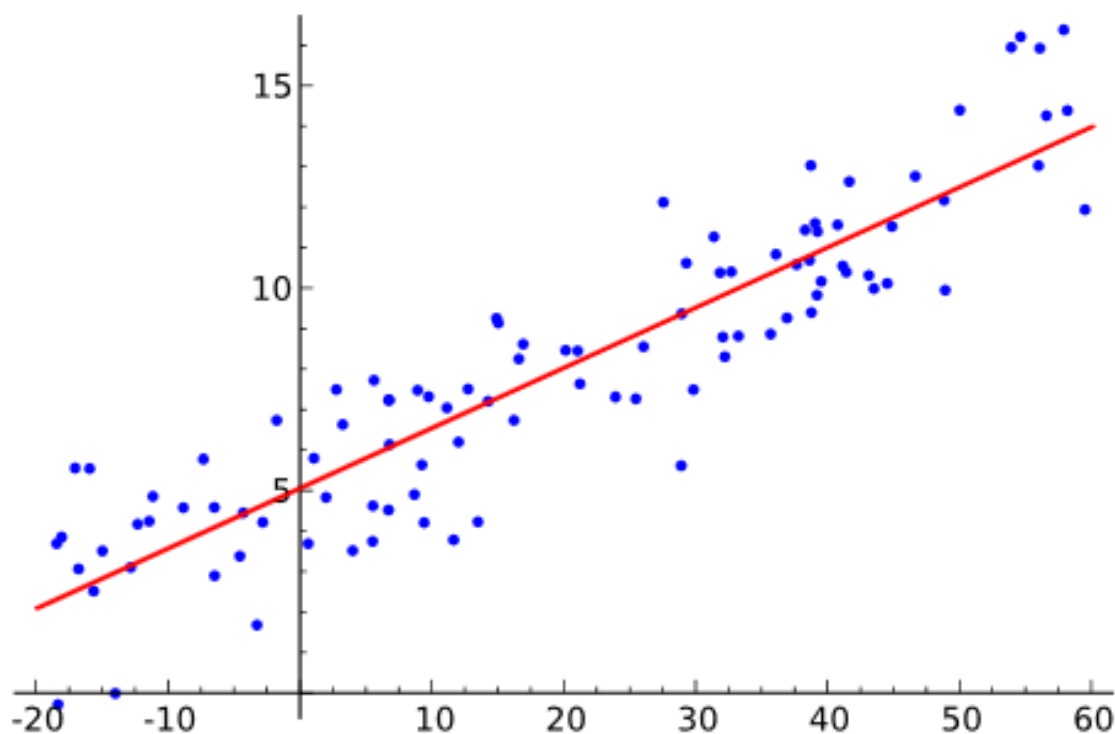


Volume 29, No 2
Fall/Winter 2017

Hypothesis

**The Journal of the Research Section
of the Medical Library Association**



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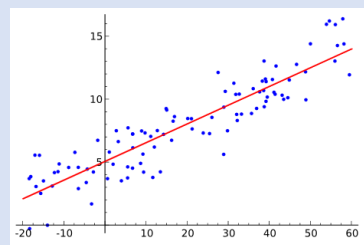
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About the Publication

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Submission Deadlines

Hypothesis is published online twice per calendar year: *Spring/Summer* with a submission deadline of April 15 and *Fall/Winter*, with a submission deadline of July 15.

Submission Criteria

To submit an article or other item for consideration, contributors should ensure that the following criteria are met. We welcome inquiries about possible submissions.

Reference Style

Hypothesis follows the [MLA Style Manual](#) for references. Consult [Citing Medicine: The NLM Style Guide for Authors, Editors, and Publishers, 2nd edition](#), for further information and examples.

Hypothesis content types

- Research papers -- peer reviewed
- Programs and/or projects (non-research) -- peer reviewed
- Other (e.g., announcements, letters to the editors) – reviewed by Editor(s)

Peer review is based on how well submitted work follow evidence-based guidelines for research, which will be made available on the [Research Section webpage](#). If you are a new researcher, you are encouraged to contact a research mentor through MLA (see *Professional Development / Find or Become a Mentor*, or <http://www.mlanet.org/p/cm/ld/fid=45>).

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What's our story? And how can you help tell it?

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Perhaps the most important goal of a publication is to clearly state its purpose. It's obvious in our journal's subtitle, but *Hypothesis* exists to provide Research Section and other MLA members with an outlet for research and research-related content, including works in progress, announcements, and other related content. Are we a younger sibling to the *Journal of the Medical Library Association (JMLA)*? Perhaps so, but what does that mean for MLA Members doing research? We hope it means that you understand this is *your* publication, here to enhance our shared aims through conversations about all aspects of research. We're here for research articles, but also for poster abstracts, articles about doing research (including failures, explorations of research methods, continuing education about research... and so much more). We're here to celebrate successes and share funding opportunities, too. Consider this your invitation to join the *Hypothesis* conversation and help shape our future direction!

To help with that, we are thrilled to announce a new submission process and platform, beginning immediately. You can now submit articles and other content using the Socius platform; this system is in beta so we appreciate your help (and patience!) testing it with your submissions: <http://www.mlanet.org/e/sx/eid=70>. We've also set up an evidence-based 'checklist' for authors to use that should help you review your work before you upload it, which will be available soon on the [Research Section webpage](#). In addition to the new submission system, you may have noticed our updated publication information on page 3 of this issue. It

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Perryman and Foster

includes an expanded list of where *Hypothesis* is indexed, new submission deadlines for our biannual issues, our copyright statement, and more details on the types of content we accept plus the level of review they receive. This information will soon be listed on both public facing and members only pages of the Research Section's webpages on the MLA website. Please do not hesitate to get in touch with questions about possible content or other issues at our new *Hypothesis* email address, mlarshypothesis@gmail.com.*

So what's our story this issue? Our content kicks off with a welcome from Michelle Bass, current Chair of the Research Section, in which she has a specific ask for Research Section members who have served in section leadership positions over the years. Our articles include project work by MLA's Rising Star 2016-2017 cohort to, "provide MLA leadership and the Communities Task Force with actionable recommendations to support the changing needs of its members" as those needs relate to MLA Section & SIG memberships. This is followed by an article discussing the work of the University of the Pacific's Rite Aid Information Commons to host an in-house art show made possible through partnership with their institution's Thomas J. Long School of Pharmacy and Health Sciences. From there, we move to Research Section news with Kimberly R. Powell – recipient of a Research Section stipend to attend the 2017 "Librarian's Role in Reproducibility of Research" Symposium – giving a wonderful summary of the symposium and highlighting key takeaways on reproducibility and transparency. We round out with a listing of Research Section members' papers and posters that received awards at MLA 2017 – congratulations to all first place, second place, and honorable mention recipients!

Finally, what's coming up content-wise for our Spring/Summer 2018 issue? Well, we need your help with that! Are you a hospital librarian? Or do you collaborate with hospital librarians? We'd love to have our first issue of 2018 focus on the great research and/or project work done in this area of medical librarianship. Have something you'd like to share? Send it our way using our shiny new (beta) system: <http://www.mlanet.org/e/sx/eid=70>.

Until next time - cheers and happy new year!

Carol & Erin

* Immeasurable thanks to Margaret Hoogland and Kate Corcoran for their input and hard work in updating webpages and setting up the submission site. We appreciate your help in making *Hypothesis* a better publication!

Welcome from Research Section Chair (2017-18 term)

Michelle B. Bass, PhD, MSI, AHIP

Population Research Librarian

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I'm fairly new to the Medical Library Association (MLA) as my professional organization home but I was not shy about looking for ways to get involved. I joined as a student member in the fall of 2013 as I began my two-year assistantship at the Taubman Health Sciences Library at the University of Michigan in tandem with my Master of Science in Information degree at the University of Michigan School of Information. I was honored to be selected as an MLA "New Voice" at the 2015 Austin meeting and took this as my cue to become more involved, and served as a member of the Research Imperative Task Force to populate the forthcoming Health Sciences Librarian Research Guide page on the MLA Advocacy website. I was also encouraged by my colleagues at Taubman, many of whom were active in the Research Section, to run for a leadership position. I did and here I am.

My new leader status has left me a bit unsteady on my feet as I try to figure out what I should do as Chair and brainstorming what I could do as an organization leader. A main goal of my term as Chair of the Research Section is the production of a section procedure manual with delineation of roles and responsibilities for leadership positions as well as serving to guide the continued publication of *Hypothesis*. I thank the current members of the Research Section Leadership team for working with me on the manual and would like to further extend this call to the membership. Have you held an elected position in the Research Section? Did you work on *Hypothesis*? Do you have your notes? I'd love to hear from you to add your knowledge to the manual for future leaders to reference as we continue to expand the impact of the Research Section in the organization. Please contact me by email (michellebbass@stanford.edu) and we can set up a time to chat or, if you're in the Bay Area, I'm also open to field trips to meet in-person.

