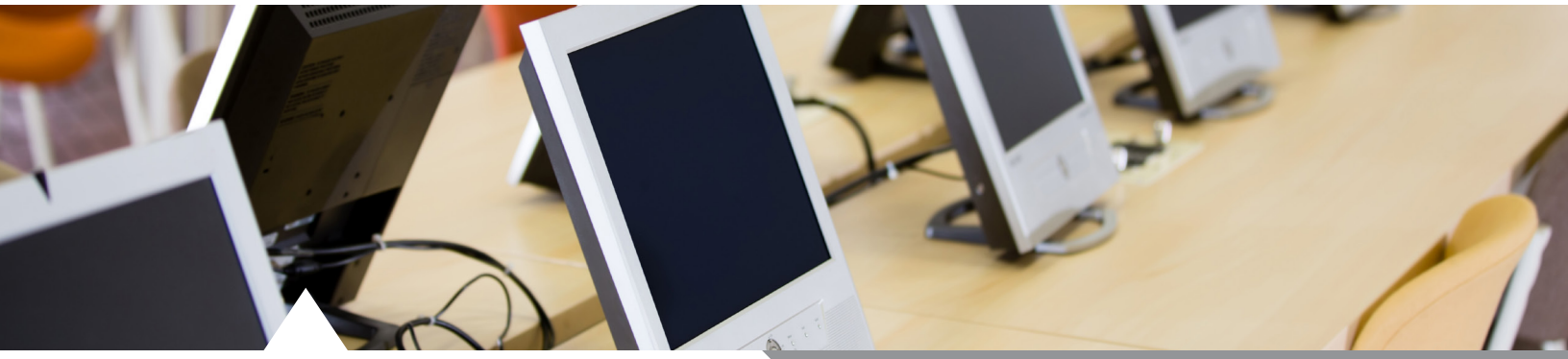
» "I have always imagined that Paradise will be a kind of library."

–JORGE LUIS BORGES

Strategic Library™



Issue 39 // May 15, 2017

Weeding Success: More than Emptying the Stacks

BY PAT WAGNER

For some book-loving librarians and associates, weeding materials from a circulating library is only about clearing shelves to buy new books: an endeavor with no more impact on the collection than the effects of a brisk spring housecleaning with dust cloths and a vacuum cleaner.

For others, including many library customers, a weeding initiative is an organized attack on a sacred trust: the sanctity of the printed word. Removing any book from the collection is a betrayal, regardless of the condition of the book, the quality of the writing, or, in the case of nonfiction, the relevance and veracity of the information.

A third position is that weeding is a key component of collection development as a professional principle. Books are evaluated by means of objective criteria and the informed judgment of staff members, thus aligning the library's resources with the strategic plan.

Most library managers and directors I work with on weeding initiatives have a similar strategic take on the topic of cleaning or purging a collection. I think of this approach as the institutional model: standards that we believe are best for the library from the professional librarian's point of view in terms of collection development and the use of space and resources, including budget and staff time.

In addition, I'd like to propose a fourth point of view that focuses on the library user: If a weeding project is successful, how does it benefit the library customer? Sometimes degreed professionals are so intent on doing things the Right Way according to their graduate school canon that they forget the viewpoint of the civilian.

Being able to see your collection through the fresh eyes of a library customer versus a seasoned library professional or associate is not as easy as it might seem at first. The problem is an issue called *habituation*. You are immersed in the library's material collection and physical environment for a couple of thousand hours each year. Your average library customer visits once a week or less, for perhaps an hour at a time.

You are accustomed to your collection as it is. You know its eccentricities. The map of its territory is familiar, so you know its areas of depth versus breadth. Problems can disappear from your awareness because you have figured out the work-arounds years ago. You know, for example, that books on writing can hide in several classifications, so you might assume that a persistent browser can find a suitable book, if they are willing to visit a half-dozen locations and ignore books that are no longer considered the best resources for would-be novelists or journalists.

When you start to plan for a big weeding project by thinking first about the library customer-that is, establishing increased library user satisfaction as the benchmark for weeding success-this user-centric view will shape priorities and goals as well as how the weeding is conducted.

CREATE A MORE VISUALLY APPEALING COLLECTION

Retail stores know that the art of merchandising–how goods are displayed–can change how well they sell. What can be frustrating for some members of the library community is that the average library users who have come to browse are going to be encouraged to read and check out more books for what some consider a superficial reason: the physical appearance of the stacks.

(Yes, there is a class of library users including scholars, historians, genealogists, researchers, and the lovers of classic literature who want to see old books on display. But this cohort of booklovers is better served by the archival function of academic and special collections. Here, I am addressing the need to market to the typical users of a circulating public library with open stacks.)

An engaging collection is in good physical condition, and there is room to display books, not just pack them in like sardines. Library staff have told me over the years how it is common for library customers to approach them after a "Big Weed" and compliment the library on the new, expanded collection–before even one new book has been shelved–and despite the fact that hundreds of books have been removed from view. While staff members are mourning the loss of favorite classic texts, the library customer sees a collection that is physically easier to browse.

Some people call this the "de-clutter" effect. (It is not unlike when a flattering haircut causes a friend to ask if you have lost weight.)

So high on your weeding priorities list should not just be about tweaking content, but freeing up the shelf space to improve navigation as well as ensuring that the customer is not discouraged by the sight of disintegrating tomes. I have had the experience, more than once, of choosing a book from the shelves of a large urban library, where the strategy was to keep rarely circulated books in the main collection, and having the book fall apart in my hands.

Hard to maintain faith in those libraries while trying to sweep up a mess of crumbling pages. Re-homing those elderly books to the appropriate "shelter" where they would be cared for, with limited access, might have been a better choice.

FOCUS THE COLLECTION TO IMPROVE CHOICE AND CREDIBILITY

However, I haven't forgotten content.

Some people like to treat shopping as a treasure hunt. They want to try on one hundred pairs of mediocre shoes at a discount warehouse so they have the pleasure of finding the pair that looks great and fit even better. A successful quest for them, in and of itself, is a triumph.

Or some prefer to search ancient and unkempt used bookstores for the unexpected crown jewel. The owner of this type of establishment accepts any and all donations and consignments regardless of age or condition and piles the books haphazardly on dusty shelves. The treasure they hope to stumble over is buried under geological piles of pulp and old leather.

It is true, based on personal experience, that the book one person discards might be precious to someone else. It also is true that, in this example, the hunt provides the same emotional jolt as does gambling. Every cobwebbed cluster on every shelf gives the searcher pause. Could The Book be in this next pile? That rare, out-of-print reference book, so expensive in the used book market and unavailable through your local library's interlibrary loan because of budget cuts. That children's book that was dear to your heart, but never earned more than one limited edition, and you never could locate a copy from that small print run, even online.

But...have you ever walked into a used and rare bookstore where the owner discriminates, in the best sense of the word, and has what we used to call "taste" and "style"? Every book has been added for a reason. Every book is in fine condition. Every book has relevant (or interesting historic) content. The fiction is engaging. The nonfiction is competent.

To quote Jo March in *Little Women*, "What richness!"

For our average library user, the response to a well-weeded collection is much the same. A quick scan of a shelf informs them that the choices they are offered are current and relevant, which increases the credibility of the books and the library as a whole. It is not just weeded according to an algorithm regarding age and circulation statistics.

Someone used their good judgment.

And the topics and themes of newer books connect for younger readers and those interested in what is happening today. A smaller collection showcases new books

just as a boutique clothing store is better able to spotlight new arrivals: fewer distractions. As the collection increasingly shifts to better respond to the changing needs of your community, your customers can better appreciate the evolution of the library's materials to reflect the future. Audiences targeted in the strategic plan see their interests mirrored on the shelves.

The library's materials "look" like them.

(An experiment in weeding: Assign your staff members work teams by age; decades will do. Let each team tackle the same diverse selection of, say, 200 books, to determine priorities in terms of replacement or discarding. Choose classics and newer volumes, both fiction and nonfiction.

Compare what the different age cohorts decide is worth keeping. Prepare to not be surprised.)

Balance is part of the art of weeding. Although using one's professional education and expertise to set standards is fundamental, some librarians forget to ask the library user their opinions. Even if during the creation of the strategic plan the library's leadership did their appropriate due diligence and listen to their community's issues, I would suggest that during the design phase your weeding project–and the bigger issue of collection development–also deserves input from library users.

In conclusion, staying aware of your library customer can be as simple as assigning one member of your team to polite nag their colleagues about remember the library's audience.

And, "What about the library customer?" might make a good "weed team" memorial t-shirt. ■

ABOUT THE AUTHOR:

Pat Wagner has been a trainer and consultant for libraries and higher ed since 1978. She has written about weeding and has participated in a "Big Weed" in a college library without air conditioning during a summer break. She also helped found and manage a fine arts bookstore where she watched customers' buying decisions changed when the same books were displayed differently.

Pat has written about weeding and actually enjoys weeding libraries and collections, particularly consumer nonfiction and how-to books. She was the contributing editor for nonfiction for the award-winning book magazine, The Bloomsbury Review, where she evaluated hundreds of books every year and learned that they needed more than a pretty cover.

Collection Weeding: Practical Guidelines for Library Staff, Managers, and Leadership

Wednesday, June 14, 2017; 2:00 PM - 3:00 PM EDT

Weeding your collections is as necessary to the health of your library as weeding is to the health of a garden. Successful weeding does more than make physical room for new books. It also helps focus your resources and guide collection development. The evaluation process requires understanding your library's goals and target audiences, budget constraints, and community needs.

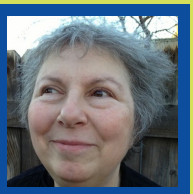
In addition, the properly managed weeding project can ensure that books pulled from the collection are treated as potential assets, not just trash. If you engage your stakeholders, including library users, the media, and colleagues in other institutions, a weeding initiative is an opportunity to educate your community about managing libraries and to build support for fundraising for new books and materials. As with most projects, good planning is key.

Topics include planning to plan; roles of staff, supervisors, managers, leaders, and your library users; establishing goals and timelines; and creating your custom model.

Takeaways:

- Create a weeding plan that reflects current strategic goals.
- Decide which weeding models you will incorporate into your weeding plan.
- Successfully explain the necessity of weeding to staff and library users.

Registration fee: $49/person. Ask us about group rates for parties of 4 or more (email jenny@libraryworks.com)



PRESENTER: Pat Wagner has been a trainer and consultant for libraries since 1978. She focuses on personnel, management, and leadership issues, including marketing, project management, and tech services productivity. She has written about weeding and actually enjoys weeding other people's libraries and collections, particularly consumer nonfiction and how-to books. She was the contributing editor for nonfiction for the award-winning book magazine, The Bloomsbury Review, where she evaluated hundreds of books every year and learned that they needed more than a pretty cover. She is known for her practical and good-humored webinars and face-to-face programs.

Register Now

Collaborative Social Media Campaigns and Special Collections » A Case Study on #ColorOurCollections

BY ANNE GARNER, JOHANNA GOLDBERG, AND REBECCA POU

From February 1 to February 5, 2016, The New York Academy of Medicine Library launched #ColorOurCollections, a social media campaign that invited libraries, museums, and other cultural institutions to share images from their collections for users to color and repost on Twitter, Facebook, Instagram, and Pinterest. The current popularity of adult coloring books inspired the idea. Large print runs and parallel sales of adult coloring books by Joanna Basford, Dover's Creative Haven line, and others demonstrate a surge of interest in adult coloring, a format that encourages participatory art-making.[1] In 2015, coloring books dominated the trade paperback bestseller list, accounting for "13.5% of the total [list] positions."[2] Recently, librarians have responded to the trend, forming library coloring clubs and adult coloring therapy programs.[3] In this article, we discuss the goals of #ColorOurCollections, its successes and challenges, and offer recommendations for special collections in libraries interested in embarking on social media campaigns.

SOCIAL MEDIA USE IN LIBRARIES

A number of articles and monographs have recently addressed library use of social media, in many cases focusing on libraries with special collections. A 2013 survey conducted by Heyliger, McLoone, and Thomas suggests that most special collections use social media platforms with the primary goal of increasing the visibility of their collections as resources.[4] Dickson and Holley (2010) have shown that social media platforms like Twitter and Facebook offer a mechanism for delivery of content to a large audience of users already comfortable with the interfaces of the platform.[5]

Library literature has also emphasized the resources that institutions need to make their outreach efforts salient. The 2014 monograph *Marketing and Social Media: A Guide for Libraries, Archives, and Museums* by Christie Koontz and Lorri M. Mon offers guidelines for aligning institutional goals with more practical social media strategies.[6] Other scholars have focused on the importance of the technological and human resources needed to implement these strategies. Overwhelmingly, the literature stresses the importance of dedicated staff committed to strategic thinking and execution to ensure the success of social media initiatives.[7] Shulman, Yep, and Tomé (2015) have also suggested the usefulness of NodeXL and other software to track and analyze social media networks and statistics.[8] This paper discusses the use of Twitter Analytics, Facebook Insights, Hashtracking, and Wordpress Analytics in analyzing our campaign.

Still other publications have addressed the potential for lasting outcomes of special collections' online outreach. Amanda Kraft and Aleck F. Williams, Jr. (2016) demonstrate that hashtag campaigns in academic libraries offer new opportunities for students to engage with library collections and that the element of interactivity is critical.[9] Ann Dutton Ewbank's work (2015) suggests the vital role thsat influence plays in constructing a successful Twitter campaign. Ewbank argues for the value of institutional accounts vs. individual accounts and the importance of connecting with other institutional accounts for maximum reach.[10] Building on these contributions, which largely discuss social media outreach in academic libraries, our article tracks the outcomes of a social media campaign by an independent research library.

