool, we hope this will address the often-asked question: what method should I choose?

With the research repository up and running, our priority is now figuring out efficient and sustainable workflows. We would benefit from a content strategy that includes processes for keeping content up to date, clarity around roles and responsibilities, and best practices for working with researchers across the library to input their data. In addition to user research findings, we are looking to expand the scope to include findings from campus assessment studies. Campus units frequently conduct assessments on topics like student career destinations or residence life that are of interest and impact to library services. It is important to share these findings with library stakeholders at scale through a tool all staff can access. We’re also working on how best to communicate to staff when projects are added that might be useful for their work.

There are further DesignOps initiatives we’d like to expand upon or pursue for the first time. UX@UA is a community of practice that improves collaboration across campus to better operationalize UX and assessment work, and its content-rich website coupled with an emerging mentorship program have the potential to expand UX expertise across the Libraries and campus. UX@UA began a Medium publication, uxEd, that shares design stories from the University of Arizona (Medium, 2021). While still getting off the ground, we’re hoping this can further spread knowledge and design expertise within higher education.

Another key opportunity for scaling design work is component libraries, which aim to improve visual consistency and reduce effort across an organization. Design systems, a concept that extends upon pattern or component libraries, are a way to better scale visual design assets across a variety of digital channels through components, patterns, style, and strategy (Fessenden, 2021). The team’s UX designer has created several design pattern

libraries for the Libraries' web projects, including ones for branding and user interface elements, based on the University of Arizona's brand guide (University of Arizona, 2021). We are now working towards a design system for our digital products as part of a website refresh project, with the goal set to better align with a campus-level design system effort.

As we hire our vacant content strategist position in 2021, we also hope to continue to build more sustainable "ContentOps," a close friend of DesignOps and Research Ops. ContentOps includes initiatives such as content style guides, content workflows, and ongoing training programs for content managers (GatherContent, 2021). While we have some of this in place now, our focus on scalability and impact will help take us to the next level.

DesignOps is an ongoing effort and will continue as our priority to do UX and assessment work at scale. The benefits of adopting DesignOps should be considered at other academic libraries of all sizes to magnify user research and assessment activities. Over time, these initiatives and others will lead to greater impact and our ultimate goal: better experiences for students, faculty, and staff.

### **Declaration of interest statement**

No potential competing interest was reported by the authors.

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