Guest Editorial

Bass

Looking forward to a strong slate of programming from section members at the 2018 Annual Conference!

Sincerely,

Michelle B. Bass, PhD, MSI, AHIP

Rising Star Research Projects 2016-2017

Stevens, Nguyen, Lerner, and Jo

Rising Stars Research Projects 2016-2017: Action Research to Improve MLA's Communities

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Introduction

Started in 2010, the Medical Library Association's (MLA) Rising Stars program has provided early career librarians with valuable leadership training. The 2016-2017 cohort of Rising Stars had a unique opportunity to experience a significant update of the program that included

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projects based on one initiative, MLA's Sections and Special Interest Groups (SIGs), as MLA notes that less than half of MLA members belong to a Section or SIG. By concentrating the Rising Stars' efforts in one general area, the project results were designed to inform larger discussions within MLA on the role of Sections and SIGs and supplement the work of the Communities Task Force.

The heart of the Rising Stars program is the MLA Project [1]. The purpose of the 2016-2017 projects was to add value to MLA and provide real impact to the organization. Projects were presented to the cohort as a form of *Action Research*, a disciplined inquiry that allows one to examine their practices, learn from them, and take action to effect positive change within the context of their own environment [2]. The cohort was provided a template to help organize the elements of the proposed projects, from the rationale and background information to the implementation and assessment. The intent of the completed projects was to provide MLA leadership and the Communities Task Force with actionable recommendations to support the changing needs of its members. The projects and the efforts of the Task Force ultimately help MLA strengthen its communities, which is part of the organization's three year rolling strategic plan.

The four Rising Stars presented synopses of their projects in May 2017 to the Section Council at the MLA Annual Meeting in Seattle, WA. Following the presentations, the Rising Stars participated in breakout groups with the Section Council representatives to discuss how MLA Sections and SIGs could be improved to meet the needs of members. This article summarizes each of the individual Rising Stars projects, highlighting not only their work but also illustrating how these projects could potentially lead to more effective and meaningful MLA communities.

Assess the structure, procedures, and operation of the MLA Section Council and propose changes that better serve the Council purpose and enable it to determine if it is successful in realizing its purpose

Rachel C. Lerner

Section Council (SC) is comprised of 2 members of each Section in MLA - generally the Section chair and the past Section chair. With the current 21 Sections, SC is comprised of at least 46 members at any given point, including leadership positions. This research question could have taken a number of directions; however, it hinged on the stated purpose of SC:

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“The Section Council of the Medical Library Association provides an opportunity for Sections to participate more directly in the governance of the Association by serving in an advisory capacity to the Board of Directors of the Association. The Section Council also promotes interchange between Sections and, with its counterpart, Chapter Council, between Sections and Chapters.” [3]

As one of the main purposes of SC is advocacy for and governance of the Sections, Lerner began her project by reviewing all of the documentation surrounding SC activities in an attempt to discover what success might look like. After this period of review, Lerner focused on one aspect of success: using data to advocate and facilitate informed decisions. While individual Sections should not be directly compared with one another, there is value in understanding their long-term trajectories and efforts using a standardized set of data points. Synthesizing this information would aid in advocacy efforts for more money, time, etc. as well as help SC advise the Sections with up-to-date, easily accessible information. Additionally, because the Sections and SC rotate governance, centralized data collection and storage would facilitate smoother transitions for new leadership.

Objectives and methods

The research plan for this project was threefold: Lerner conducted a small qualitative survey of 10 years of past SC Leadership (n=4) followed by telephone interviews of key MLA stakeholders. Additionally, she conducted a retrospective analysis and annotation of three years of MLA Board and SC meeting minutes; and, finally, reviewed and parsed the activity data from four years of Section annual reports.

Results

The survey, which had a 75% (n=3) response rate, revealed the following: SC would like the ability to track Section membership and activity over time; they would like the learning curve for SC positions to be less impactful to the operations of SC; and they would like increased independence in decision-making processes. An interview with the then SC Chair followed, along with informational calls to the SC webmaster and the MLA Director of Membership and Information Services. These interviews helped to identify the information available for collection as well as the types of information that might be useful to SC. Information readily available included: section membership numbers, operating budget, number of online discussion threads, and total amount of money raised. Information that would be useful to

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collect and centralized included: number of awards given and to whom, number of special content sessions contributed to MLA annual conferences, number of nominations for chair and other positions, number of votes cast in elections, and number of MLA news items and Full Speed Ahead items contributed. Some of this information is currently collected in the annual reports, but it is not centralized in one location. One would have to go to each report to gather the information.

A retrospective analysis and annotation of Board and SC meeting minutes revealed the type of information reported to SC, and in turn, what was reported to the MLA Board. Additionally, this study revealed what decisions were handled internally within SC, and which were brought to the MLA Board. Often, the Board would ask for more information or data before coming to a consensus. Finally, Lerner compiled and systematically reviewed the Section, SC, and MLA annual reports in order to identify the confluences and dissonances of year-end reporting data and formats, and to gather ideas for standardized metrics. She discovered that information was being reported inconsistently and in a variety of formats, without a centralized repository for all data.

Recommendations

In consideration of all information gathered and analyzed, Lerner proposed that SC create a “metrics dashboard” as well as a standardized metrics collection form. Lerner created a draft version of the dashboard for SC, which would be transparent to the membership and contain all data collected by Sections and SC in the annual reports. This dashboard would be treated as a living document, with yearly review of metrics to verify or determine continued relevancy. Considerable input and buy-in from SC would be required in order to implement a final version, including a brainstorming session wherein SC members would discuss specific metrics based on usefulness to both their Sections and the Council as a whole. Considerations would include selection of metrics to help leaders make decisions; those to share with the MLA Board; and those that could further demonstrate impactful execution of goals set forth in annual reports. With the exception of time costs and the expense of providing a location at an annual meeting for a brainstorming session, this implementation would be financially null. A potential quagmire might result from an inclination of Sections to compare themselves through quantitative metrics. This should be discouraged early and often, as each Section is unique in their operating costs, membership, and deliverables. It should be communicated that decisions are never made on numbers alone - they are just one point in a larger conversation. Implementing a

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standardized metrics form as an addendum to the current annual report template would be a fairly straightforward procedure. This form would not replace the current template; rather, it would augment what is currently used. This form would rely heavily on what is decided regarding the metrics dashboard, as all of the collected data would be included in the dashboard.

The purpose of SC is to advocate to the MLA Board of Directors on behalf of Sections, and to promote and serve the projects of the Sections. This project presents an opportunity for SC and Sections to enhance both their advocacy and decision-making through judicious use of data collected. Some, but not all, of this data is available through the MLA headquarters. Requiring each Section to complete their forms and then adding that information to a central repository will reduce redundant data collection efforts and allow for re-use by other interested parties. Finally, Section members pay to be involved, and a more in-depth reporting of Section activities as well as an increase in the transparency of those activities can demonstrate the value of their membership dues.

Assess the relevance of the current (Summer 2016) strategic goals of Sections to MLA members and the health information profession and propose an initiative to improve relevance

Tony Nguyen

At the time projects were assigned, MLA accepted a long-term strategic action plan in high priority areas due to the significant and meaningful impact to deliver on the mission of the organization. The 21 MLA Sections were tasked to develop one to three multi-year goals and two to four strategies to achieve each of these goals to support the mission of MLA and delivery of the organization's strategic plan. MLA provided Sections a template to utilize to assist with the creation of their goals.

Objectives

Nguyen focused his research on developing a process that simplifies methods for Sections to create strategic goals, improving their relevance to the MLA membership. Through these changes, Sections could increase activity within their membership, recruit new members to support the strategic goals, allow for cross-collaboration between Sections, and provide increased value to MLA members.

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Methods

Nguyen spent significant time reviewing the template provided by MLA to its Sections.

After contacting each of the Section leaders for their current strategic goals, he received 13 sets of goals from Sections (approximately 62%). After reviewing what was received, he identified that each section utilized different formats in their strategic goals. At the time of review, only 2 of the strategic plans followed the MLA current strategic plan structure (10% of all sections). In addition to reviewing all of the strategic plans, annual and mid-year reports from all Sections submitted since 2014 were analyzed in order to identify goals and strategies, and the Sections' public pages on the MLA website were explored to identify how they promoted their programs to MLA members.