THE NEW YORK ACADEMY OF MEDICINE LIBRARY

Since its founding in 1847, The New York Academy of Medicine has been home to one of the most significant libraries in medicine and public health, safeguarding the heritage of medicine to inform the future of health. Today, we are largely a historical library, offering many of the formative texts of medicine and allied fields from the 16th century forward. More broadly, our collections offer vital perspectives on the history of science, printing and the book, and our relationship to our bodies in sickness and in health over time. We are an independent library not

connected to a museum or university. Our independence gives us the freedom to be creative, but it doesn't provide the support or built-in audience that most collections of our depth have.

The Academy's social media efforts are currently concentrated on four platforms: Instagram, Twitter, Facebook, and Wordpress. The Library's Wordpress blog, "Books, Health and History," active since 2012, produces one to two stories about the collections every week and includes posts pitched toward the history of medicine community as well as to a wider public. On Twitter, active since 2010, we share a mixture of original and retweeted content, including images from the collection and curated content related to our programming and the history of medicine, science, and public health in New York City and beyond; news about preservation and conservation; and the history of the book. Our Facebook and Instagram feeds also typically promote Library happenings, as well as collection material (frequently with some overlap and expansion of our Twitter content).[11]

Koontz and Mon advocate that "social media should be used to advance the mission, goals and objectives of the organization."[12] The Academy Library's mission is threefold: 1) to preserve and promote the heritage of medicine and public health; 2) to explore the connections between history and the humanities and contemporary medical, health policy, and public health concerns; and 3) to make the history of medicine and public health accessible to public and scholarly audiences. We have endeavored to promote the Library's overall mission, while collaborating with a larger community of libraries worldwide invested in preserving the history of the book and the history of science and medicine. Our internal social media strategy defines our primary objectives in two ways: 1) to promote the Library's collections; and 2) to create links and build bridges to similar organizations. These goals have led us to share our content in line with the Library's larger mission, giving context to collection items for an online audience—both scholars and enthusiasts—we would not be able to reach otherwise. #ColorOurCollections addressed these social media goals in a more ambitious way than our day-to-day content.

#COLOROURCOLLECTIONS

We knew from the beginning that the success of #ColorOurCollections would depend on the participation of other libraries and museums. By extending an invitation to our peers, we aimed to establish long-term relationships with potential for further online collaboration and partnership. Partnering with other institutions would also raise their awareness of the kinds of collections we have and encourage use of the rich materials our Library holds.

The initial tweet that catalyzed the #ColorOurCollections campaign.

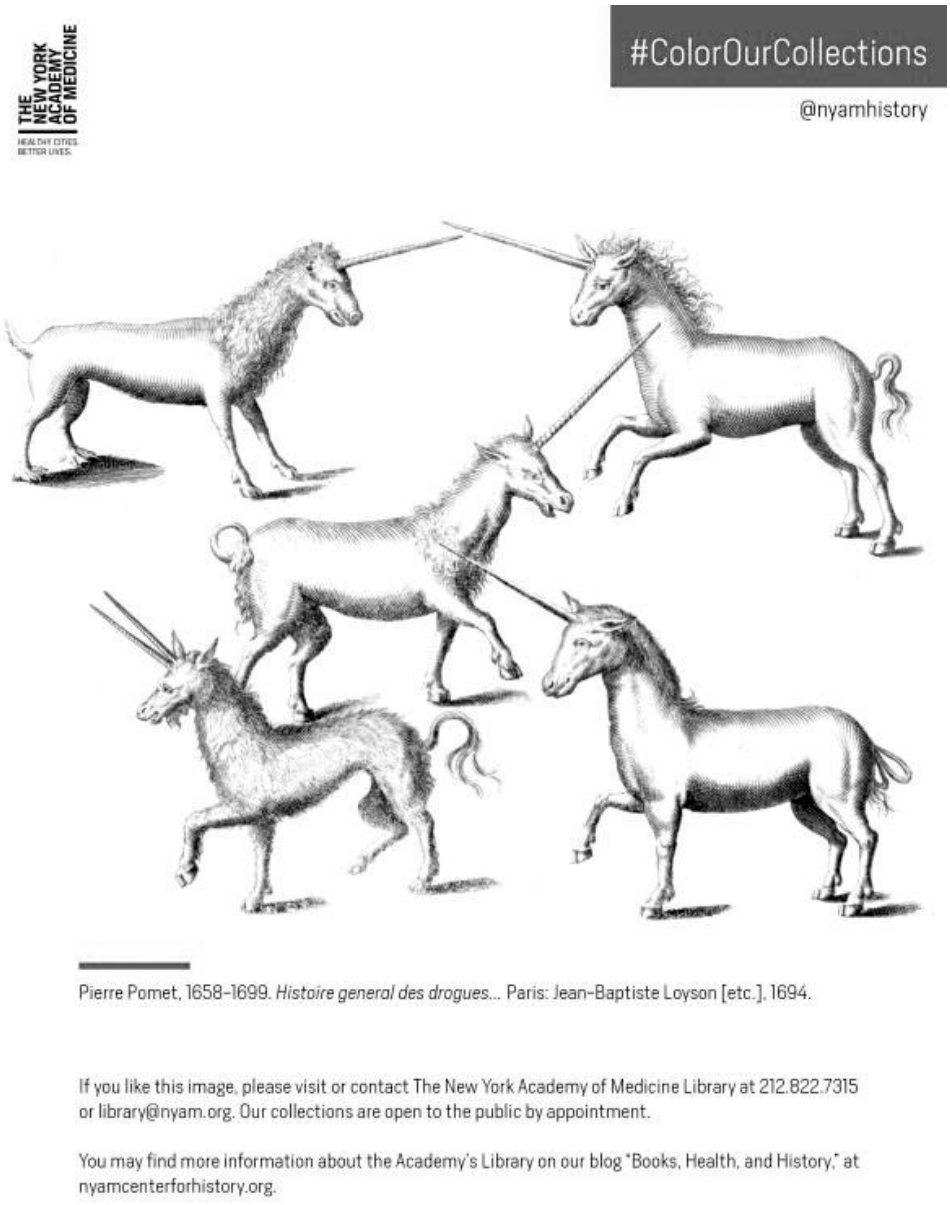
METHODOLOGY

#ColorOurCollections developed organically. An informal Twitter exchange with the Biodiversity Heritage Library in early December 2015 led to the idea, although we had some experience with "coloring our collections," having produced printed coloring books for children in the past few years.

Early on, our three-person social media team consulted with management and our institution's communications department and gained their approval to proceed with the campaign. Support from the communications department was crucial, as they provided the graphic design skills needed to make our coloring book. It is worth noting that we did not anticipate how large the campaign would grow. Our expectations for the amount of work and time involved, especially for the social media team, were far less significant than what was actually required. Nevertheless, even as the campaign became increasingly demanding, we had the support of management, who clearly saw the benefits to our institution.

Once our social media team committed to launching the campaign in mid-December, we identified three main tasks: recruit participants, create our coloring book, and spread the word. Our first step was to e-mail institutions directly. A month before the campaign, we e-mailed a proposal to about 130 institutions. We selected these institutions because we were already connected on social media and thought their collections would have great source material for coloring books. We also sent announcements to several listservs (Exlibris, Archives & Archivists, and Archivists & Librarians in the History of Health Sciences) and posted an announcement on our blog.[13] From these efforts, approximately 35 institutions expressed interest prior to the beginning of February.

To make participation as easy as possible, the only requirements were to post images suitable for coloring on any social



Coloring sheet featuring unicorns from Pierre Pomet's 1694 Histoire general des drogues.

media platform from February 1 through February 5 using the hashtag #ColorOurCollections. We felt that having numerous guidelines might exclude institutions with small staffs or limited resources. #ColorOurCollections content could be as simple as a scanned illustration posted to Facebook or as elaborate as a 20+ page booklet made available for download.

For our own content, we elected to create a 20-page PDF coloring book, working with the graphic designer in our institution's communications department. Each page included the campaign hashtag, our social media handle (@nyamhistory) and blog URL (**nyamcenterforhistory.org**), and bibliographic information for the image source. We recycled content from our earlier coloring books and added five new images.

While current coloring trends favor intricate patterns, these are not easy to find in our collection's early printed books. Instead we identified illustrations with distinct lines, minimal shading, and empty spaces as ideal for coloring. We suspected animals would be popular, so natural histories featured prominently. For these, we chose images from Aldrovandi, *Serpentum, et draconum historiae libri duo,* 1640; Aldrovandi, *De quadrupedib.' digitatis viviparis* ..., 1637; Gesner, Historiae Animalium, Liber I, 1551; and Gesner, *Thierbuch,* 1563. We selected Scappi's Opera, 1596, because its detailed kitchen scenes would be fun to color. Other sources included an anatomical atlas (Bidloo, *Anatomia humani corporis*..., 1685), an herbal (Blackwell, A Curious Herbal, 1739), and a book on drugs (Pomet, *Histoire general des drogues,* 1694). Of all our coloring sheets, Pomet's unicorns seemed to be colored the most, based on the colored sheets shared by our audience, showing that animals, even mythical ones, are a hit.

Once other institutions joined #ColorOurCollections, the campaign took on a life of its own. Participants began promoting the event through their own channels. Institutions with no prior contact to us became involved. As originators of the campaign, we felt a responsibility to capture and aggregate #ColorOurCollections content. To keep track of participants, we used an Excel spreadsheet, listing the institution, contact information, dates of contact, and notes on any questions or concerns. Since we were in direct contact with the early participants, this was easy to maintain during our initial outreach efforts; but, as institutions joined through word of mouth, we had to search for them. We also created a public Twitter list, adding new participants as they signed up.[14] As institutions released their #ColorOurCollections content, we kept a separate list of links to coloring sheets and books, blog posts, media mentions, and specific tweets of interest.

Both before and during the campaign, we posted actively about it on Twitter, Facebook, and Instagram, putting most of our efforts into Twitter, as Twitter is a fast-moving medium that had the highest volume of campaign participants. During the campaign week, our social media activity was almost entirely focused on the event. We shared our coloring sheets and blog posts several times a day on Twitter and attempted to retweet all participating institutions at least once during the week. We also shared sheets colored and posted by campaign enthusiasts. Unsurprisingly, Instagram had robust activity from colorists; most of our content there consisted of reposts of their work. Facebook posts included our blogs and media coverage of #ColorOurCollections. To highlight the campaign across platforms, we designed a #ColorOurCollections banner featuring our coloring page images (using the free online graphic design site Canva) to be used atop our Twitter and Facebook profiles and in each #ColorOurCollections blog.

During the official #ColorOurCollections week, we blogged about the campaign every day. Each post featured two of our coloring sheets, as well as a link to our full coloring book, and included background information on the image sources and links to their

catalog records. The posts also highlighted other institutions' content and recognized the work of colorists. On the last day of the campaign, we posted a final blog entry providing our collected list of links to coloring sheets and books.[15]

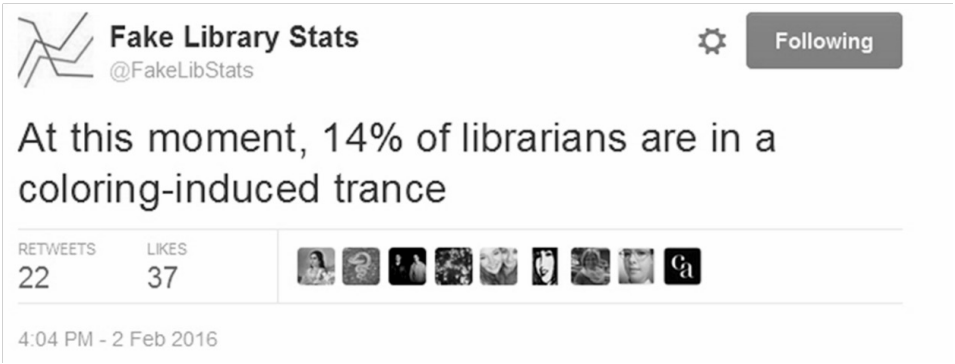
Keeping up with the campaign was a tremendous amount of work; we automated what we could. We used IFTTT (ifttt.com), a tool that connects online platforms with "if this, then that" statements, or "recipes." Using IFTTT, tweets and Instagram posts using #ColorOurCollections and #ColourOurCollections were automatically sent to a Slack channel. Slack is a collaborative messaging app designed for the workplace, which our social media team uses for much of its communication. Two of our team members found this a useful way to track the hashtag's activity during the campaign, while the third found it overwhelming, preferring to use a hashtag search through the social media channels themselves. We had to alter our IFTTT recipe to prevent the Slack channel from being overrun with retweets.

IFTTT was also helpful with our Pinterest boards, which were created especially for #ColorOurCollections. We used Pinterest to compile other institutions' coloring content and gather social media users' colored-in images, creating two boards: "#ColorOurCollections" and "Our Collections, Colored." Through IFTTT, all Instagram posts with the hashtag were sent to Pinterest; staff had to move images from the "#ColorOurCollections" board to the "Our Collections, Colored" board as appropriate. Images posted to Twitter were added to Pinterest manually by our staff, who attempted to include at least one image from every participating organization, along with colored-in images not also posted to Instagram and thereby already directed to Pinterest through our IFTTT Instagram recipe.

As mentioned earlier, the campaign was a considerable undertaking, especially during the #ColorOurCollections week. All three of our social media team members devoted much of that week to the campaign. It was a group effort to keep track of participants and their content, update our lists, post our own content, react to social media questions and posts, write blog posts, and simply monitor the campaign.