Results

Upon review of strategic plans, annual, and mid-year reports, Nguyen identified similar interests, strategies, and goals from each Section. Unfortunately, Sections may be unaware of these similarities as they might not read these reports, creating a duplication of effort that could be solved through cross-sectional collaboration. Reviewing Section's public pages provided insight in how MLA members may perceive the activities and benefits of spending additional money to join. Of concern is that Section public pages do not showcase the benefit of spending additional fees on top of their MLA membership to join a specific Section aside from access to a member directory, forum, and possibly a newsletter. Members searching for value for their dollars may hesitate to spend additional money to join a Section without knowledge of the Section's activities that could be identified within the Section's strategic plan.

Recommendations

In light of these discoveries, Nguyen proposed that Sections might align their strategic plans more easily with MLA's strategic plan and submit goals in a more unified manner by utilizing an automated system. An automated system would help Sections add their goals, strategies, and objectives more easily, assign point of contacts for each activity associated, and give Section Council and MLA an opportunity to check up on and discuss the progress of specific activities. To assist with searchability, Nguyen suggests including options that refer back to a specific MLA goal the strategy would support. With updates and revisions planned for the MLA *Competencies for Lifelong Learning and Professional Success*, referring to these competencies

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may help showcase how the strategies would support the professional development of MLA members. With an automated system, the information will become searchable, increasing benefit to its membership. This would allow Section leaders and members to search and identify other Sections working on projects similar in nature to discuss collaboration. Finally, in order to help promote Sections and attract members, goals, strategies, and objectives made visible on the Sections' public pages would support increased membership and attract volunteers to help Sections achieve their goals by promoting current projects that may interest new members.

In consideration of the significant endeavor it would take to develop a database as described, potential challenges were considered that could be associated with implementation of the project plan. The first risk identified is the steep learning curve Section leaders may have in developing strategic goals aligned to MLA in general. As many members of the association may not be familiar with writing strategic goals, they may have difficulty developing strategic goals and may require training in order to write them. Training would need to occur regarding strategic goals, utilizing an input form, and utilizing a searchable database which may take significant time to implement. There may be projects that Sections do not want publicly available; for this, there would be an opt-out option. For a goal to be attractive to all members within the organization, it may be important to have goals and strategies that are visible only to Section members. These goals may be available in Section portals only available to members.

The project plan outlined provides an opportunity for MLA Sections to be more closely aligned with the organization's strategic plan. Additionally, utilizing a database to identify what other Sections are doing may help them learn from what others have accomplished or collaborate on projects with other Sections. By connecting Section goals to the public page, members will have an opportunity to understand what projects Sections are working on which may improve membership and volunteerism within the group.

Assess how well the topical coverage of MLA Sections and SIGs address the needs of MLA's primary audiences and propose an initiative to improve coverage

Phill Jo

The purpose of MLA Sections and SIGs is to represent subject expertise in certain topic areas and to build communities of members based on their interests and specialties under the umbrella of MLA. Individual members can join Sections and SIGs based on types of libraries,

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specific functions, and various purposes. Members can join multiple SIGs with no extra fees, and can join Sections by paying annual fees ranging from \$10.00 to \$20.00. MLA members can share and develop their knowledge and educational experiences by participating in Sections and SIGs, networking, and gaining leadership experience at the national level.

According to a membership data analysis for Sections and SIGs, only a small portion of MLA members participate in Sections and SIGs. As of September 2016, there were 21 Sections and 25 SIGs. Membership within Sections varied, ranging from 1% to 18% of the total of MLA memberships. Despite free membership, SIGs ranged from 0.4% to 7% of the total MLA memberships. Even though MLA offers Sections and SIGs on various topics and subject areas, less than 20% of MLA members join them.

Objectives and Methods

Based on the analysis of membership data, Jo sought to assess the relevance of topical coverage of Sections and SIGs to MLA's primary audience. In addition to a membership participation analysis, Jo conducted a short six question survey that was sent to Section leaders such as the chair, chair-elect, past-chair, secretary, and SIG conveners to assess the relevance of topic coverage and member satisfaction. The survey questions were sent to a total of 122 MLA Section and SIG leaders over a 2 week period in December 2016.

Results

Based on the analysis, the highest participation rate of a Section was in the Hospital Libraries Section (n= 587) representing 18% of total MLA members (n=3269). The Clinical Librarians and Evidence-Based Healthcare SIG had the most members (n=206), representing 6.3% of the total MLA membership (n=3269).

The survey response rate was 20% (n=25) for Sections and 8% (n=10) for SIGs. According to the survey results, 76% (n=19) of the Section leaders were satisfied with current topical coverage and its relevance to MLA; 80% (n=8) of SIG conveners answered that they were satisfied with the topical coverage. Respondents commented that topics were very similar between Sections and SIGs. They also mentioned that topics such as outreach, scholarly communication, research impact, emerging technologies, and instructional design need to be included in Sections or SIGs. The leaders consider joining a Section or SIG beneficial for individual members as it provides educational and funding opportunities, information sharing, networking, leadership, and

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professional development, while gaining knowledge on specific topics. Respondents shared potential barriers to joining Sections and SIGs as financial burdens, indirect benefits, lack of time, and being unaware of Sections and SIGs.

Respondents expressed that promoting the benefits and activities of Sections and SIGs is critical. While they mentioned that topical coverage is not a major issue, some commented that topics are overly broad, redundant, and mostly academic or institution-specific. One respondent said that some Sections and SIGs might consider merging since they cover similar topics. Another commented that “there are too many Sections and many SIGs could be covered by Sections.” Results also indicated that Sections and SIGs should focus on enhancing their current membership.

Recommendations

Based on the survey results and review of Sections and SIGs from the MLA website, Jo recommends making Sections and SIGs, along with their activities and accomplishments, more visible to MLA members through an improved presence on the MLA website. MLA members should be able to easily access the goals and benefits of Sections and SIGs. Virtual meetups and social media can be used widely for different purposes as well. It is also recommended that MLA host promotional sessions where Sections and SIGs can share their programs and activities and to have social events at annual meetings in order to increase their membership. Additionally, a suggestion is made to offer specific internal benefits to Section and SIG members such as providing free continuing education courses if hosted by a Section or SIG they are a part of, and giving members paper and poster presentation opportunities at annual meetings in relation to their Section and SIG. It is recommended that MLA conduct more detailed needs assessments and membership satisfaction surveys regularly to reflect the specific interests and needs of its members. In addition, MLA could provide discounted membership fees for those who are active and join multiple Sections; leaders of Sections and SIGs covering similar or overlapping topics could discuss either merging or collaborating with each other to develop activities of interest.

These recommendations come with limitations, as other factors are involved in the relevancy of Sections and SIGs. Even though many dedicated members consider Sections and SIGs as their “home” within MLA, many struggle with recruiting new members and maintaining engagement with current members. Active Section and SIG members have multiple roles in their own group

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and find it time-consuming to improve the relevance of their community to MLA members. Analyzing results from the survey indicates that Sections and SIGs are important as they bring a sense of community and belonging for members at the national level. They are a place to share information by asking and answering questions from colleagues interested in a similar topic. As the project discovered, it is important to examine the values and benefits of Sections and SIGs and to continually communicate them to MLA members.

Assess SIG membership requirements and guidelines and propose new requirements and guidelines

Gregg A. Stevens

MLA SIGs, as more informal bodies with no membership requirements or annual dues, are created to support specialty areas in librarianship. Because of their ephemeral nature and the changing popularity of some niche specialties, some of the groups have faced irregular levels of membership and participation in recent years.

Objectives

In his research on this assigned topic, Stevens focused on how SIGs could increase membership in order to make participation more valuable to all members and create more meaningful member experiences. SIGs might then be able to retain and add to their membership, increase activity, and ultimately provide greater value to MLA members.

Methods

In consultation with his project advisor, Stevens created a qualitative survey with five open-ended questions addressing SIG membership and activity. The survey was sent to the 38 SIG conveners, based on MLA records, in October 2016. Of the 38 conveners, ten responded to the survey (26.3%). At the time of the survey, 25 SIGs were in existence, accounting for 40% of the group responses. The responding SIGs included groups with membership levels ranging from 12 to 211 members (mean of 74.8) as of December 1, 2016. Group topical coverage for this cohort included groups formed around medical specialties (Chiropractic, Pediatric, Vision Science, Department of Veterans Affairs), facets of health science librarianship (Clinical Librarians and Evidence-Based Healthcare, Libraries in Curriculum, Outreach and Marketing, Resource Sharing), and social issues (Health Disparities, LGBTQ). Upon initial analysis of the results,

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Stevens contacted three conveners to arrange for follow-up interviews. Only one was available, and the follow-up interview was conducted by phone in December 2016.

Results

Analysis of the responses pointed to three main concerns. Six of the ten respondents (60%) expressed some concern over membership levels that were either flat or declining and many of the respondents indicated that they were unaware of any active recruitment or promotion to increase membership in their groups. The convener of one group stated that the group's membership declined by about 75% after MLA switched to the Socius platform in 2015, which blocked SIG participants who were not active MLA members. Secondly, the majority of the SIGs reported that they are not active outside of the annual meeting (60% of respondents), so the value of these groups to its members is limited. Finally, half of the respondents (50%) mentioned the potential for greater participation in the groups through the use of technology. One idea mentioned by many respondents was to hold online meetings, which would allow members unable to attend the MLA annual meeting to participate in the group's activities virtually.

Recommendations

Based on these responses, Stevens created a two-fold pilot project proposal to address both the low membership levels and participation. The first part of the proposal involves the creation of a new basic level of MLA membership, which would allow for access to SIG resources but very few other MLA resources. This would allow for non-MLA members to access SIG resources and participate in SIG activities. However, this level of membership would not provide any of the other benefits of MLA membership. This low level of membership might appeal to those interested in SIG topics but who would not join MLA due to cost. The "SIG Only" level of membership as proposed would have nominal annual dues of \$20. This amount is comparable to the dues charged to join equivalent groups in MLA's peer organizations (American Library Association and Special Libraries Association) and the funds would help to cover administrative costs. Ultimately, the goal would be to convert many of the "SIG Only" memberships to full MLA memberships, after "SIG Only" members learn the value of the content and experiences provided by MLA membership. Stevens proposed that the "SIG Only" membership dues could be applied to full MLA membership.

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The second part of the proposed pilot project involves encouraging the SIGs to hold more activities online to address the survey concern that many SIGs only hold a business meeting at the MLA annual meeting but are inactive for the rest of the year. If a SIG holds its annual business meeting online, prior to the MLA annual meeting, it allows people to participate who are unable to travel to the meeting, allowing for greater participation. It provides the SIG an opportunity to use its in-person meeting time for alternate activities related to its topic, such as round table discussions or guest speakers. This would mimic the blended or hybrid format used in academia, combining in-person and virtual elements. It also addresses two of the key challenges mentioned in the survey: low participation in the SIGs throughout the year and the potential use of technology to make for more meaningful member experiences. This shift to online content has recently been tested by some Sections and SIGs. For example, the Nursing and Allied Health Resources Section (NAHRS) held its 2017 business meeting online prior to the MLA annual meeting, and the Outreach and Marketing SIG held its first virtual meeting in July 2017. With time, this could become a normal practice for MLA communities.

Conclusion

The concept of “Action Research” was foreign to the 2016-2017 Rising Stars. With the understanding of MLA’s concept of this disciplined inquiry, the projects gave the cohort the opportunity to understand the inner workings of MLA Sections and SIGs. Through their assigned projects, the group members developed their research and problem-solving skills as they contributed toward MLA’s strategic goal to strengthen member communities.

However, there were challenges with the project implementation that could have improved and enhanced the cohort’s experience. After the group worked on their projects independently for several months, the participants shared their results in a class session, only to discover that each of their projects overlapped significantly. In retrospect, the cohort agreed that if they worked collectively as a team, the projects would have been more streamlined and possibly have reduced a duplication of effort. By working as a team, the cohort believed that they may have suggested different actionable items in their project proposals to MLA and provided positive change to the organization. Additionally, working on a group project would provide a better experience for the leadership program, because successful organizational projects are rarely conducted by one person in a bubble but rather a team. The cohort recommends that future Rising Star cohorts conduct group projects in lieu of individual ones.

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An additional challenge to the research projects was the difficulty in obtaining MLA data and records. Archived MLA documents are housed at the National Library of Medicine (NLM) and unavailable in a digital format. The only way to access this information is to visit NLM and conduct research at their facility. Newer MLA records are digital, but the group faced some difficulty locating information and at times relied on the collective knowledge of past members and leaders. A more streamlined, transparent, and extensive data management system would have improved the process to locate and utilize the background material necessary to conduct the research projects.

Despite these challenges, the individual projects provided the four Rising Stars significant opportunity to learn new skills, such as writing strategic goals, conducting applied research, and creating a pilot project plan. Additionally, the Action Research projects provided deep insight into the inner workings of MLA, Section Council, Sections, and SIGs which would not have been learned by the cohort otherwise. In creating their project proposals, each member utilized their strengths to develop actionable items based on their own research findings. In the end, the group believes that the project findings and ideas presented to both Section Council and the Communities Task Force can strengthen MLA's Sections and SIGs and make them more valuable to the membership.

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Art Show Paints a Collaborative Picture: Increasing Engagement in a Pharmacy and Health Sciences Library

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Abstract

Objective: To increase student, staff, and faculty engagement with the health sciences library.

Methods: Faculty, staff, and students were encouraged to create pharmacy-themed artworks and submit them to the library for entry into an art show. A two-hour art show and gala were planned for library patrons to view art pieces submitted by faculty, staff, and students. Participation data was collected during the event and compared to previous programming held at the health sciences library.

Results: The *PharmArt* program determined a metric of demonstrable success would show as an uptick in participation; both physical and digital, when compared against previous library events. Physical participation was measured through program attendance and art piece submission. Participating demographics were represented by all target populations of faculty, staff, and students with a total increase of 52 participants (347% increase) over the previous event. Engagement through social media showed a considerable increase in clicks (2224%), shares (1200%), and overall reach (24%) within the school community.

Conclusions: Incorporating student, staff, and faculty art works into a library-hosted event increased participation in a library program compared to previous library programming. Attendance and Social Media engagement increased considerably. Faculty, librarians, and students were brought together to share a common creative interest and to promote a casual atmosphere in which cross-curricular ideas could be discussed among attendees.

Introduction

The Rite Aid Information Commons (RAIC) is the health sciences library serving the University of the Pacific Thomas J. Long School of Pharmacy and Health Sciences. The school supports the academic success of students studying pharmacy, audiology, physical therapy, and speech language pathology. Library events at the RAIC, such as the *Better Hearing & Speech Month (BHSM)* Kickoff Party, have traditionally had poor attendance, even with social media marketing and incentives such as raffle prizes. Due to the lack of engagement, many event goals were unmet (for example, providing important information regarding diseases and other health-related subjects), prompting a reevaluation of library programming at the RAIC.

Research increasingly supports library programs that provide students the opportunity to actively participate in creative endeavors at the intersection of art and science in order to view different facets of established academic and clinical concepts [1, 2]. In collaboration with

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pharmacy faculty, the RAIC hosted an art event and subsequent pop-up art gallery with the goals of 1) increasing engagement and collaboration with faculty and students and 2) improving patron interest in the library through creative and participatory library services.

The event, entitled *PharmArt*, was designed to encourage collaborative creative activity and stimulate discussion among artists and participants. Since the library is a neutral space, the RAIC provided a welcoming environment for artistic expression, which is recommended for the exchange of cross-curricular ideas [3]. The exhibit also provided pharmacy students and faculty an opportunity to interact socially with students from other disciplines.

Participation was broadly solicited from faculty, staff, and students within the School of Pharmacy and Health Sciences, and works from every physical art medium were welcomed. The theme of the art show was “Knowing Your Pharmacist and the Local History of Pharmacy.”

Objective

Previous programming at the RAIC had low participation, with just 15 attendees at the *Better Hearing & Speech Month (BHSM)* kickoff event. The primary goal of *PharmArt* was to positively increase student and faculty engagement in person and online at the RAIC by hosting an active, participatory library program. Not only did *PharmArt* improve event turnout to 67 attendees from *BHSM*’s 15 (347%), it also increased online engagement by 24 (1200%) Facebook shares and reactions. The secondary goal was to explore if students, faculty, and staff would be interested in a library-hosted art program. This goal was facilitated by encouraging creative participation from nine faculty, staff, and students who submitted eleven works of art, as well as providing attendees with the opportunity to vote in the art show.

Literature Review

Libraries are discovering methods to reshape space through art and aesthetics in order to connect with the community and draw in new users. A review of the literature reveals that art shows and galleries are created with much success not only in campus libraries, but in science and health sciences libraries as well.

Beals’ 2007 article on student art in library exhibitions details not only the process of setting up an exhibition program, but also the rationale [3]. In this often-cited article, Beals explores the process of designating the exhibition space, creating submission procedures, and deploying publicity, among other important logistical considerations, for the University of Tennessee

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Libraries. The process includes the creation of an inviting and visually appealing space, as well as providing an educational purpose that supports the library's mission. Similarly, the University of Colorado invited the general community to explore non-traditional uses of library space by establishing an art gallery that showcases works by local and visiting artists [4].