RESULTS

By the close of the #ColorOurCollections week, 211 institutions had taken part, using 239 social media accounts. Of these, 232 posted to Twitter, while the remainder used other social media platforms only. These organizations represented libraries, special collections, digital collections, museums, historic homes, archives, and historical societies in 32 states within the United States and in Canada, the United Kingdom, France, Spain, Sweden, Australia, and New Zealand, covering a huge range of disciplines. They shared 103 coloring books and pages and 24 Facebook, Flickr, and Pinterest albums, along with an enormous number of one-off Twitter, Instagram, and Facebook posts of images to color. Coloring selections came from incunables, natural histories, botanicals, children's classics, anatomical atlases, yearbooks, patents, stained glass windows, historical photographs, and more. We knew the campaign had really made it, though, when it inspired this fake statistic:



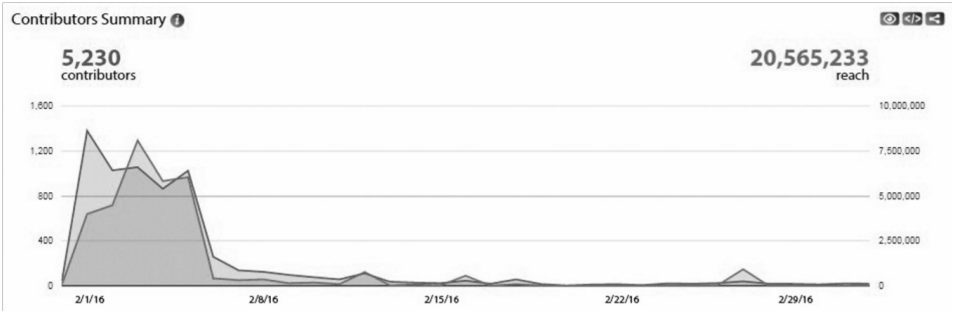
A sign that the campaign had caught on.

OVERALL CAMPAIGN STATISTICS

Between January 31, 2016, and March 3, 2016—the period we tracked using the online tool Hashtracking—5,230 contributors posted 9,573 tweets (2,342 original tweets, 7,021 retweets, and 210 message tweets) using #ColorOurCollections, reaching 20,565,233 people. Although the majority of these tweets (almost 83%) were posted from February 1 through February 5, we opted to track a longer period to get a sense of how the hashtag continued to be used post-campaign.

We had never coordinated a social media campaign of this size before—neither had our institution's communications department. Going into the campaign, we were unaware that most online management tools for hashtag tracking are designed to collect data during a campaign, not retrospectively. Many of these tools, like Keyhole, Tweetbinder, and Hashtracking, offer free trials. Some—like Tweetchup—are free but do not offer robust reporting or more than 10 days of data. We signed up for a Hashtracking account after the campaign ended. At that point, we could only go back in time to access data starting January 31. Even with a free trial, we paid a fee to access this historical data and were limited to tracking #ColorOurCollections only, rather than both the American and British spellings of the hashtag. But because the majority of users tweeted with the American spelling or with both spellings, these statistics offer an excellent overall view of the campaign. Even so, given these limitations, they underestimate the amount of activity the campaign enjoyed.

Hashtracking tracked only the use of #ColorOurCollections in Twitter. Instagram lists the number of times a hashtag was used, so we know that images have been posted with #ColorOurCollections more than 500 times before, during, and after the week. We were not able to measurably track the hashtag's use on Facebook in real time, but we know the campaign was less active there



Hashtracking stats from January 31, 2016 through March 3, 2016.

based on searches in the platform. Still, some institutions, like the John J. Wilcox, Jr. Archives at William Way LGBT Community Center and the Alaska State Library and Historical Collections, participated only on Facebook.

WHO COLORED OUR COLLECTIONS?

Many of the posts using the hashtag came from individuals sharing their colored in pictures. While the majority of artists were adults, as anticipated, some were pictures colored by children and shared by their parents or teachers. Some images were colored and shared by institutional staff, but the majority came from people without apparent ties to the collections they colored, who found out about the campaign through content on their social media feeds. What we know about the experiences of the artists remains anecdotal, based on those who shared their thoughts on their social media accounts. One French Instagram user, @suivez_le_fil, expressed delight at encountering a coloring sheet from Fuchs' *De historia stirpium* (1542) because she had written her masters' thesis on the book. In another case, user @eeevarose took a textile arts approach, translating a botanical woodcut depicting a poppy into an embroidery project. For future campaigns, we will invite participants to take a post-campaign survey so we can get more feedback about their experiences. We have a sense of scale from our Pinterest album: we pinned more than 450 colored images to our "Our Collections, Colored" board on Pinterest (either automatically from Instagram via IFTTT, or by hand through Twitter), indicating a high level of participation from colorers.

#ColorOurCollections also brought collection images to an offline audience. The New York Botanical Garden's LuEsther T. Mertz Library hosted two lunchtime coloring sessions, both open to the public. University libraries printed copies of coloring pages for patrons to color, and many did so again after the campaign as a finals week destressor and shared their efforts on social media. Public libraries printed images shared during the campaign and used them in their programming. A number of elementary school libraries did the same, which is how a child attending Acorn Elementary School in Arkansas, for example, could color a 17th-century flower from the Special Collections of the University of Missouri.

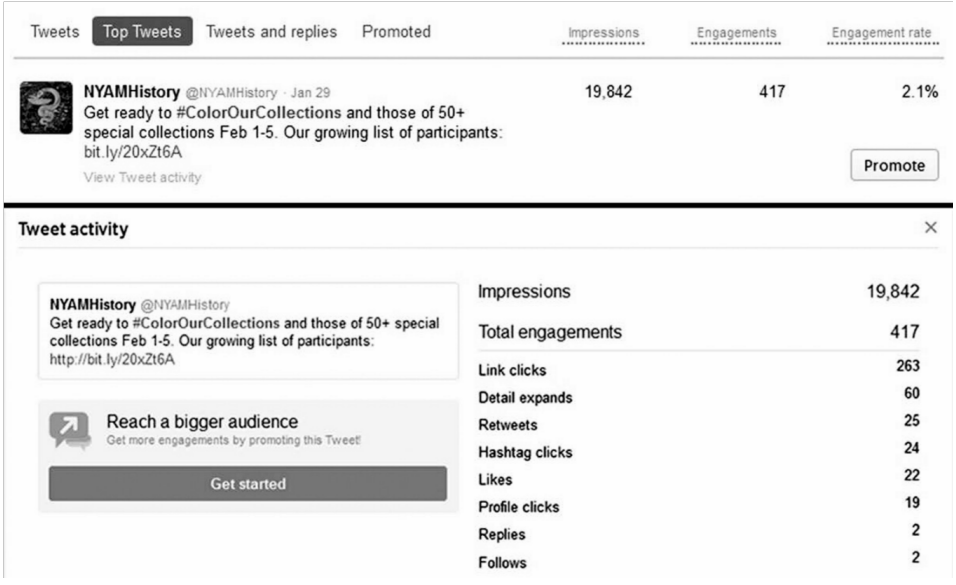
ONLINE COVERAGE

The campaign received more than 30 mentions on blogs and online outlets, not counting participating organizations' blogs. This included coverage in popular web sources like Book Riot, Bustle, Open Culture (shared 25.1k times), *Popular Science*, and Mental Floss.[16] Newspapers in Palo Alto, Reading (U.K.), and Waco covered the campaign with a local twist, while The Artstor Blog, *School Library Journal*, and *Library Journal* InfoDocket took an industry approach.[17] Smaller, personal blogs also spotlighted the campaign.[18] On January 27, someone used Ask MetaFilter to inquire about how to get started with adult coloring; two days later, someone replied linking the person to the campaign.[19] Our communications department pitched the campaign to select media outlets, including *The New York Times Arts Beat* blog, Huffington Post, and The Daily Beast, but the majority of these mentions came organically as #ColorOurCollections gained traction throughout the week.

Johann Theodor de Bry's 1641 flower bloomed in the care of students at Acorn Elementary Library in Arkansas.

While some of these outlets featured one or two coloring books only, most offered an introduction to the campaign followed by lists of selected coloring books. Not all of the outlets mentioned The New York Academy of Medicine as the originator of the campaign, but most did. However, many linked to our 2014 coloring book, created to hand out during a local event and included in early #ColorOurCollections announcements, rather than the 2016 version made specifically for #ColorOurCollections. Releasing and promoting a coloring book the Thursday or Friday before the week begins, which several libraries did, will likely gain it more attention by these online outlets.

A couple of pieces published after #ColorOurCollections reflected on the campaign in thought-provoking ways. Digital Aladore, a personal blog tracking an e-book project, provided technical tips for libraries sharing images, from file naming and metadata standards to providing sufficient context for the images shared.[20] A post from The Scholarly Kitchen, a blog on scholarly publishing, received even more attention. In her post, "What #ColorOurCollections Suggests," author Jill O'Neill broke down the benefits of #ColorOurCollections to participating institutions, saying that it boosted visibility and awareness "of otherwise hidden assets held in a collection"; "fostered re-use of the object or asset, without threat of damage or diminishing of its long-term value to



We were able to identify our top tweet and track the campaign's impact using Twitter Analytics.

the research community"; and encouraged engagement in a trackable way.[21] This list delineates succinctly our goals for the project, and it was gratifying to read that our objectives translated to a wider audience.

#COLOROURCOLLECTIONS AND OUR LIBRARY

#ColorOurCollections had a measurable impact on our Library's social media reach, especially on Twitter, as measured by Twitter Analytics (analytics.twitter. com). We began promoting the campaign in January 2016; we gained 170 new Twitter followers that month, compared with 99 the month before. In February 2016, we gained 250 new Twitter followers, our best-ever month on the platform to date. From February 1 through February 5, our tweets gained 73,900 impressions (an average of 14,800 per day), compared to 41,200 impressions the following week. Our top tweet this year remains one announcing the campaign on January 29, 2016, which gained 19,842 impressions.

Our two best months to date on Instagram are January and February 2016, when we gained 100 and 176 followers, respectively. We manually track this growth; Instagram does not yet have a built-in analytics feature, though it does tell you how many times a hashtag has been used on the platform. As we only posted about the campaign once in January, it seems unlikely this was a factor in boosting our followers that month. But our increased presence on the platform during #ColorOurCollections, along with following participating institutions' accounts and receiving follows in return, largely caused the February spike.

As stated earlier, we created a Pinterest account for use with the campaign. Organically, our account gained 141 followers during and after #ColorOurCollections. The week served as an introduction to special collections' uses of Pinterest for our team; we may put our account to more use as our Library's digitization program expands.

The campaign had less of an impact on Facebook, as tracked by Facebook Insights; we gained 148 page likes in February but did not see a spike in page likes during the campaign. This was to be expected, as our campaign activity centered on Twitter and, to a lesser extent, Instagram.

Our blog, "Books, Health, and History," enjoyed a huge boost from #ColorOurCollections, reflected in Wordpress's analytics. Our most popular blog entries on average receive 1,000 to 2,000 views per year. Our introductory #ColorOurCollections blog post, posted January 6, had more than 2,600 views in January and 3,600 views in February alone. "Books, Health, and History" typically gets 8,000–9,000 views per month; in January, it had nearly 12,000 views and in February it had 14,863. As of this writing, five of the top ten most popular Wordpress posts published this year relate to #ColorOurCollections. Our leading referrers to the blog (after Facebook and Twitter) also stem from that week: The Smithsonian Libraries, *Library Journal* Infodocket, the New York Public Library, Book Riot, and Ask MetaFilter top the list, all with campaign-related links.

We weren't the only participants to enjoy an online boost from #ColorOurCollections.

The Folger Library and the Bookbinders Museum reported their successes on Twitter.

For future campaigns, we will follow up with institutional participants to more formally gauge the impact of the campaign on their online reach.

LESSONS LEARNED

Several factors contributed to the success of the campaign, and they can inform our future campaigns and those at other institutions:

Timing

We chose February 1–5, 2016, for our campaign both to give us sufficient time to prepare (we began planning in December) and because it did not coincide with other external events. Schools would be in session and not be in the midst of exams, Bibliography Week in New York would be over, and major library conferences would not be taking place. In addition, the first week of a month is easy to remember and plan for, especially if a campaign becomes an annual occurrence. A week (or a five-day work week, in this case) is a sufficient amount of time to organically build interest in a campaign through online exposure. Picking a memorable time for a campaign that does not coincide with other events and choosing a sufficient duration for a campaign are important factors for the campaign's success.

We learned the hard way that campaign tracking also has to be well-timed. In planning a large campaign in the future, we would advise signing up for Hashtracking or a similar analytics service in the weeks before the campaign begins.

Early Recruitment of Participants

As discussed earlier, a month before the campaign we contacted about 130 organizations via e-mail, inviting them to participate. We also published a blog post on January 6 explaining the campaign and welcoming participants we may have overlooked in the e-mail. Getting early adopters was important, ensuring that the campaign would reach a broad audience, one much larger than had we created and shared a new coloring book on our own. Once highly regarded institutions with name recognition signed

Other institutions reported the benefits of participation in #ColorOurCollections in their own feeds.

on, like the Smithsonian, the New York Public Library, and the Bodleian Library, we knew the campaign had promise. This outreach to institutions may also lead to other future collaborations. Planning ahead is key: if your library is looking for social media campaign participation, ask early and recruit widely.

Ease of Participation

While getting early buy-in from collaborating institutions was important, we also designed the campaign to be easy to join at any point during the week. All participating organizations had to do was share one image on the social media platform(s) of their choice using the hashtag. They were welcome to do more, and many did, but making the barrier to entry low allowed more organizations to take part. We also chose a type of campaign not limited by the focus of a library's collection—any collection item, be it an incunable, a photograph, or a patent, could be turned into a coloring page. Because of this, theology libraries could participate alongside college archives and historic homes. While creating a coloring page could take up staff time, libraries likely already had digitized excellent candidates for coloring images. In addition, free apps like Colorscape turn photographs into coloring sheets.

The campaign allowed organizations to work with resources and social media accounts they already had to promote their collections to the public in a new way. The University of Scranton Weinberg Memorial Library created several coloring books using images already in their digital collections and promoted them on multiple platforms (institutional blog, Twitter, Facebook, and Instagram). They point out that the original images were edited for the coloring books, and this created an opportunity to invite users to explore their digital collections in addition to engaging with them through coloring. Allowing participants to choose how they take part—including the social media outlets used, the collection items featured, and the time they dedicate to the campaign—makes campaigns more feasible for institutions deciding whether or not to join.

Interactivity

The fun of #ColorOurCollections came from inviting members of the public to interact with collection items. The campaign inspired adults and children, academic and public library patrons, and everyone in between to pick up a crayon and take on the role of the colorist. A campaign that invites everyone to participate—either like this one, by coloring, or by contributing a story or video or photograph—has the potential to interest many more people than a campaign that, for example, passively asks for follows and retweets.

CONCLUSION

#ColorOurCollections increased awareness of our institution's collections, and those of other participants, in measurable ways. The campaign offered a framework for engagement, facilitating connections to current and prospective patrons, as well as peer-to-peer relationships. Repeated name-checking of the Academy on social media and in the press raised awareness of our Library and its holdings and gained us new followers on our social media accounts. As a result of the campaign, we follow more of our peer institutions and know more about their collections. Our team is now aware, for example, that the National Archives' patent collections include fabulously intricate drawings and, more locally, that the Cooper Hewitt, just a ten-minute walk away, has astonishing 19th- and early 20th-century Japanese cut paper illustrations. The #ColorOurCollections campaign also proved a catalyst for discussions with other libraries about launching new campaigns. As of this writing, the Academy is in the planning stages of an October social media campaign launch in partnership with the Biodiversity Heritage Library, the Medical Historical Library at Yale University, and the Smithsonian Libraries. In addition to learning more about these institutions' collections, our engagement with these libraries' staff members contributes to the forging of relationships with our colleagues in libraryland.

#ColorOurCollections demonstrates that the best collaborative social media projects are those that offer flexibility and freedom, in terms of both content and level of parsticipation. Minimizing rules and restrictions allowed institutions of all sizes and capacities to join in and leverage the campaign to reach their own institutional goals. With the constraints of staff time and financial resources, we recognized the importance for institutions to have the freedom to participate at a level appropriate to their ability and needs.

A big part of the appeal for participants in #ColorOurCollections was rooted in the campaign's broad call, and in the myriad ways institutions could invite their audiences to participate during a five-day window. While the campaign was based

The campaign allowed followers, both those knowledgeable about special collections and those not, to use collection materials creatively and connect with previously unknown institutions.

on social media, libraries could tailor their participation to in-person constituencies as well, with drop-in coloring sessions, printed handouts, and other coloring events. The campaign was expansive enough to accommodate not only varied library services, but it also facilitated institutional choice with regard to collection material shared. Libraries could choose images for #ColorOurCollections from hidden collections, catalogued collections, items on exhibition, or other materials relevant to institutional calendars. Allowing institutions to choose their own materials for sharing and coloring facilitated individualized outreach and advancement of institutional missions, yet still within the auspices of the broader campaign.

The interactive element of #ColorOurCollections also created an opportunity for existing followers and core supporters to read about collection materials, explore our catalog, and use the content creatively. #ColorOurCollections allowed audiences to interact with rare material frequently housed in collections accessible to a limited audience, or material that may be known only to a well-connected researcher. It invited public users to adjust their understanding of what might be available in a library and to seek out new and unfamiliar sources for creative and scholarly work. Online audiences became ambassadors for our collections, sharing our sheets both online and as printouts, and reporting back that they and their children or grandchildren loved the coloring sheets. Inciting our base facilitated an introduction of our Library to new followers drawn to our visual holdings and then interested and engaged

followers more long-term by following us on social media.

Finally, the exposure the campaign provided allowed people who had never heard of our Library previously to actively engage with our collection, remotely, and potentially in person. This experience was summed up succinctly by a woman who phoned the Library several weeks after the campaign. "Your coloring book said that I should contact you if I liked an image," she said. "I love the rhinoceros [a Dürer woodcut replicated in Gesner's 1551 *Historia animalium,* Liber I]. If I visit New York City, I want to see it in person." ■

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ABOUT THE AUTHORS:

Rebecca Pou is the Archivist at The New York Academy of Medicine Library, a position she has held since 2008. She has a BA in English & American Literature from New York University and an MSLIS from the Pratt Institute. Anne Garner is Curator of Rare Books and Manuscripts at The New York Academy of Medicine Library. She has a BA in Classics from Loyola University in Baltimore, completed graduate coursework in Classics at the University of California, Los Angeles, and holds an MSLIS from the Pratt Institute in New York, with a certification in Archives. Johanna Goldberg is an Informationist at Columbia University Medical Center's Augustus C. Long Health Sciences Library. She holds a BA in English literature from Goucher College and an MSLIS from the Pratt Institute.

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Beta Spaces as a Model for Recontextualizing Reference Services in Libraries

BY MADELYNN DICKERSON

If the "library of the future" is an environment in which knowledge is created, not merely preserved and accessed (as Arizona State University Librarian James O'Donnell suggested recently in his keynote at the 2015 Charleston Conference), then reference services are positioned within this future library to foster that environment (Hawkins, 2015). In reality, traditional reference services are often questioned as an effective model for delivery of research support in academic libraries. The reference desk as a physical space was called into question by Barbara J. Ford in the mid 1980's and Sonntag and Palsson boldly stated in 2007 that "it is unquestionably time to eliminate the reference desk and recognize that the services it originally provided have been replaced by course-integrated instruction and research assistance 'on demand'" (Sonntag and Palsson, 2007). Whether located at a central services desk or compartmentalized as a series of services such as roving or embedded reference, the way we think about reference delivery and the role it plays in the facilitation of intellectual experimentation and student scholarship is under constant pressure to demonstrate relevancy, and it certainly faces competition from both within and outside libraries (Campbell, 1992; Campbell, 2008; O'Gorman and Trott, 2009).

Alternative "spaces" in libraries are not new, but they tend not be built around reference services. Beta spaces are defined by Jeff Goldenson and Nate Hill as "environments within a larger library ecosystem created to prototype and deploy new ventures" (Goldenson and Hill, 2013). While this often takes the form of makerspaces or digital labs in libraries, it also describes the work of student researchers (or any library user). Scholarship is a "new venture" and the reference space can be a safe place outside of the formal classroom where students can experiment, explore, and even fail without fear of negative consequences. In this article, I explore the concept of the beta space and think about the ways that reference as an activity is one that makes the most sense if delivered in a beta environment. The final section of this article is a narrative case study of my own attempt (which may or may not have been successful) to recontextualize reference services at my library into a collaborative, experimental environment designed to inspire, encourage user ownership of the space, and demonstrate the value of reference.

BETA SPACES: A DEFINITION

The term "beta space" is not yet commonly used in library discourse, though the word "makerspace" is. Makerspaces have been around for over a decade, and according to MAKE Magazine, the term began being used widely in 2011 (Cavalcanti, 2013). According to the EDUCAUSE Learning Initiative (ELI), a makerspace is a "physical location where people gather to share resources and knowledge, work on projects, network, and build" ("7 Things You Should Know About Makerspaces"). Though this definition is broad, it emphasizes technology and the physical building of materials in a creative environment. Further along in its definition of makerspaces, ELI goes on to explain that "makerspaces owe a considerable debt to the hacker culture that inspired them, and many are still primarily places for technological experimentation, hardware development, and idea prototyping". There are certainly elements of the makerspace in the beta space, but these terms (and these spaces) are not synonymous. The beta space is a prototyping space, but one that focuses more on ideas than technology. In a succinct definition from their article in Library Journal, Jeff Goldenson and Nate Hill describe beta spaces as "environments within a larger library ecosystem created to prototype and deploy new ventures." Both Goldenson and Hill worked to co-develop two independent beta spaces at their respective institutions, The Harvard Graduate School of Design, and the Chattanooga Public Library. The emphasis for both of these projects was the development of a community that supported experimentation—not just with technology, but with ideas. (Goldenson and Hill, 2013).

Chattanooga's project is called "The 4th Floor." It evolved from the transformation of a 14,000 square foot storage area into a collective learning environment. The space is described as a "public laboratory and educational facility" with a focus on information, design, technology and applied arts. The space features computers with access to interactive online courses, a small collection of business and innovation periodicals, provides access to digital technology, and serves as an events space. Harvard's project was called the Labrary. Occupying a vacant storefront in Harvard Square, it was conceived by students as part of the Library Test Kitchen, a course taught at the Harvard Graduate School of Design. Unlike the 4th Floor, which is a permanent space, the Labrary was a 37 day experiment, essentially a "pop-up" library designed to

facilitate creative collaboration, exhibit student work, and try out new ideas from the Library Test Kitchen such as tables that play low ambient noise to stave off complete silence (Koerber, 2013).

Makerspaces, technology-rich labs, and the growth of digital humanities in the library space is not without controversy. The makerspace movement can be seen as part of a larger trend of applying a corporate mindset to library services, with a focus on technology and production rather than discourse. There are wider concerns that academic libraries are under pressure to adopt business strategies and focus on library users as "customers" (Nicholson, 2015) as well as on the creation of knowledge as a consumable product (Ward, 2012). A recent article in the Los Angeles Review of Books questions the neoliberal agenda of digital humanities in particular and specifically targets the "promotion of project-based learning and lab-based research over reading and writing" (Allington, Brouillette, and Golumbia, 2016). These concerns are legitimate and it is healthy to question the motivations behind the transformation of any library service. Library makerspaces—and by extension, beta spaces—are designed to support active learning through hands-on experiences. Kurti, Kurti and Fleming explain that "maker education is a branch of constructivist philosophy that views learning as a highly personal endeavor requiring the student, rather than the teacher, to initiate the learning process" (2014). I believe that beta spaces offer an opportunity to facilitate collaborative learning outside of the classroom in a way that does not negate the value of traditional scholarship, nor supplant traditional library services, but it does offer an opportunity to enhance them.

Out of their experimentations, Goldenson and Hill establish three "shared beliefs" or themes about beta spaces. For them, beta spaces:

1. Facilitate real-time knowledge creation
2. Are designed for experimentation, and
3. Encourage community-driven innovation (Goldenson and Hill, 2013).

It is important to remember the participatory element of beta spaces. The creative activities taking place within beta spaces such as the 4th Floor and the Labrary are user-driven. The spaces themselves were designed by librarians, faculty, (and in Harvard's case, graduate students), but the work that goes on there is fueled by user inquiry, needs, and creative impulses. A participatory design approach to the development of beta spaces in libraries is therefore at the foundation of the concept. "Participatory design" was defined by the Council of Libraries and Information Resources (CLIR) in 2012 as "an approach to building spaces, services and tools where the people who will use those things participate centrally in coming up with concepts and then design the actual products" (Participatory Design in Academic Libraries). A beta space is nothing without the people who come into it to try out new ideas, whether through discussion, a more formal reference interview, the exhibition of user-created work, or even a creative response to a display prompt.

The Idea Box at the Oak Park Public Library in Illinois is an example of a beta space-type environment that is set up by library staff, but then powered by the creativity of the public who interact with and add value to the space through participation. The Idea Box is a 19' x 13' glass-walled storefront with regularly rotating displays that encourage people to come in, "tinker," and experiment. The range of activities in this space has included magnetic poetry, advice sharing, dancing, and oral histories—all driven by user contribution. Staff may have painted the room with magnetic paint and populated it with word fragments, but the poems were created by visitors and it is the visitors who give this space meaning (Library as Incubator Project, 2013). With these examples in mind, a beta space can perhaps be summed up as: a space within the library environment designed to facilitate knowledge creation in real-time through user participation and experimentation. This is also what I consider to be the heart of reference services.

BETA SPACES AND REFERENCE SERVICES

Reference as a library service can encompass a range of activities, depending on the type of library and its particular mission. I have attempted to identify a core definition of "reference services" from ALA's Reference and User Services Association (Definitions of Reference – Reference & User Services Association), but found only definitions for the components of this service: "Reference transactions" and "reference work." According to RUSA, reference transactions are "information consultations in which library staff recommend, interpret, evaluate, and/or use information resources to help others meet particular information needs." The makeup of this reference work "includes reference transactions and other activities that involve the creation, management, and assessment of information or research resources, tools, and services" (RUSA). These definitions were last approved in 2008 by the RUSA Board of Directors and describe a fairly straightforward exchange between library staff and user, one that emphasizes the transference of information from authority figure to knowledge seeker and explicitly excludes formal instruction. With this definition, it is easy to see why reference services are at a cross-roads.

An informal survey of reference services mission statements and statements of philosophy shows a broader scope for reference and research support services in both academic and public libraries. The mission statement for Research and Information Services at the University of Illinois at Urbana-Champaign, for example, states:

> "The Research and Information Services is the University Library's central hub for research assistance, leading patrons to the discovery of library resources

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and expert help. We provide assistance to researchers working in all disciplines, help people to locate difficult to find items, and make referrals to subject specialists when appropriate. We support the educational mission of the university by approaching research support services from an instructional perspective, and by fostering user independence and the development of information literacy skills" (Mission Statement & Vision).