Science and health sciences libraries are also realizing the value of art in science learning. The Albert R. Mann Library at Cornell University, which serves agriculture, life science and human ecology programs, has created an art gallery that attempts to create interdisciplinary knowledge and communicate science through visual imagery, such as sculpture, drawing, photography, and illustration [5]. For the Marston Science Library at University of Florida, an art contest called "Elegance of Science" encourages faculty, students, and staff to compete for awards and recognition, while also providing campus art connoisseurs the opportunity to reflect and contemplate the discoveries of life [6].

The National Library of Medicine (NLM) has contributed to interdisciplinary learning innovation by creating the NLM Traveling Exhibition Program that health science libraries can adopt to engage with users. Previous high-interest themes include health science topics found in *Frankenstein* and *Harry Potter* novels. Outcomes of the NLM's traveling galleries reveal that they positively change users' perceptions of the library and bring more people through the doors [7].

Additionally, art shows and galleries are increasingly proving to be both ice breakers and sandboxes for future collaboration between faculty and librarians. Catalano et al. point out that disparate areas of the school, such as the health sciences and arts programs, all share something in common: the library [8]. College and university libraries that have indicated an explicit desire to increase outcomes of faculty-librarian connections and collaborations through art include:

- University of Akron Science & Technology library, which created a gallery of artistic journal covers of published faculty research [9]
- Fort Lewis College Reed Library, which emphasized student success outcomes within the College's mission [10]
- Himmelfarb Health Sciences Library at George Washington University Medical Center, where the library's art show has flourished since 1979 and has become a popular annual tradition embedded within the culture of the campus [11]

Throughout the literature, the common denominator in libraries developing an art show or establishing an art gallery is to further the library's mission, supported by the ideal of the library

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as a service organization with eight functions described by Frieda O. Weise in her 2003 Janet Doe Lecture as: a physical symbol of knowledge, an intellectual commons, a haven for research, a place for collaboration, an access point for information, a forum to teach, a functional and pleasant workplace, and an attractive gateway to the campus [12]. Art shows can embody these functions within the library by combining art with science to provide novel learning experiences for students between disciplines and encourage collaboration between faculty and librarians, where Beals states: “conversation is stimulated, participation is encouraged, and new experiences are gained.” [3].

Methods

In an effort to engage students, faculty, and staff in library programming, library staff working in conjunction with a School of Pharmacy faculty member, held a pharmacy-themed art show designed to bring together the various health sciences communities served by the RAIC. The name *PharmArt* was chosen for the pilot event to support American Pharmacists Month, with the majority of the marketing targeted to School of Pharmacy faculty, staff, and students. Submission requirements also included a local history of pharmacy theme, to encourage artists and viewers to connect their learning with the event.

Library staff released requests for art submissions on the health sciences campus during the summer of 2015 through social media accounts and print advertising displayed in campus libraries and health sciences buildings. The *PharmArt* gala was scheduled for October 13th from noon to 1pm. The submission process asked that prospective artists submit information about their works through a Google form, which was also accessible through a QR Code created at Kaywa.com. Artists were informed through email communications from library staff as to when and where to submit their artwork during the event. As the event date approached, internal reminders about the event were emailed to faculty and staff. Pharmacy faculty were asked to promote the event to their students. Student library staff were trained to answer common questions about submissions, contest details, and the event, as well as encourage participation and attendance to anyone inquiring.

The library decided to organize the event in the style of a gala in the hopes of drawing additional interest. To meet this end, the gala event organizers obtained a \$500 budget from the University Library to purchase food and drinks, prizes, and necessary exhibit staging for artwork and decorations. Knowing food would be a popular inducement, funds were set aside for that purpose in addition to the library purchasing door and participation prizes for the top three art pieces to be awarded in the days following the *PharmArt* art show. The prizes

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selected were a one-terabyte external hard drive, a \$25.00 Amazon gift card, a university tote bag, and a \$15.00 iTunes card. These were allocated as first, second, third, and door prizes respectively. Prizes were awarded through the use of raffle tickets given to attendees as they entered. Mention of raffle prizes and free food played a part in the in-house and online marketing campaigns.

During the event, the library remained open, however users were informed that the event might be disruptive. Art pieces were placed on display with a card stating title, artist, and art medium on the day of the event and, during the event, artists were encouraged to stand near their art and discuss it with viewers. Raffle tickets were given to *PharmArt* exhibit attendees for a door prize and also used as voting ballots for patrons' favorite art pieces. These tickets were tallied after the event day and prizes were awarded and ribbons placed. All art pieces were assigned numbers which were displayed prominently on the title card, which was used to record the vote selection.

At the event, attendees were encouraged to mingle while enjoying the different art displays and then place a vote for the piece they liked best by dropping their ticket, with contact information and vote recorded on the back, in a secured box. After the show, votes were tallied and winners determined based on number of votes. The art remained on display for several weeks following the exhibition.

The library determined the number of students, faculty, and staff who attended the event by conducting patron counts at the beginning, middle, and end of the event, and by asking all attendees to put their basic information on a ticket used to vote for the best art work. In order to exclude patrons who were in the library for more traditional use, such as studying, attendance counts for *PharmArt* was checked against the number of tickets collected, removing library users who did not participate in the *PharmArt* event from the final attendance count.

Results

To determine if the *PharmArt* program theme and marketing efforts netted a broader audience and increased online engagement, the library compared metrics collected from a prior event. First, the research team assessed attendance and social media 'hits' from *PharmArt* to the same information recorded during an earlier event held at the library, the *Better Hearing and Speech Month (BHSM)* kickoff party. Compared to data collected from the *BHSM* event in May of the same year, *PharmArt* successfully increased the target demographic attendance in the library, and increased the library's social media presence.

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Attendance at *PharmArt* recorded an increase of 347% above *BHSM*. A total of 67 individuals attended the art show, improving the attendance numbers from the previous *BHSM* program, which drew only 15 attendees (Table 1). Over the course of the *PharmArt* gala, 67 raffle tickets were handed out and 60 votes were received, indicating a willingness of attendees to participate and contribute to the event. All metrics for social media also indicated a marked increase (Table 1). Facebook metrics showed a gain in posts (+393.33%), shares/reactions (+1200%), cumulative reach (+24.07%), and click-throughs (+2223.53%). The library's *PharmArt* blog post hits experienced a gain of 23.08% over *BHSM*.

	<i>Better Hearing & Speech Month</i> May 2015	<i>PharmArt</i> October 2015
Total Attendance	15	67
Student	11	54
Faculty	3	7
Staff	1	6
Blog Post Hits	26	32
Facebook Page Posts	6	29
Facebook Shares/Reactions	2	26
Facebook Cumulative Reach	108	134
Facebook Click Throughs	17	395

Table 1. Physical Attendance and Social Media Engagement

Additionally, it was demonstrated anecdotally that the target community was interested in participating in an art show. Student staff workers regularly answered queries about the event in the month leading up to the gala and, by the date of the gala, the library had received a rich cross section of representation of art works in a variety of two-dimensional and three-dimensional media. All 11 art pieces that artists submitted for the art show were approved and included in the event. The ratio of university patron types participating was diverse, with 4 students, 3 faculty and 2 staff comprising the cohort of 9 artists. Furthermore, art was submitted not only from the School of Pharmacy, but also from other areas of the university: of the 11 art submissions, 6 came from the School of Pharmacy, 3 from the University Library, 1 from Computer Engineering, and 1 from the Business program.

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Discussion

Compared to previous library programming, the engagement metrics reveal that *PharmArt* generated interest and participation amongst the faculty, staff, and students in the Thomas J. Long School of Pharmacy and Health Sciences. The use of a common creative interest allowed these normally separate groups to engage in a more casual atmosphere that helped to remove some of the barriers experienced within a university setting. Participants included members of the different departments and disciplines of the school. Verbal feedback from participants provided during the event was positive and showed that the library can be a place for engagement as well as learning.

The primary goal of increasing student and faculty engagement for an active, participatory library program was achieved. Not only did RAIC notice improvement for in-person attendance, but online engagement and interaction increased as well. An art show, in particular, may help online and social media marketing of the library since it is a visual, aesthetic medium that complements online spaces.

The secondary goal of exploring interest in a library-hosted art program revealed that interest is very good, as the ratio of art participants included members from the three targeted patron groups: students, faculty and staff. Furthermore, the majority of art gala attendees participated in the art show itself through voting for their favorite art pieces.

Previous events at the library, such as *BHSM*, did not include active participation and were unsuccessful in generating engagement and participation. By finding a common creative interest and developing a program that brought all together, the library space transformed from the everyday usage as a study and snacking area to a collaborative engagement area, where students, faculty, and staff mingled, interacted and participated in a pop-up art gallery.