While couched in the practical (i.e. locating items and making referrals), this mission statement addresses the centrality of reference services to the overall mission of the library, and encompasses instruction in a way that the RUSA definition does not. Likewise, New Jersey's Newark Public Library philosophy of service puts reference at the very center of what the library does. Newark goes so far as to say: "Reference service at The Newark Public Library is one of the most vital and visible expressions of the Library's purpose and mission and is key to each of the Library's four primary service roles: to serve as a center for information, formal education, research and independent learning" (Reference Services Policy – The Newark Public Library).

In many cases, however, reference services are not explicitly addressed in the library mission statements and the physical footprint of these services is being dismantled in some libraries. The news is often alarmist. In 2010, a Los Angeles Times article on libraries in the digital age opened with the declaration that a public library in the Denver area replaced its reference desk in order to make space for patrons to play "Guitar Hero" (Sarno, 2010). In his 2013 study, "Shall We Get Rid of the Reference Desk," Dennis B. Miles found that a large percentage (66.4%) of academic libraries still use a physical desk to deliver reference services. But libraries are experimenting. In addition to desk-based services, librarians are engaged in roving reference, are consolidating service points (such as merging reference and circulation), and are offering more in-office consultations with students (Miles, 2013). At Sonoma State University, the reference desk has gone through a number of transitions in recent years, starting with a roving reference program in 2012 and the consolidation of the Reference and Circulation Desks. While the combined desk allowed for more efficient staffing, it also served as a central place for answering quick directional questions and contacting subject specialists on an on-call basis (Lawson & Kinney, 2014). In 2001, librarians at Northwest Missouri State University completely removed their traditional reference desk and instead invested time in embedded instruction (both in the classroom and online), among other just-in-time services (Meldrem, Mardis, & Johnson, 2005). This model essentially disperses the research activities central to the work of the library across campus and within the online environment.

There is an uncomfortable tension between the stated value of reference services in library mission statements and the threat to the visible presence of these services in the physical environment through a dispersal of services or a limitation of services behind a static desk. Many of the newest and most exciting spaces in libraries are technology-rich spaces such as makerspaces and digital labs, but these are often built out in separate classroom-like spaces. Even the 4th Floor at the Chattanooga Public Library, a great example of a successful beta space, is quite removed from the primary services desk. If a library does have a reference desk, its function is surely in question when the new super-star room filled with collaborative technology and innovative resources pops up down the hall. Instead, I see the potential in developing reference services spaces—such as a research or information commons space—as a beta space. Instead of dispersing reference services, they can be integrated into the fabric of a creative, user-driven environment where a research consultation is not merely a "transaction."

Goldenson and Hill's three themes for beta spaces (real-time knowledge creation, experimentation, and community-driven innovation) are very much in line with the scope of reference services. Because users are actively engaged in the research process while using reference services—or have the potential to be while asking more directional questions at the reference desk—the beta reference space is an ideal environment to make research visible through collaborative inquiry, curated reference source collections, and interactive and other displays/exhibits like those in the Idea Box at Oak Park. Placing reference within the beta space helps to clarify the services offered, inspire other researchers about what is possible, and educate users on available resources. Focusing on knowledge creation within reference services validates the work of the library user and helps to establish a healthy symbiotic relationship between library staff and user.

A (VERY BETA) FIRST FORAY

When I was hired in July 2014 as the information specialist overseeing reference services at the Pearson Library at California Lutheran University, the lines between reference services, circulation, and information literacy were fluid and confusing. The official home base for reference services was the "Information Commons" (IC Desk), a dilapidated desk with two office chairs for staff on one side and a bank of 5 public computer workstations on the other **(See Figure 1)**. Open every day from 10am-10pm during the semester, the IC Desk was mainly staffed by students cross-trained in circulation. The Circulation Desk served as a de-facto reference desk during periods of understaffing. I needed to figure out what reference meant for us, how to ensure that it was meaningful to users and to the staff

Figure 1: Information Commons Desk with directional sign above.

» With the support of the library director, I set out to establish a strategic plan for reference services (as a service and as a space) and as I developed these plans, they began to solidify around the concept of the beta space. The strategic plan's stated mission was to "inspire research by providing a variety of research services to best meet the needs of CLU students, faculty and staff by creating a scholarly environment that supports student learning across departments.

who worked there, and how to isolate it as a singular service in order to market it. In order to do this, I unconsciously drew on my experience teaching at an art school, where the students spent hours working in an atelier environment learning new techniques through trial and error. I was also greatly inspired by my very first library school class at San Jose State University in Spring 2015: "Innovation and Participatory Programming in Libraries," taught by Monica Harris, to whom I owe a great deal of credit. This is where I learned about beta spaces.

At the IC Desk, we were experiencing healthy patron interaction statistics. Based on internal statistics collected on Springshare's LibAnswers Reference Analytics from Fall 2014, the IC Desk logged a monthly average of 101 in-person patron interactions and through LibChat, desk staff engaged in an average of 116 online chats with patrons per month (serving an FTE of approximately 4,100—about 2800 undergraduate and 1300 graduate students). Most of the time, the desk was staffed with students while librarians were on-call. The stats seemed good, but anecdotally, there was a lack of awareness about reference services at the IC Desk and low morale for those who worked at the "Isolation Corner." Many users came to Circulation to ask reference questions and were annoyed at being redirected to the desk behind them. As the reference coordinator, it was challenging to staff the desk with librarians, who were heavily engaged with instruction and weren't consistently able to commit to regular hours at the desk. For me, the Information Commons' mission to "support research and learning by offering a conceptual, physical, and instructional space designated to deliver, instruct and gather information" was in question. It wasn't really a commons. It was just a desk.

With the support of the library director, I set out to establish a strategic plan for reference services (as a service and as a space) and as I developed these plans, they began to solidify around the concept of the beta space. c" The plan was founded on five primary goals, which were stated with no clear timeline, and were based on an outline developed by Nina Simon in The Participatory Museum in order to evaluate success.

Goals for Reference Services at Pearson Library

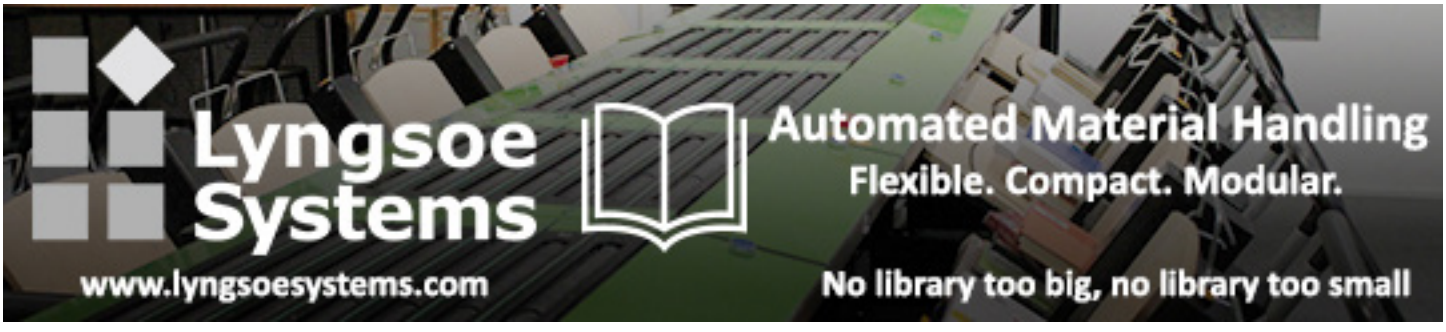
1. Establish an environment of intellectual curiosity and exploration at Pearson Library
2. Raise campus awareness of research resources provided by Pearson Library
3. Increase number of meaningful patron interactions at the reference services desk
4. Increase opportunities for experiential learning at Pearson Library
5. Increase opportunities for CLU community to share perspectives and experiences

An important part of setting up a framework for later evaluation was not just thinking about the goals for the service, but about how users would ideally be affected by interacting with us. These desired outcomes are admittedly lofty.

Desired User Behaviors and Outcomes

1. Learn more about research resources and effective utilization of these resources
2. Visit and use the Library more often, whether a student looking for research assistance, or faculty looking to support learning in their classroom
3. Perceive Library as a center for rigorous scholarship on campus
4. Perceive Library as a fun and approachable space for informal learning
5. Develop academic confidence and intellectual curiosity that leads to a life of learning outside the classroom

The plan was to transform the IC Desk into the "Collaborative Research Commons" and to think of reference services as operating not just from a desk, but as encompassing all of the space around it—including the glass atrium, mobile furniture, and exhibit furniture that was already near the desk. The desk itself was due for an upgrade so I proposed moving it to a slightly more central location (but in fact just a few feet away) and adding truly collaborative furniture around a mobile, U-shaped central desk



(See Figures 2 and 3).

The Collaborative Research Commons would both replace and enhance existing IC Desk services. Instead of being parallel to the Circulation Desk near the entrance to the library, the new Collaborative Research Commons would be located adjacent to the library's open-air central atrium, which could be leveraged as exhibition and workshop space. This is where I imagined that research would truly become visible. Students working in the space can be seen from all corners of the building and completed work can be hung on the glass. Aligning the new desk to this Idea Box-like space was central to the renovation proposal. The new area would feature a more open, approachable (and mobile) desk that faces approaching patrons coming in through the front doors. Optionally, a back-facing desk would face the general computer lab and serve as technology help, which did not have a public-facing desk in the library. Surrounding the service desk(s) would be four round tables (on casters) with seating for between four to six people each. These tables would serve small groups working together on projects, as well as space for longer research consultations with librarians. They would not have mounted computers (as in the existing IC Desk area), which impede mobility and effectively block communication between staff and patrons. Laptops, tablets, and other technology could be brought into the space if needed from the existing mobile lab. These tables could also serve small classes coming in to do research together, which until then had relied on rows of desktop computers in the computer lab.

By transforming the Information Commons into a "Collaborative Research Commons," which emphasizes the activity as opposed to the resource, we would be employing a "beta space" approach to reference services that encourages exploration of ideas and a cooperative learning environment based on social interactions and participatory practice. Including collaborative tables and exhibition space into the overall research space is a way of "envision[ing]... boundaries in more porous ways" (Rogers and Seidl-Fox, 2011). The space would become a classroom-like space outside of the traditional classroom allowing librarians to meet with students and faculty for research appointments, not tucked away in back offices, but at one of the round tables with a laptop, for example.

Now for the reality check. During the

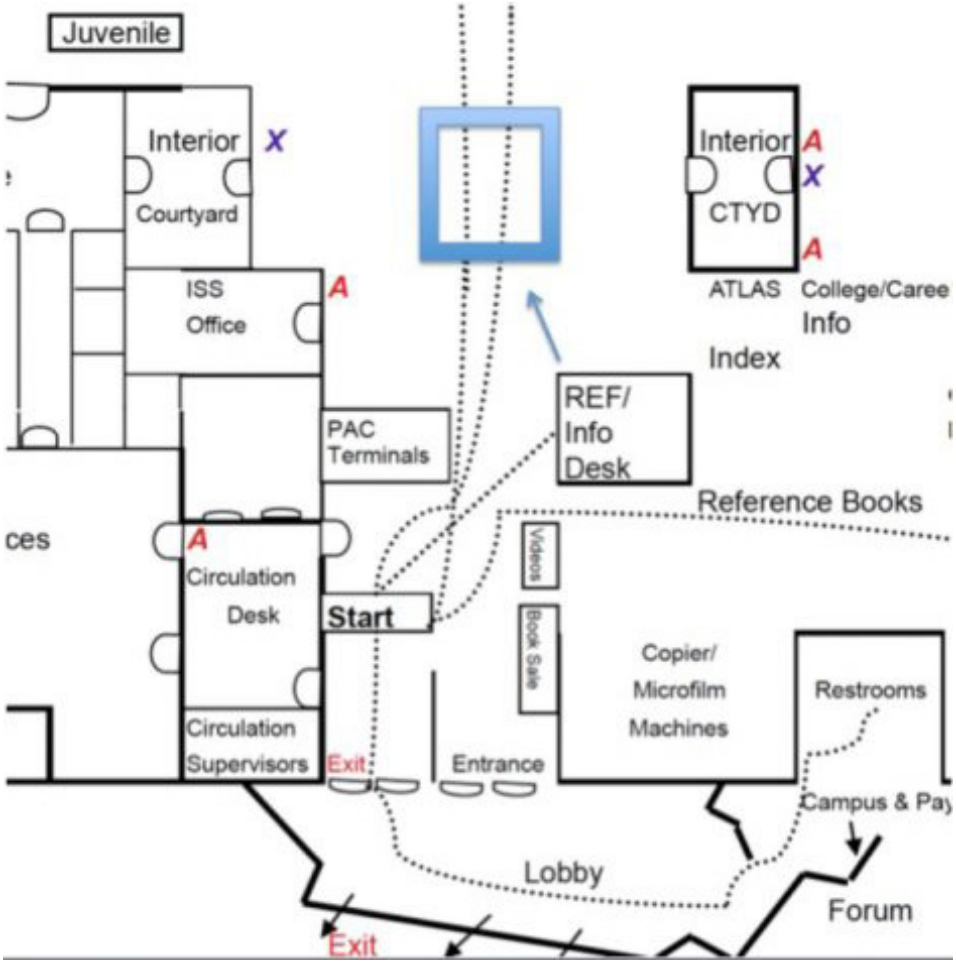


Figure 2: Proposed relocation of the "Collaborative Research Commons.

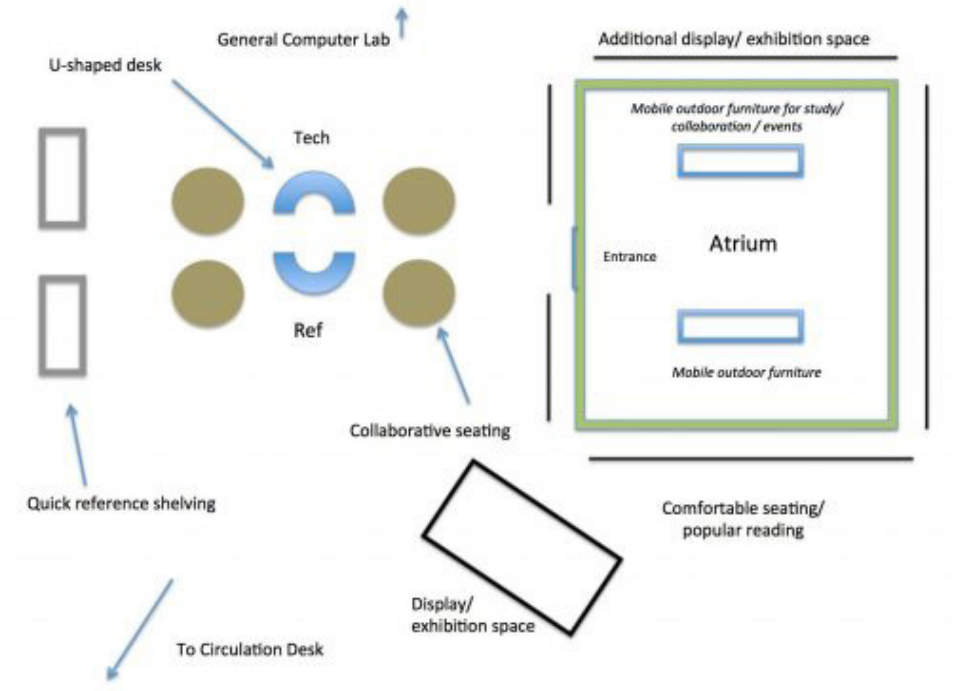


Figure 3: Proposed floor plan for the Collaborative Research Commons.

2014-2015 academic year, we were not able to realize the physical transformation of the space through renovation, though library administration approved of the ideas and design consultants were brought in. The money just wasn't available that year. But we ran a series of successful programs that demonstrated the potential of the beta

Figure 4: Hanging the Islamic Calligraphy Show on the atrium windows in 2014.

reference space and generated new energy around reference services as the central arm for outreach and research support (as opposed to access services or information literacy instruction). In our first event, the atrium windows were used for the first time as gallery space for a student exhibition of Islamic Calligraphy and a small reception was held adjacent to the IC Desk in December 2014 **(see Figure 4)**. Students and faculty came to speak about their work learning a new language and artistic technique through experiential learning in this calligraphy course.

The following semester, the space was used to display erasure poetry made from weeded library materials by staff, faculty, and students. The atrium hosted two creative writing classes in which students added their final products to both the atrium's windows and to the April National Poetry Month display, and were assisted by reference staff as they navigated the exhibit space and selected source material for their poems. The IC Desk also served as a stop for a poetry prompt station (staffed by the same faculty member who brought her creative writing classes into the atrium) where library visitors also had an opportunity to add their work to the display.

The events we held that year in the atrium and space around the IC Desk may or may not have happened regardless of the strategic plan for reference services. But we were intentional in making the (in this case) creative scholarship visible and placing these creative activities around ongoing reference activities at the services desk. Physical transformation of the space as proposed would help to cement the connection between the process of research and the resulting scholarship on display. Going forward, we would need to expand beyond art and poetry in order to truly align reference activities to the generation of new scholarly ideas and demonstrate the value of reference services by highlighting evidence of learning outcomes, student accomplishments, and models for inspiring research projects. The official Collaborative Research Proposal included dozens of thematic starting-off points to generate research ideas and pull in work from ongoing courses with amenable faculty members in a range of disciplines. Ideas included inviting campus wellness center staff to serve as "reference librarian for the day" during Health Awareness Month in January with interactive displays and resources on health topics; a "blind date with a book" display with a table set up for users to write Valentine's Day love notes to their favorite books during February; and a mobile technology workshop with resources on creating short videos on tablets and iPads with an option to play the films on screens mounted in the space.

The fact was that we tried these new programs in a fairly haphazard and difficult-to-assess way by making connections with faculty willing to experiment with new library spaces. We started to collectively think about the IC Desk as something more than a little desk with a bank of computers and more as the potential hub of the library. To truly assess the impact of the renovation and actual utilization of a Collaborative Research Commons, the following methods of assessment were identified as part of the proposal:

1. Measure and compare length and type of patron interaction taking place at reference desk before and after implementation of beta space project changes using LibAnswers Reference Analytics tool; align interactions with ACRL Framework as is currently done with information literacy instruction.
2. Include questions about awareness and effectiveness of environment and services in library survey deployed annually to students.
3. Offer short point-of-service surveys (such as reply cards) at time of patron interaction and/or program or event.
4. Measure attendance at programs and workshops.
5. As programs are designed, define intended learning goals; document evidence of student learning through collection of work and/or photographs of participation and work (such as collecting found poetry and taking pictures of exhibition space after participants have added their work to it).
6. Add a question about reference space to course evaluation for classes that utilized the space during the semester.
7. Over time, collaborate with the alumni affairs department to identify post-graduation activities of participants and their continued perceptions of the library after graduation.

Our work was decidedly beta. We tried something new and made some concrete proposals. Many libraries do the same kind of work and run the same kinds of programs that we did, but we placed these programs within the reference environment and linked the products of creative scholarship to the research process through physical association, and mindfully reconceptualizing the reference space as an informal learning environment founded upon experimentation. It is impossible to truly assess the success of what we did (beyond the communal

Figure 5: Students writing poetry inside and outside the atrium, our "Idea Box" of sorts at Pearson Library.

Figure 6: Adding new work to the April National Poetry Month display.

Figure 7: Students began to add their work to the atrium windows after writing poetry in a class session held in the atrium.

feeling that we were on to something) because the Collaborative Research Commons proposal wasn't actualized and the methods of assessment couldn't be tested. I left the Pearson Library the following summer and I know creative work continues to be done there, but I can't know for sure how much of the original proposal will be supported in my absence.

CONCLUSION

Questions have been raised about the value of reference services in the 21st century library. What value does it offer users? How are users engaging with reference spaces? Applying a participatory design model to reference services is an alternative to dismantling it all together or dispersing it to the point of invisibility. As libraries design and develop collaborative learning commons, digital labs, makerspaces, and beta spaces, why not centralize them around reference services. If these are the places where users engaged in new ideas and technologies really want to be, then what better way to facilitate new learning and guide the process than the physical and conceptual merging of beta with reference? In his 2009 article, "Libraries and Learning: A History of Paradigm Change,"Scott Bennett wrote the following in regard to library learning spaces designed in the 1990's and early 2000's:

> "Some features of a learning-centered design – with the generous provision of group study spaces and information and learning commons chief among them – are now regular features of library planning. It is far from clear that our concern with learning goes much beyond these features, however" (Bennett, 2009).

I believe that incorporating the ethos of the beta space into the library learning space, and placing reference services within this context, is a way to take this next step.

In my dream of dreams, academic reference librarians and subject specialists would not have offices deep in the back of the library building only to emerge for a couple of hours at the reference desk, but they would be permanently based out in the open—visible models for research and intellectual engagement in a user-driven, participatory environment like a beta space. Understaffing is likely to continue to be a problem for many libraries long into the future, and the beta space model is an experimental step towards blurring the lines between faculty office, classroom, scholar commons, and gallery. Librarians would not have static "shifts" out at a desk, or recede into the depths of an interior office to hold consultations. In the beta space model, there are opportunities to place librarians more permanently in public spaces by placing their offices within the space. This has the potential to relieve some of the pressure on reference librarians forced to bounce back and forth between office, desk, and classroom. It also has the potential to infuse reference services with subject expertise from teaching faculty, graduate students, and visiting scholars. It

could be a place where faculty or graduate "subject experts" could hold public office hours or drop-in research sessions, groups could engage in collaborative research projects, and technology experts could triage technology questions. These alternative activities keep the space alive even if there isn't a reference librarian on duty at a given time. Again, these things aren't necessarily new to reference services, and these activities may be happening in other parts of the library or across campus, but I see an opportunity to centralize these key learning activities around reference services.

In terms of curating the products of knowledge creation, our work at Pearson Library captured primarily examples of creative work—poetry, art, etc. But other examples could include collections of bound theses and dissertations, screens highlighting student and faculty work collected in institutional repositories, physical collections of student or community newspapers, campus journals, zines, or thematic user-curated displays of library materials. White boards, chalk-board paint, over-sized sticky notes, and tables topped with white-board surfaces are just some of the ways to collect the ephemera of the research process within the reference space. In addition, these activities support focus on student creation of knowledge as part of information literacy education as described in the ACRL Framework and have the potential to be expanded into a larger information literacy program in collaboration with other library departments ("Framework for Information Literacy for Higher Education"). Showcasing the work of student and faculty researchers provides a model and a shining light of what is possible. It is both inspiring and encouraging. When this is done in the active, participatory environment of the beta reference space, research is highlighted as both an end-goal and a process.

The heart and soul of reference services is the personal interaction between librarian and user, which is itself an entrypoint into intellectual discourse. As technology evolves, this interaction takes on many forms—it can be a telephone call, an online chat, an embedded classroom session, or a conversation while sitting in front of a computer workstation. Reference services is not bound by a desk, nor even by a room, but allowing the reference space to incorporate the elements of the beta space through display, participation, collaboration, and simple conversation, the "beta space" model positions reference services as essential to branding the library and facilitating an environment of intellectual curiosity and exploration. This might not work for every library—not everyone has a central atrium of course—but I truly believe in the value of reference services and in the value of the beta space. By merging the two, libraries offer a unique opportunity for user empowerment, demonstration of value, and research support. ■

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ABOUT THE AUTHOR:

Madelynn Dickerson in the information resources coordinator at Claremont Colleges Library.

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Designing the Library of the Future for and with Teens

» Librarians as the "Connector" in Connected Learning

BY MEGA SUBRAMANIAM

The emergence of newer technologies (e.g., ubiquitous computing, mobile computing, wearable technologies) has led to a "participatory culture," challenging the notion that there are designated experts who produce knowledge while the public consumes this knowledge. Through participatory culture and leveraging the power of newer technologies that have revolutionized the speed and capabilities of knowledge production and dissemination, the public can now be problem-solvers and experts themselves regardless of their formal education and training.[1] This participatory culture has also transformed learning, particularly in skills that are needed to ensure productive participation, such as collaboration, self-direction, systems thinking, information literacy, and design thinking.[2] The development of these skills among youth is challenging within the context of formal learning environments, such as schools, where learning is almost always in situ and normalized, whereas youth learn outside of school through interactions with their surroundings, community, peers, adults, and technology.[3] Unfortunately, in school classrooms students are often restricted from using these newer technologies due to the demands of the school curriculum, testing pressures, time limitations, malfunctioning equipment, stringent firewalls, and school policies that consider these technologies a distraction.[4] This results in a dichotomy that is often used in education and experienced by students themselves: the formal (in-school) and informal (out-of-school) learning, which many scholars acknowledge as a problematic distinction but one that is commonly used.[5]

The connected learning framework developed by Ito and colleagues elegantly unites these informal and formal learning pursuits by articulating a vision for leveraging networked technologies to promote learning experiences that are academically oriented, peer-supported, and interest-driven, as well as production-centered, openly networked, and grounded in a shared purpose.[6] This framework champions the use of emerging technologies to support connected learning by strengthening young people's access to knowledge and information, offering timely feedback and individualized and collaborative learning experiences, and linking youth to adult mentors who have expertise in an area of shared interest.

The *Future of Library Services for and with Teens* report calls for reimagining the position of libraries to promote the three spheres of learning (interest-driven, peer-supported, and academically-oriented) among non-dominant teens, as described in the connected learning model.[7] Public libraries continue to be a place whereby non-dominant teens can feel comfortable and are encouraged to explore networked technologies.[8] Non-dominant teens— who often come from low socioeconomic backgrounds, immigrant families, and minority groups—struggle to formulate the connections between these three spheres because access, literacy, and support from adult mentors are often lacking for them compared to their more privileged counterparts.[9] Teen librarians need to know how to work with youth from nondominant groups who need libraries the most.[10] To build teen services librarians' capacity to encourage connected learning among non-dominant teen groups, teen services librarians will need to offer programs and services that meet these teens where they are and inspire them to push their current boundaries of learning. Surveys, interviews, and forming a teen advisory council are no longer sufficient when designing teen programs. Instead, it is time to involve teens themselves as co-designers of programs and services. Teen services librarians need to apply interdisciplinary approaches to establish equal partnership and learning opportunities that facilitate discovery and use of digital media. Such approaches are informed by research, methods, and best practices in disciplines outside of library and information science.[11]

In this paper, I will provide a brief overview of connected learning, the radical changes that teen services librarians will need to embrace to be the "connector" in connected learning, and the theoretical underpinnings of participatory design methods that can be used by librarians with youth to ascertain equal partnership with teens. I will then discuss selected participatory design techniques that have been used to design learning technologies in the field of human-computer interaction, which in turn can be adopted to design library programs, spaces, and services to enhance connected learning programming and services in libraries.