Limitations

A major limitation is that the research primarily calculates the quantitative increase in patron engagement of *PharmArt* within the library and online in social media but does not assess qualitative data. Samples of qualitative data that would be relevant and helpful to discuss include whether patrons enjoyed the art show, found it useful, or learned something new. As only one *PharmArt* event has been held, future shows could include qualitative assessments or interviews, and this data could be combined with engagement metrics to build a more complete picture on the quality of engagement with the attendees.

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Another limitation in the study concerns other events or factors that could influence attendance. The timing of events, for example, could be construed as potentially helping or hurting attendance. In this study, attendance at *BHSM* was held in the time leading up to mid-term exams and also just before the release of speech therapy students for their summer break, whereas *PharmArt* was held following mid-terms: as such, the difference could be construed to affect attendance. Time of year could also have an effect, as students in spring semester may be more interested in outside activities, whereas fall semester weather may be more conducive to indoor activities and events. The seasonal difference could also affect online engagement if patrons are more interested in outdoor activities in the spring rather than the fall.

Future Directions

The success of the first *PharmArt* show has led the RAIC to begin developing future programs involving art and examining how this active participation can help students develop skills for stress relief and confidence building. The use of art in pharmacy curricula is very limited but has shown to be helpful in other health science disciplines. Multiple studies on observing the effects of art on student development and pedagogies have been conducted primarily in medical school programs, and can provide outcomes that encourage discussion and understanding as it relates to patient care [13]. For example, in one study, a cross-disciplinary approach for developing medical insight incorporated the use of visual arts with medical themes: following the evaluation of artwork, students self-reported the positive development of observation, decision-making, reflection, and confidence-building skills [14]. In another study, medical students who took part in an arts-based learning course noted enhancement of awareness in self, improvement in self-confidence and self-care, increased preparation for stress, and development of communication and team-building skills [15]. In a study where students created and presented original artwork based on interactions with individuals living with chronic diseases, creative art was found to impact personal growth, self-discovery, sense of community and collaboration skills [16]. Medical education studies such as these can help inform the development of research in pharmacy education that incorporate interdisciplinary activities, forming a nexus between art and science that could help future pharmacists develop important self-awareness and community-building tools.

Recently revised education and accreditation standards in Pharmacy now include interdisciplinary and metacognition elements and programs such as *PharmArt* can help schools and colleges meet these requirements [17, 18]. At the RAIC, future research is planned to

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determine the effect of art and creativity on professionalism, stress relief, and confidence in health professional students.

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“Librarian’s Role in Reproducibility of Research” 2017 Symposium: Research Section Stipend Winner Reflection

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Introduction

At the 117th Annual Meeting and Exhibition of the Medical Library Association (MLA) in 2017, eight sections of the association jointly sponsored a symposium entitled Librarian’s Role in Reproducibility of Research. The four hour symposium was held Saturday, May 27th as part of the MLA pre-conference activities. Shona Kirtley, Knowledge and Information Manager for the EQUATOR Network at the Centre for Statistics in Medicine at the University of Oxford, served as the keynote speaker. Invited panelists discussed their roles in initiatives aimed to reduce the research waste caused by irreproducible reporting of scientific efforts within the published literature. The four-hour symposium concluded with a hands-on brainstorming activity that asked each of the attendees to propose and reflect on increasing the reproducibility of science. The following is a summary of the information shared and a reflection on the brainstorm suggestions made at the Librarian's Role in Reproducibility of Research Symposium. A LibGuide for the event, including agenda and speaker slides are located at <http://mlasymposium.libguides.com/c.php?g=584462&p=4036194>.

Defining the Reproducibility Crisis

In March 2012, a commentary on the reproducibility of preclinical cancer studies was published in *Nature*. This report by the company Amgen highlighted the disappointing success rate of translating basic science findings into clinical therapeutics, especially with regards to cancer studies. Amgen researchers conducted a review of 53 published studies finding only six (11%) of the results could be replicated [1]. This endorsed an earlier report from the pharmaceutical

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company Bayer that from a sample set of 67 published drug reports, only 20-25% were reproducible [2]. In response to these concerning observations, *The Lancet* launched a series of papers that discuss increasing the value and reducing research waste in the published literature, ultimately becoming *The Lancet's* Reduce Research Waste and Reward Diligence (REWARD) Campaign in 2015. In 2016, *Nature* published survey results from 1,576 researchers, 90% of whom affirmed a reproducibility crisis within the published literature [4].

In 2015, the U.S. National Science Foundation (NSF) released recommendations authored by the Subcommittee on Replicability in Science. Among other findings, this report noted that many terms used to discuss the ability to replicate or generalize a study were applied inconsistently. The report thereby offered the following definition:

“Reproducibility refers to the ability of a researcher to duplicate the results of a prior study using the same materials and procedures as were used by the original investigator (...) Reproducibility is a minimum necessary condition for a finding to be believable and informative.” [3]

This differs slightly from replicability, defined by the report as “the ability of a researcher to duplicate the results of a prior study if the same procedures are followed but new data are collected” [3]. In contrast, the *Nature* survey of researchers asked if respondents were able to reproduce results in a “similar experimental system” which “may include slight variations in methods or materials” [4]. Moving forward, as funders, publishers, researchers, librarians, and other stakeholders work to formulate strategies to address the concern, it will be important to work from a standard definition of the problem. Many approaches would conceivably impact both reproducibility and replicability; however, when discussing the scale of the crisis, and proposing focused solutions, it will be important to note the difference.

Policies: What are funders and publishers doing to support reproducible research?

Proposed solutions for increasing the reproducibility (and replicability) of the published literature can typically be broken into two main approaches: those that target data reporting and those that target process reports, or methodologies. Selective data sharing was cited as one of the top factors contributing to the crises by respondents of the *Nature* survey. Selective reporting may occur when authors publish a clean story, leaving out factors such as replicates that did not meet expectations, outliers, or statistical tests that did not show desired

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results. Data sharing initiatives help address these selective pressures by requiring all underlying data of published summaries and visualizations be made available. This creates options for timely, independent verification and may limit exaggerated reporting. However to address the reproducibility crises rather than just re-use initiatives, more rigorous sharing of research design and data collection methods are also required.

Funders of research have put together recommendations and guidelines in both these areas as seen by the NSF data sharing policy (<https://www.nsf.gov/bfa/dias/policy/dmp.jsp>) and the NIH Rigor and Reproducibility web portal (<https://www.nih.gov/research-training/rigor-reproducibility>). Additionally, organizations such as the Center for Open Science (COS) (<https://cos.io/>) in the U.S. and the Enhancing the QUALity and Transparency Of health Research (EQUATOR) Network (<http://www.equator-network.org>) in the U.K. also provide resources to address the process of sharing scientific findings. These organizations provide frameworks and guidelines for conducting and reporting reproducible scientific efforts. Guidelines and toolkits for reporting common study types are linked on the EQUATOR Network, while COS provides a framework for project management support, training, and updates on ongoing projects looking at field specific reproducibility issues.

Journal publishers have also responded to the call for increased reproducibility, though most have focused on data sharing strategies. *Science*, *Nature*, *Public Library of Science (PLOS)*, and *Proceedings of the National Academy of Sciences (PNAS)* have all established data sharing or data accessibility policies for their authors. Authors in these journals are expected to share the data and statistics underlying their findings, preferably in a public domain repository. The sharing of such data allows for both reproducibility and confirmatory actives as well as the reuse of data for new discoveries.

Journal publishers focusing on the increased rigor of published methodologies have done so primarily by exploring new publication types. The *Journal of Visualized Experiments (JoVE)* has been a leader in this area, developing a publication module of instructional videos aimed to better communicate experimental processes. As a panelist at the 2017 MLA Reproducibility Symposium, *JoVE* co-founder and CEO, Moshe Pritsker, noted that the classic structure of the journal article has remained largely unchanged since the first publication in 1665 and called emphatically for detailed methods as a stand-alone publication model [5]. Reinforcing his call, another panelist shared an example of the importance of robust materials reporting when a study found that variations in software version, workstation type (Mac or PC), and Mac

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operating system all had a significant impact on the analytic readings of 30 MRI scans [6]. When variables such as computer type and operating system are shown to play a role in reproducible data analysis, there is a clear need for more robust reporting than just product names.

Registered reports offer another emerging publication type in support of reproducibility. These are detailed study designs which undergo the peer-review process separate from the final study analysis. Registered reports describe key methodologies such as experimental model, data collection instruments, and statistical methods used in the proposed analysis. These are then reviewed for rigor and reproducibility before data are collected. Currently, COS lists 52 journals which have adopted the publication of registered reports in some capacity. Journals such as *Royal Society Open Science* and *BMC Biology* will then provisionally accept results for publication, contingent upon adherence to registered study design, regardless of study outcomes. This slow shift in accepted publication types represents a positive cultural shift in the scientific community by placing emphasis on rigorous scientific processes rather than focusing solely on novel, positive results.