LITERATURE REVIEW

Connected Learning in a Nutshell

The ways teens learn, what they want to learn, and what they have to learn to be productive members of society have changed significantly in the recent decade. With the need to master emerging literacies, learn and communicate via networked technologies, and the preference to learn via mentorship and peer support compared to direct instruction, teens' learning processes and preferences are constantly changing.[12] Ito and colleagues brought together these current trends in learning to develop a framework called connected learning, which they characterize as a framework "under constant development that offers principles and examples to be adapted and remixed rather than a template for programs and activities [for learning]," precisely situating the learning process that is experienced by teens in the digital and information age.[13] In other words, connected learning is not afforded by a specific type of technology genre or platform, but embraces learning using networked technologies. In their seminal article about connected learning, Ito and colleagues define connected learning as "learning that is socially embedded, interest-driven, and oriented toward educational, economic, or political opportunity."[14] Driven by the technological, social, economic, and cultural changes in the society, connected learning is driven by an "equity agenda" that focuses on increasing learning opportunities for non-dominant youth.[15] Interest-driven, peer-supported, and academically oriented are three learning principles of the connected learning framework. Each of the principles is briefly discussed below:

- *Interest-driven:* "When a subject is personally interesting and relevant, learners achieve much higher-order learning outcomes."[16] Personal affinity and engagement are the primary drivers for interest-driven participation. Ito and colleagues emphasize that interests can be developed and nurtured, in addition to teens' inherent interests, such as personal hobbies, media, and so on.[17] These interests and passions can be nurtured to allow the growth of diverse identities.[18]
- *Peer-supported:* "In their everyday exchanges with peers and friends, young people are contributing, sharing, and giving feedback in inclusive social experiences that are fluid and highly engaging."[19] Such smooth interactions are not only between peers but can be facilitated or mentored by an adult (e.g., parent, librarian, teacher, etc.).
- *Academically oriented:* "Learners flourish and realize their potential when they can connect their interest and social engagement to academic studies, civic engagement, and career opportunities."[20] Ultimately, teens learn the most when they are able to leverage their interests and connections for academic relevance.

The core properties of connected learning experiences are that they be "production-centered," with a "shared purpose," and be "openly networked."[21] Connected learning is "production-centered" because learners can utilize a variety of digital media tools to produce knowledge and cultural content through the practices of remixing and curation. It has a "shared purpose" because learners unite through shared goals and interests, creating cross-cultural and cross-generational learning. "Openly networked" refers to "online platforms and digital tools . . . [that] . . . make learning abundant, accessible, and visible across all learner settings."[22] While connected learning is applicable to any age group, Ito and colleagues explicitly point out its relevance to teens because the teen years are a "critical time when individuals form interests and social identities that are key to the connected learning model."[23]

RADICAL CHANGE IN THE APPROACH TO PROGRAMMING

To be the "connector" in connected learning, teen services librarians will need to fundamentally change the way they work with teens and how they offer programming for teens at their libraries. In order to realize connected learning in libraries, teen services librarians must acknowledge that teens have their very own interests and desires that deserve valid attention. It is imperative that teen services librarians understand these interests by intentionally talking to teens about their interests, listening to them, facilitating non-dominant teens to voice their opinions, and reflecting on their roles and positions as they engage in these conversations with teens.[24] To transition to these new roles and practices successfully, a radical change in the way that librarians work with teens is warranted to ensure that teens are equal partners in designing programming and services.

To explain this transition, I build upon Radical Change theory, developed in the 1990s by Dr. Eliza Dresang. Originally intended to explain changes evident in the Black and White picture book (winner of the 1991 Caldecott Medal), Radical Change theory over the last decade has been expanded to explain digital age books and digital age youth information behavior.[25] The theory has been acknowledged as being robust in terms of interpreting and predicting youth-related phenomena. Radical Change theory is rooted in the digital age principles of interactivity, connectivity, and access. Interactivity refers to "dynamic, nonlinear, and nonsequential learning and information behavior" that can be controlled by youth.[26] Connectivity is the change in perspectives encountered by youth as they interact with their community and construct meanings of their social worlds. Access refers to penetrating "information barriers, bringing entrée to a wide diversity of formerly large inaccessible opinion."[27] I utilize these digital age principles to establish three types of changes that librarians will need to embrace when working with teens in designing library programming and services, resulting in a typology of radical change (modeled after Dresang and Koh's approach in 2009[28]) as presented in **Table 1**.

Type 1 refers to the need to change forms of esngaging with teens to obtain their thoughts and feedback on teen programming and services in libraries. To capture the voice of teens—and especially non-dominant teens who may potentially benefit the most from library programming and services—we need to devise participatory design methods to create programs for and with them. Type 2 refers to the need to change teens' views of librarians and libraries. Librarians need to be ready and willing to transition from expert to facilitator, engaging in active and continuous learning for and with teens to "re-imagin[e] services and spaces."[29] Teen services librarians will need to design programs and services that appeal to every culture and every teen year-round, not only seasonally. Having poetry-related activities solely during National Poetry month or having programs that appeal or appreciate African American culture exclusively during Black History month is no longer acceptable. Additionally, libraries can no longer simply emphasize their book collection alone or have programming solely based on book-related activities. Books are just one of many media types that teens are interested in; their ecology of learning is expansive and includes technology,

movies, music, and so on. Type 3 refers to changing the boundaries of youth engagement to extend beyond the library building and its resources. Librarians can no longer quantify the success of their libraries based on how many books or resources have been checked out or the number of teens entering the doors of their libraries. Librarians need to develop dynamic community partnerships that reach beyond the library, specifically "building partnerships and collaborations in their communities."[30] Youth learning is boundless and centered on relationships—relationships between teens and library staff and between teens and the broader community. These relationships result in connections that allow libraries to create an evolving collection of programs and services that meet the requirements of individual teens and teen groups at any moment of need.

Table 1: Radical Change Typology: Digital Age Teen-Librarian Engagement

RADICAL CHANGE TYPES	QUESTIONS	CHARACTERISTICS
Type 1: Changing forms of engaging teens	How do teens voice their interests and passions?	• Obtaining teens' voices through participatory design • Adopting interdisciplinary approaches to capture teens' voices • Being aware of methods and techniques to work with nondominant teens
Type 2: Changing perspectives	How do teens view libraries and librarians?	• Transitioning librarians' roles from experts to facilitators • Expanding the ecology of learning in libraries beyond books to digital media and social networks • Developing programs that appeal to every culture, every teen, year-round
Type 3: Changing boundaries	How do teens connect with everyone around them—their peers, their family, their librarian, and their community?	• Strengthening relationships that empower learning within • and outside of their • communities • Expanding "library learning" to places beyond the library such as home, school, community, etc.

PARTICIPATORY DESIGN METHODS

While the characteristics of forms and perspectives of teen-librarian engagement in the digital age as seen through the lens of Radical Change theory **(see table 1 above)** may seem avant-garde in librarianship, such an approach to engaging users has been utilized for decades in the design of technologies for adults and young people. Participatory design had its beginnings in Scandinavian countries, specifically incorporating workers' voices into the shaping of work environments and technologies.[31] From its humble beginnings in work environments for adults, techniques used in participatory design have taken various forms, names, and contexts, including expansion of use to include children in the design of technologies as co-designers and not just as users. Druin describes the distinctive ways that children can play a role in the design of technologies—in a range from low to high involvement.[32] These roles rest in a continuum that describes the nature of the child's participation from *user* to *tester* to *informant* to *design partner.* Fails, Guha, and Druin indicate that "as [a child] moves along the continuum, the role encompass[es] those at the less involved level."[33] While the roles that children play in the design of technologies can be any one of the above-mentioned roles, the most involved role is the role of children as design partners. Since 2000, the idea of children as design partners has been the most widespread as compared to the other roles that children can play in the design of technologies. In this design partner role, "children become equal team members and stakeholders with adults. . . . [A]dults and children work as teammates in technology design."[34] Researchers have found that involving children in the design of technologies for children results in ideas and technologies that go beyond the concepts that adult researchers think of themselves.[35]

While participatory design methods and techniques are used in areas such as finance, broadcasting, and psychology, a close examination of these articles reveals a strong theoretical origin and practice in participatory design research in human-computer interaction. There are several participatory design methods for designing technologies with and for youth, including bluebells, bonded design, and cooperative inquiry. In the bluebells method based on British playground games, articulated by Kelly et al., children between the ages of 7 and 9 engage in the design of technology utilizing the "play" metaphor.[36] Adopting a more serial approach to design, adults work together to design the system *before* play, followed by children engaged during play, and concluded with adults engaging in the design process *after* play. The "play" here

refers to the stages of the actual design process. During "play," children participate in four different activities named after playground games that are directly related to a part of the technology that is being designed (i.e., the context, the content, navigation, and the interface). Adults observe children during play, and then discuss their observations and analyze the artifacts after the play.[37] In the bonded design method, children between the ages of 11 and 12 work together with adults frequently over a short period of time (i.e., a couple of times per week for six weeks) on a single project. In addition to being engaged for only a certain stipulated time period, children are not equal design partners, and their roles lie somewhere between being the informant and partner of the design process.[38]

There are three reasons why the cooperative inquiry method is particularly relevant to teen librarianship: (1) It can be used and expanded to work with children and teens (ages 5–17), whereas the other participatory design methods are typically used in working with children (typically 7–12 years old); (2) cooperative inquiry emphasizes building and sustaining the design partnership between adults and the children/teens on a longer-term basis (not a one-off) that spans across multiple collaborative projects, which is ideal in a library environment, where teens and librarians regularly see each other and have a sustained relationship; and (3) children/teens are equal partners throughout the design process, actively involved in technology design from conception to completion and are not just product testers alongside adult designers.

The goal of cooperative inquiry is to use a wide variety of ideation and evaluation techniques so that children, teens, and adults can share ideas in ways that maximize idea elaboration yet minimize differences in age, ability, and communication styles. Some techniques may need to be modified to accommodate developmental differences among different age groups (e.g., teens may ask for more structured design prompts; preschoolers will need help collaborating).[39] A cross-comparative analysis of these above-mentioned participatory design methods is further detailed in Fails, Guha, and Druin.[40] Techniques associated with each of these above-mentioned methods have been utilized to answer various technology design questions in the human-computer interaction field.[41]

To be able to realize the three learning principles and three core properties of connected learning in the library, librarians must attempt to achieve all three of the Radical Change theory characteristics listed in **table 1**. This can be done by leveraging the techniques associated with participatory design methods to design programming and services for and with teens.

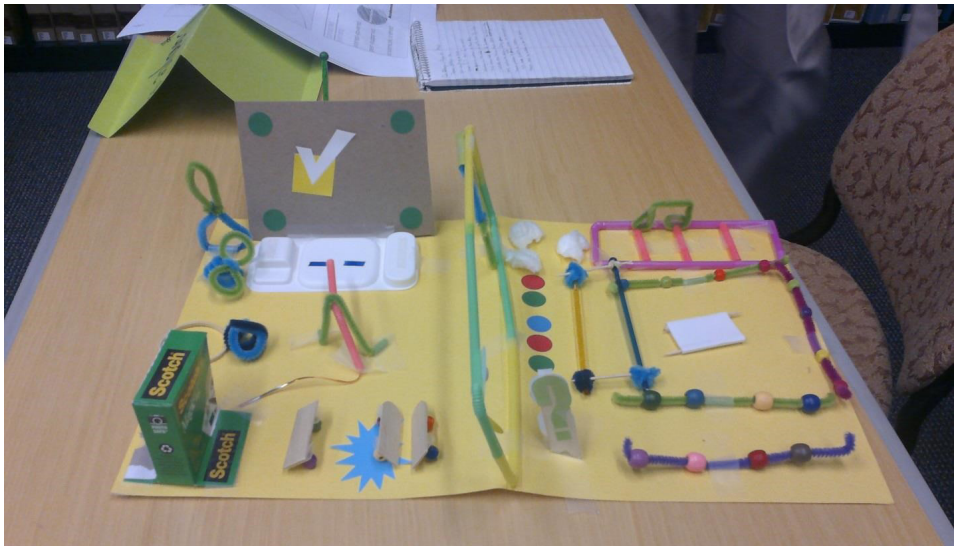

Figure 1: A Library Teen Space Designed Using the Bag of Stuff Technique

OBJECTIVES

As mentioned earlier, the cooperative inquiry method is the most relevant participatory design method for teen services librarians. Thus, the objective of this paper is to explain selected cooperative inquiry techniques that can be utilized by teen services librarians and to suggest potential scenarios whereby teen services librarians can adopt these techniques to increase teen librarian engagement as indicated in **table 1**.

METHODS

A thorough examination of a decade's worth of research literature on cooperative inquiry techniques (2005–2015) yielded twenty-three peer-reviewed articles and conference papers from the human-computer interaction field that clearly indicated the use of one or more cooperative inquiry techniques. Five- or ten-year spans are relatively standard for analyzing methodological trends of specific domains.[42] These peer-reviewed articles and conference papers explain one or more of the following: the foundation for the cooperative inquiry method, a selected cooperative inquiry technique or techniques involving children/teens in the design of technology or learning programs, and an extended explanation of the choice of cooperative inquiry technique in the design of specific technologies and learning programs (beyond simply saying that they used a selected technique). All these articles focus on children and adolescents between the ages of 5 and 17 years old.