Library Services: How can librarians support a culture of reproducible research?

As Kirtley emphasizes in her 2016 *The Lancet* commentary, librarians are well posed to be part of the answer to managing the current reproducibility crisis [7]. Academic and medical librarians are familiar partners in the research lifecycle, from developing robust and comprehensive search strategies, to selecting a journal and assisting with data sharing and management plans. Librarians who work on systematic review projects are intimately familiar with the challenges of adapting complex methods to new database environments. By attuning specific knowledge and services to the language and needs of addressing reproducibility, librarians are equipped to serve as advocates and partners. Even traditional roles such as collection development and access training can be easily adapted to addressing reproducibility as it relates to growing the awareness, availability, and utilization of new publication types.

Panelists at the 2017 MLA Reproducibility Symposium shared unique ways librarians at their institutions have contributed to creating reproducible research. Cynthia Hudson-Vitale, at the University of Washington in St. Louis, works with the Institute for Clinical and Translational Sciences to establish a framework for reproducible methods when working with electronic health records (EHRs). Librarians collaborated with researchers to identify 103 variables needed to ensure the reproducibility of EHR analysis: beginning with stating a clear, focused hypothesis

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through tracking query language with version notes and access dates, identifying statistical tests and packages, and reporting such specifics with standard documentation. All 103 variables would be needed in any resulting publications or data codebooks or the analyses could not be reliably replicated, regardless if the raw de-identified data is available and accessible. Bart Ragon from the University of Virginia and Kristi Holmes from Northwestern University, echoed the vital importance for librarians to offer collaborative support for open science and data management.

To further explore actionable roles and services, participants at the Symposium completed a hands-on exercise in which each person was asked to propose a specific idea for librarian involvement and collaboration. Ideas were then anonymously scored for how well the proposal resonated for an individual's library and institution. Collected from over the 30 responses, the highest scoring suggestions are listed below. While specifics of each suggestion were not discussed at the Symposium, one possible interpretation of the proposal follows each participant idea.

- Host "Reproduce-My-Research" Events

Such outreach or training events may take many different approaches. The idea seems to suggest giving researchers and students a formalized setting to reflect on and engage with each other specifically around how to improve the scientific reporting of their manuscripts. As this was the high scoring suggestion, it clearly resonated with many librarians who saw inspiration in this event title within their institutional outreach even without further details.

- Offer training to students and early career researchers

Many libraries already provide training opportunities to gain a better understanding and engage with resources, publishers, and services. Refocusing or adopting specific language to target reproducibility concerns may be an easy adaptation for services already in place.

- Incorporate into the researcher workflow

Again, many libraries already have collaborations or specific services targeting various aspects of the research lifecycle. Emphasizing these services as essential for addressing the reproducibility crisis may further campus collaborations and refine librarian roles.

- Establish data management best practices

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When working with data management strategies, many initial approaches supported by libraries may have been reactive to specific funder mandates. By proactively establishing best practices in line with robust and reproducible science, librarians are natural champions of more accessible research and open data.

- Educate Librarians

By seeking out learning and professional networking opportunities such as the 2017 Reproducibility Symposium, librarians are educating themselves about the problem, understanding researcher frustrations and emerging policies, and collaborating as a profession to explore targeted services. Opportunities to brainstorm and share challenges and success stories are invaluable for the development of robust and innovative services.

- Collaborate with institutional offices

Collaboration is implied in many of the top-scoring suggestions. Continued outreach to researcher groups and campus partners will be essential to the recognition of librarians as part of the solution.

- Provide high-quality, reproducible search results

For those librarians working on systematic reviews or providing in depth reference support, this is an opportunity to lead by example. Providing details of the search query along with specifics such as database coverage, search date and applied filters, raises subtle awareness of the necessity of these details. This may then provide the opportunity for discussion of similar essentials when reporting results.

The majority of these high scoring responses reflect activities and services already underway, with some variation, at many academic libraries. By educating librarians and raising awareness among researchers in the specific areas of reproducible research, many library services can be easily adapted to address the reproducibility crises. Hosting additional symposiums and workshops around the topic will encourage other librarians to share the specific services and outreach initiatives that have been successful.

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MLA 2017 Research Section Research Awards

Congratulations to the Winning Research Papers and Posters from MLA '17!

The MLA Research Section is pleased to announce the winners for best research papers and posters presented at the MLA 2017 annual meeting in Seattle, WA. Thank you to the 57 judges who volunteered their expertise to help select these deserving awardees. To learn more about the awards and selection process, visit the Research Section website at

<http://www.mlanet.org/p/cm/ld/fid=938>.

Contributed Papers

1st Place

Authors: Christy Jarvis, AHIP, Head of Information Resources and Digital Initiatives, University of Utah, Salt Lake City, UT; Melissa Rethlefsen, AHIP, Deputy Director / Associate Librarian, Spencer S. Eccles Health Sciences Library, Salt Lake City, UT

Title: Daring to Dive Deep into the Citation Data: Going Head to Head with SciHub

Abstract:

Objectives: To analyze the extent to which the library is fulfilling the information needs of its patrons in light of recent data showing heavy usage of SciHub in [our metro city] and specifically to gain insight into the percentage of referenced resources and content areas that were not made available to researchers through library funded subscriptions.

Methods: Using Scopus, we identified papers published by the institution's health sciences faculty in each of the previous 5 years. Papers co-authored by researchers at other institutions were excluded in order to focus the analysis solely on information resources available to scholars at the target institution. The citations from the resulting set of publications were extracted to spreadsheets, where they were subjected to a data normalization process. Incomplete or obviously erroneous references were removed. The remaining set of citations was sorted alphabetically by journal title, then secondarily by citation year. Using a combination of data sources, including publisher entitlement reports, catalog records, and previously downloaded holdings reports, we compared each citation to the library's collection at year of

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citation to determine if access to the cited resource was provided and paid for by the library.

Results: Published literature authored by University of Utah health sciences faculty between 2012 and 2016 yielded 119,794 citations for analysis. The libraries had print or electronic access to 99,298 (82.89%) of these cited resources. Another 9,220 (7.7%) were accessible from open access platforms, leaving only 11,084 (9.25%) citations that needed to be obtained from other sources, such as interlibrary loan, pay-per-view, or illegitimate sites such as Sci-Hub. Of the cited, but not provided, literature, 26% comes from backfile content whereas 74% comes from more recently published work. Identified collection gaps include the disciplines of Neurology, Cardiology, and Oncology.

Conclusion: A comprehensive evaluation of health sciences author citations over a 5-year period demonstrated that the vast majority were available from library-funded resources, thereby suggesting that the library's collection has been adequately meeting the needs of researchers and scholars. This study provides valuable insight into faculty information-seeking behaviors and has implications for future collection development, service offerings, and funding priorities within the library. Further study is needed to explore correlations between library-funded access to cited resources and other university metrics such as faculty recruitment and grant funding, as well as to investigate purported Sci-Hub activity in light of our findings.

2nd Place

Authors: Joanne Marshall, AHIP, FMLA, Research Professor, School of Information and Library Science Chapel Hill, NC; Amber Wells, Doctoral Graduate, Dept of Sociology, Chapel Hill, NC; Kathel Dunn, Associate Fellowship Program Director, National Library of Medicine, Bethesda, MD; Joyce Backus, Associate Director for Library Operations, National Library of Medicine, Bethesda, MD

Title: The Role of MEDLINE in Patient Care: Results of a Secondary Analysis of the Value of Libraries Study

Abstract:

Objectives: What role does the MEDLINE database play in relation to other information resources that are available to health care providers? What is the role of MEDLINE in positively impacting patient care? Since health care providers use multiple information resources in

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providing patient care, what is the specific role of MEDLINE?

Methods: A previous survey on the use of health information resources for patient care obtained 16,122 responses from 56 hospitals in the U.S. and Canada. The study asked respondents to indicate resources used in answering specific clinical questions. On average, respondents reported using 3.5 resources to answer their question. This analysis used advanced descriptive statistics and regression analysis to examine the specific information resources used and how they were used in combination with one another. The use of more resources was associated with more changes made to patient care and increased avoidance of adverse events. MEDLINE was more likely to be among the resources consulted than any other information resource except journals. The analysis reported in this paper provides new insights into how MEDLINE is used in conjunction with other resources to answer clinical questions.

Results: Our additional analysis of the Value Study data found that MEDLINE and online journals were the two most frequently used information resources. Respondents reported using an average of 3.5 resources when seeking additional information related to a specific patient care decision making situation. Using more information resources was associated with improved clinical decision making and a higher probability of making changes to patient care and avoiding adverse events. MEDLINE was most likely to be among the combinations of information resources used by physicians, residents and nurses.

Conclusion: MEDLINE continues to be a key information resource for health care providers as they seek answers to patient care questions. The MEDLINE database is also used in the preparation of many other specialized health information resources and point of care information tools. Since health professionals use multiple information resources, libraries and librarians continue to have an important role in providing access to and supporting the use of a wide range of information tools.

Honorable Mention

Authors: Tanja Bekhuis, AHIP, Principal Scientist, TCB Research & Indexing LLC, Pittsburgh, PA

Title: Training in Support of Data-Driven Research: A Qualitative Study of Library Workshops in Top National Institutes of Health-Funded and National Science Foundation-Funded Universities

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Abstract:

Objectives: In an age of data-driven research and competitive funding, libraries help their patrons acquire new skills. To do so, some offer workshops about knowledge discovery, analysis, and management of various kinds of data. The primary objective of this qualitative study was to explore the nature of workshops offered by libraries to support data-driven research in top NIH- and NSF-funded universities. Additionally, we developed a catalog of workshops, and indexed the resources and thematic content.

Methods: To identify top-funded universities, we used NIH Research Portfolio Online Reporting Tools and the NSF Budget Internet Information System. From corresponding websites, we extracted information on 99 workshops offered by health sciences libraries (n=5) and main libraries (n=5) in schools funded by NIH and NSF, respectively. Workshop title, duration, and description were catalogued by library and source of federal funding for the university. We used NVivo 11 Pro (QSR International) for qualitative data analysis and TExtract® (TEXYZ) to semi-automate indexing the content of the catalog. Themes were first identified in textual patterns and then were refined by an analyst. Thematic overlap was described across funding source. Additionally, we identified themes unique to each subset.

Results: Main libraries in NSF-funded schools offered 36% more workshops than health sciences libraries in NIH-funded schools (57 vs 42). Overall workshop duration ranged from 1 to 16 hours in a bimodal distribution (1st mode = 1 hour; 2nd mode = 3 hours). The distribution of duration for NSF schools differed from the NIH distribution. We identified 15 main themes overall: *statistical programming* and *data visualization* occurred most often, and *finding funds for research* and *open science* least often. Thematic distributions varied with funding source. For example, *bioinformatics* occurred most often in the NIH-funded subset and *statistical programming* in the NSF subset. For each subset, 20 most informative indexing terms were identified after sorting and discretizing into 7 quantiles. Top indexing terms included: *data visualization*, *pathway analysis*, and *data management* (NIH schools); *data analysis*, *data management plan (DMP)*, and *Python* (NSF schools).

Conclusion: A catalog of workshops organized by university funding source and library, along with 2 indexes (resource and subject), will be publicly available. The analytical results, as well as index content, yield insights regarding workshop coverage. Implications for strategic planning and development of library workshops in support of data-driven research will be discussed.

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Contributed Posters

1st Place

Authors: Angela Spencer, Manager, C. Alan McAfee MD Medical Library, Chesterfield, MO; Elizabeth Laera, Medical Librarian, Brookwood Baptist Health, Birmingham, AL; Halyna Liszczyński, Director, Library Services, St. Elizabeth Medical Center, Utica, NY; Louise McLaughlin, Information Specialist, Woman's Health Sciences Library, Baton Rouge, LA; Kathy Zeblicky, Medical Library Manager, Phoenix Children's Hospital, Phoenix, AZ

Title: Solo Librarians: Demographics, Duties, Needs, and Challenges

Abstract:

Objective: To obtain data on how many librarians classify themselves as solo librarians within a medical/hospital setting. Solo librarians constantly face challenges to maintain and expand services vital to their users. By quantifying their number and needs, a stronger voice can be developed.

Methods: A ten question survey using SurveyMonkey was sent to various medical library related listservs of interest to solo librarians.

Results: 383 surveys were returned, the majority from hospital and academic librarians. Other settings include clinics, organizations, research institutions and Veteran's institutions. Duties showed the variety of hats a solo can wear. Duties included: reference, interlibrary loan, teaching, committee work, website development, marketing, creating policies/procedures, writing grants, archives, informatics and other work. The "best challenges" question was the most insightful into what the needs are for solos. Major challenges included: funding/budget, awareness/visibility, time management, value/ROI/proving your worth, staffing, space, promotion/marketing/outreach, professional development, technology and organizational mergers.

Discussion: The full survey results quantify the size of the solo librarian population, and the contributions and challenges they face working in solo settings. This data can contribute useful information to discussions on best ways to support, educate, inform and advocate for this

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population.

Conclusion/Next Steps: Solo Librarians are faced with similar financial, marketing and operational challenges regardless of setting. We hope to encourage peers to share their challenges and concerns and work with NN/LM and MLA to educate them about solo librarians' needs and concerns so that we can sustain our future.

2nd Place

Authors: Nicole Theis-Mahon, Liaison to the School of Dentistry & HSL Collections Coordinator, University of Minnesota, Minneapolis, MN; Shanda Hunt, Public Health Library Liaison & Data Curation Specialist, Health Sciences Libraries, Minneapolis, MN

Title: My Doctor Said What!? Identifying and Assessing Online Health Information Resources

Abstract:

Objectives: Health information consumers look to the Internet to find answers to questions about their health or that of a loved one. We conducted a study to identify where individuals find online health information, how they use it, and what they think is missing. Results from this study are being used to make recommendations of how to improve services to this population.

Methods: The University of Minnesota Health Sciences Libraries conducted a cross-sectional study of adults in August 2016. The survey instrument was adapted from the eHealth Literacy Scale (eHEALS) and the Patient Activation Measure (PAM-13), administered electronically on tablets at the Minnesota State Fair, and took approximately six minutes to complete.

Convenience sampling yielded a total of 281 participants. Analysis of descriptive statistics and statistics to explore relationships between variables were conducted using R, and a qualitative analysis of one survey item was conducted using NVivo.

Results/Conclusion: Preliminary results show that a majority of participants use a search engine, such as Google, WebMD, or the Mayo Clinic website, to locate online health information. While most respondents were confident in their ability to evaluate the health resources they find online, only half identified indicators of quality health information. This result was confounded by the high number of participants who were health providers. Participants identified personalization of and interactivity with health websites as highly desirable.

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Honorable Mention

Authors: Hannah Norton, Interim Fackler Director, Associate University Librarian, University of Florida, Gainesville, FL; Mary Edwards, Reference & Liaison Librarian, Health Science Center Library, Gainesville, FL; Ariel Pomputius, Health Sciences Liaison Librarian, Health Science Center Library, Gainesville, FL; Michele Tennant, Interim Fackler Director, Health Science Center Libraries, Gainesville, FL

Title: Tracking Tech Trends: Studying Patron Technology Use through Annual Surveying

Abstract:

Objectives: At an academic health sciences library serving students, faculty, and staff across a wide variety of disciplines, studying library patrons' technology use, particularly in areas of mobile technology, provides necessary information on intersection points for library services. Administering a similar survey annually for five years generates a holistic view of patrons' technology needs and preferences over time.

Methods: Beginning in 2012, the University of Florida (UF) Health Science Center Library (HSCL) began administering a 16-question survey designed by the University of Southern California Norris Medical Library to address technology use of health professional students and faculty and their interest in related library services. For three years we participated in a multi-institution implementation of this survey; when the collaboration ended, we continued to administer the survey at UF. While some questions have been modified over time for clarity or changes in available technology, many are consistent across the five years of survey implementation, allowing analysis of trends over time in use of specific technologies and service needs at our institution.

Results: Smartphone ownership among survey respondents is nearly universal (ranging from 87.6% to 95.7% over the past 5 years), and a majority of respondents also own a tablet (from 51.1% to 70.2%). While respondents were likely to check library hours, use medical apps, and use library electronic resources from their smartphone or tablet, they reported being unlikely to friend or follow the library on Facebook or Twitter or send a call number from the catalog. One simple change implemented in response to survey results was to add the library's hours to the "Quick Links" portion of the library's website; while the hours are featured on other parts of the site, the Quick Links are the most prominent portion of the site's mobile version. Likewise, when survey data indicated that respondents were highly interested in

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training on mobile device apps, the HSCL developed a stand-alone workshop entitled “Mobile Resources for Health.” Trends that have not yet been explored further include respondents’ preference for print books for both academic (53.1% to 57.3%) and leisure (53.2% to 55.2%) reading, as compared to ebooks.

Conclusions: Annual review of survey results has led to incremental changes in services offered. Reviewing the aggregate data allows for more strategic consideration of future directions, with implications towards marketing the library’s resources, training development, and service development.