FINDINGS AND DISCUSSION

In this section, I will share five cooperative inquiry techniques that have been predominantly used in the human-computer interaction field to design technologies and learning programs with children and teens. For each of these techniques, I will describe the technique, how it was used, and how teen librarians can use it when working with teens.

BAGS OF STUFF

The formal name for this brainstorming technique with youth is *low-tech prototyping*, but it is fondly referred to as bags of *stuff*.[43] With the primary goal of creating multiple solutions to an early stage design problem, groups are formed with a balanced mix of adults and children/teens (2–3 young people with 2–3 adults).[44] A problem is presented to the large group, and then each group receives a "bag of stuff," which has arts and crafts materials, such as construction paper, crayons, glue, tape, scissors, yarn, cotton balls, and so on, as well as "found objects" like leftover Styrofoam packing, wine corks, old LEGO pieces, small boxes, etc. Depending on the nature of the problem, appropriate three-dimensional materials (e.g., matchboxes to represent computers, or bells and noisemakers to represent auditory objects for an audio project) are also provided.[45]

Using the materials provided in the bag,

each group brainstorms a solution to the problem and designs "low-tech" prototypes of their solution. Due to the nature of low-tech prototyping and because adults are working collaboratively with youth, adults must also pay attention to the verbal conversations that happen in the group and take written notes to ensure that the discussions and elaboration of the solutions are not lost in the representation of the artifact or solution produced.[46] Typically, one adult is also designated to be a floater who moves from one group to another to obtain a sense of direction of the conversations and solutions in all groups. After the low-tech prototypes are created, each group presents their ideas to one another. The floater adult will take notes on a whiteboard, writing down the major ideas that emerged during these presentations. As each team presents, any ideas that are surprising, most repeated among groups, or that receive the most reaction from the whole team are documented on the board. After the presentations, the adult team members discuss these ideas and decide which one(s) to pursue.[47] This brainstorming technique has been successfully used in the design of many innovative technologies, such as Tangible Flags and Mobile Stories.[48]

Teen librarians can adopt the bags of stuff technique in the design or redesign of teen spaces at their libraries. Whether they are designing makerspaces, learning labs, learning commons, or teen workspaces, librarians can engage teens in representing their ideas visually by using this technique. Librarians can prepare appropriate "stuff" for the bags based on the problem that is at hand and collaborate with teens to come up with excellent practical designs for their physical spaces. Additionally, because this technique has been used in the design of technologies for children, librarians can also use this method to design virtual spaces for teens that are associated with the library, such as library web pages that are dedicated to teens or other peripheral technological services or virtual spaces provided by the libraries exclusively for teens.[49]

MISSION TO MARS

In Mission to Mars[50] (inspired by the brainstorming technique of fictional inquiry), teens interact with "Martians" who are adults. The "Martian" adult will be in a different room than the teens, but will be able to communicate via video-conferencing technology such as Skype, Google Hangout, and so on. The "Martian" adult will initially broadcast a message in the form of asking for a potential solution or providing a prompt to the teens. Then the Martian can opt to go offline or stay online, and the teen design partners work in small groups on solutions to the prompt or problem that the Martian has presented.[51] The brainstorming time given to the teens ultimately depends on the nature of the problem presented and the time that the teens and adults can allocate to this technique. The session culminates with each group of teens presenting their ideas to the Martian. The "fictional" part of the inquiry is the use of the "Martian" concept, which allows teens to be more open, honest, and descriptive because they are creating an idea for a "Martian" rather than a human adult or librarian. The adult designers take notes or view the recordings of the video to amass the big ideas that were presented by the teens.[52, 53]

Figure 2: Layered Elaboration Technique. Photo credit: Kidsteam, Human-Computer Interaction Lab, University of Maryland

Teen librarians can utilize this technique in the design of programming and services that they intend to offer to teens. The key is in the articulation of the problem or prompt by the "Martian." This technique is perfect for exploration of novel ideas or adoption of new technologies or trends in the library, whereby the teens will need to explain in detail to the Martian how they would like a technology or innovation to be deployed at the library. For example, the Martian can provide the teens with the following prompts: "For the first time ever, Mars is about to explore gaming in our libraries. How do we design our library space so that teens come to play games with each other at the libraries? What gaming application, accessories, and support should we provide? How can we launch this new gaming initiative in a way that the Martian teens will actually come and play games at the library?" The gaming example provided here can be replaced with any other new genre of learning or innovation.

LAYERED ELABORATION

Fails, Guha, and Druin indicate that youth are oftentimes uncomfortable messing with or ruining the work of other youth and adult design partners. "Even if the work in question is a low-tech, initial, brainstormed prototype, designers, especially youth design partners, can be sensitive to changing the work of others."[54] Hence, the *layered elaboration* technique works well because it allows designers to elaborate on ideas by changing, extending, adding, and/

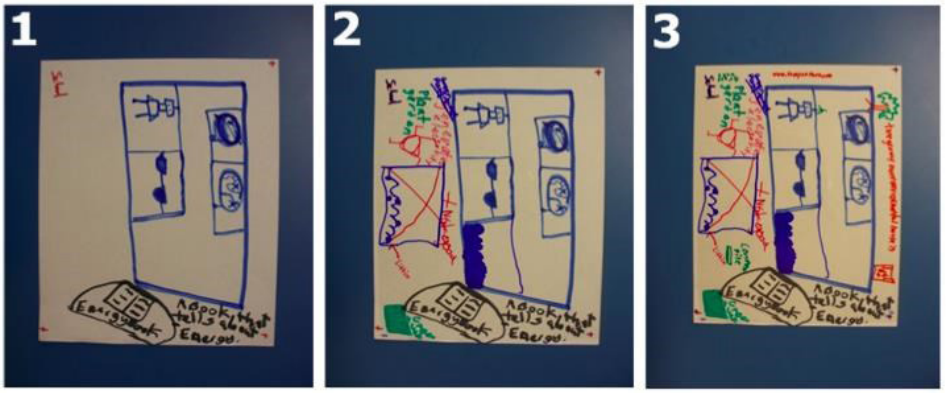

Figure 3: Big Paper Technique. Photo credit: Kidsteam, Human-Computer Interaction Lab, University of Maryland

Figure 4: Sticky Notes Clustered into Themes on a Whiteboard. Photo credit: Kidsteam, Human-Computer Interaction Lab, University of Maryland

or eliminating the ideas of others without killing the original ideas or ideas that are thought of throughout the process. To begin, teens in a whole group are provided with either a base design, or they can design from scratch.[55] In small groups, teens sketch their designs using permanent markers on plain white paper attached to clipboards. In a dedicated interval of times (typically every 15 to 20 minutes), all groups come together for a meeting where each group briefly presents their ideas. These large group meetings allow elaboration on the designs so that the next iteration can occur. After the first large group meeting, the first iteration of the idea is then transferred to a clear transparency film and passed to one of the small groups. This group places a clear overhead transparency on top of the initial idea and adds their ideas to the initial storyboard. This process is repeated until each group has had an opportunity to include their design ideas. In this way, all changes are layered, and any elimination is indicated by crossing out ideas. A final debrief meeting is held after all groups have had a chance to provide their design ideas. During the debriefing, an adult design partner will capture the big ideas on a whiteboard or a large sheet of paper. The layered elaboration technique has been successfully utilized in the design of screen-based media.

Teen librarians can utilize this technique for the design or redesign of physical or virtual spaces at the library and/or web pages. Due to the nature of teens' visits to libraries that are on a drop-in and unstructured manner, teen services librarians can adapt this technique to work with groups of teens who visit the library at different times to build on each other's ideas. In this way, teen services librarians can also take note of the different ideas that originated from teens with varying interests and consider their preferences in the design of physical and virtual spaces. Additionally, this method can be used when teens are collaboratively designing a station in a makerspace, designing and building an artifact for the community, designing the display of collections at the library, and so on.

BIG PAPER

The *big paper* approach is a two-dimensional brainstorming technique that allows teams of adults and teens to "collaboratively work on one idea" using a large piece of paper that is placed on the floor or on a table.[56] Instead of using small sheets of paper, brainstorming uses large sheets of paper, which allows design participants to gather around one workspace, and hence provides adult and teen design partners an equal voice in the generation of ideas. To facilitate discussions, adult designers can divide the large sheet of paper into three sections: What, Why, How; these will allow teen co-designers to sketch out their questions, challenges, and design ideas.[57]

Teen librarians can utilize this technique for the design of an entire arc of programming that they would like to offer for an extended period of time. Librarians can provide teens with general or specific genres such as gaming, fan fiction, science-infused movies, superheroes, sports, music, fashion design, and so on, which will allow teens to come up with their own programming and activities centered around these genres.

STICKY NOTING

Used primarily for evaluation of certain products or services, sticky noting is a rather simple cooperative inquiry technique. In designing technologies, teens use sticky noting to evaluate an existing technology or critique a prototype that is under development (either working or low-tech prototypes).[58] For this technique, pens/pencils and sticky notes (also known as Post-it notes) are needed. All adults and teen design partners use or view a technology and begin writing their likes, dislikes, surprises, and design ideas on the sticky notes. The rule of thumb to remember in the execution of this technique is that each like, dislike, surprise, or design idea must be written on a separate note. As the notes accumulate, adult design partners will typically gather them all and stick them on a large wall space or whiteboard. One adult design partner (or sometimes two) will group the sticky notes into categories (likes, dislikes, surprises, design ideas) and subcategories (thematic elements that emerge within the larger categories, such as navigation, look and feel, color, etc.). Typically, the whole group will come stogether at the end of this exercise to discuss and review the themes that emerged. This results in an informal frequency analysis that points to the fertile direction of the next iteration of the technology. This evaluation technique has been successfully used in the design of many innovative technologies, such as the International Children's Digital Library, the I'm Going Bananas game, and ScienceKit.[59]

Teen librarians can utilize this technique to evaluate the design of existing physical or virtual spaces at their library, programming, and/or services. Additionally, they can sketch prototypes of new physical or virtual spaces at their library or the library programming and obtain feedback from teens at any stage in the development.

CONCLUSION

This article is one of the first to promote the use of participatory design techniques informed by research in other fields that can be adopted by teen librarians, particularly in capturing youth voices. While it is not meant to be an exhaustive list of cooperative inquiry techniques, the techniques shared here shift the power dynamics in the library, from librarians being experts to taking on the role of facilitators and design partners. In order for libraries to be connected centers of learning and librarians to

be the connectors in connected learning, feedback from teens— whose needs and interests continue to evolve—is crucial to ensure that proper teen programming and services are in place for them. Almost all the questions posed in *The Future of Library Services for and with Teens*[60] to guide local assessment and planning can be answered by engaging teens using the cooperative inquiry techniques presented in this paper. Such equal partnership with teens in the design of teen-related services and programs will situate both teen services librarians and teens as equally responsible for the learning that happens in the library. ■

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ABOUT THE AUTHOR:

Dr. Mega Subramaniam is Associate Professor and Associate Director of Information Policy and Access Center (iPAC), College of Information Studies at the University of Maryland. She can be reached at mmsubram@umd.edu.

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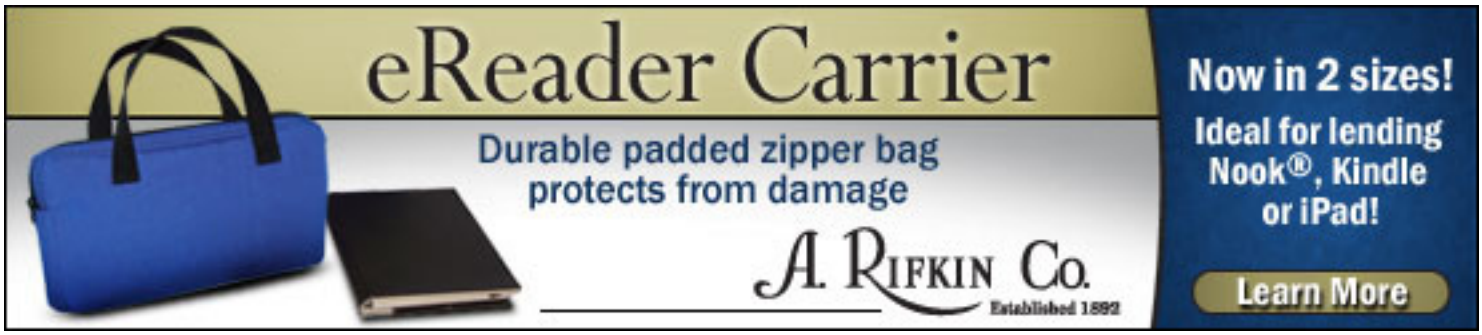

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59 Allison Druin, Benjamin Bederson, Anne Rose, and Ann Weeks, "From New Zealand to Mongolia: Co-Designing and Deploying a Digital Library for the World's Children," Children, Youth and Environments 19, no. 1 (2009): 34–57; Henry Been-Lim Duh, Sharon Lynn Chu Yew Yee, Yuan Xun Gu, and Vivian Hsueh-Hua Chen, "A Narrative-Driven Design Approach for Casual Games with Children," in *Sandbox '10: Proceedings of the 5th ACM SIGGRAPH Symposium on Video Games* (Los Angeles, CA, July 2010), 19–24; Jason Yip, June Ahn, Tamara Clegg, Elizabeth Bonsignore, Daniel Pauw, and Michael Gubbels, "It Helped Me Do My Science: A Case of Designing Social Media Technologies for Children in Science Learning," in *IDC '14: Proceedings of the 2014 Conference on Interaction Design and Children* (Aarhus, Denmark, June 2014), 155–64.

60 Braun et al., *The Future of Library Services for and with Teens,* 31–33.

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