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Engaging Graduate Medical and Health Sciences Students in Scholarly Communication: The Des Moines University Library's Research & Scholarly Communication Peer Associate Program

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Engaging Graduate Medical and Health Sciences Students in Scholarly Communication: The Des Moines University Library's Research & Scholarly Communication Peer Associate Program

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Abstract

This piece introduces the Des Moines University Library's Research and Scholarly Communication Peer Associate Program, focusing on the curriculum of a five-day summer institute developed for graduate medical and health sciences students and rooted in a critical information literacy framework. The authors outline the institute's philosophy and approach and provide readers with key content areas, materials, activities, and homework prompts. Initial program assessment is discussed, and the authors share their thoughts on how the program might continue to evolve to meet the changing needs of students. The article concludes with reflections from two peer associates who participated in the program during the 2022–2023 academic year.

Keywords: scholarly communication, peer learning, critical information literacy, health sciences librarianship, medical librarianship

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Engaging Graduate Medical and Health Sciences Students in Scholarly Communication: The Des Moines University Library's Research & Scholarly Communication Peer Associate Program

Increasingly, graduate medical students are demonstrating an interest in obtaining research experience during their studies. This has been the case at Des Moines University (DMU), a private graduate-level medical and health sciences institution, where there has been an increase in student demand for resources and services related to student publishing. It is not insignificant that such experience can give students a competitive advantage for residency placement. According to a study completed in 2018, students who had peer-reviewed publications were a significantly greater proportion of the students matched in higher-ranked residency programs. Additionally, students who were involved in research during medical school are more prepared for the rigor of research required for many residency and fellowship programs (Conroy et al., 2018).

In addition to aiding in residency matching for medical students, participation in research at the graduate level can bring to life what students are learning in the classroom and can increase students' understanding of how research will play a role in their future as health care professionals. The same is true of the development and enhancement of knowledge and skills that accompany research, including the awareness and use of library resources. The benefits of graduate medical student research, which have been detailed in previous publications, include enhanced self-directed learning, improvement of oral and written communication skills, the ability to critically analyze the literature, and the understanding of how to incorporate new knowledge into patient care (Boninger et al., 2010; Conroy et al., 2018).

With this student drive for research experience in mind, the DMU Library faculty sought to provide students interested in research with an opportunity for a greater understanding of the scholarly publishing process as well as a greater awareness of the ways library resources and services can help with research needs. Library faculty also recognized that while the provision of traditional information literacy instruction is important, librarians can and should play an important role in introducing students to concepts such as author rights and open access publishing models, for example (Rempel, 2010). At the same time, library faculty also acknowledged the growing role of libraries in providing scholarly

[INNOVATIVE PRACTICES]

*Schlesselman-Tarango et al.
Engaging Graduate Medical and Health Sciences
Students in Scholarly Communication*

communication workshops and training for graduate students (Craft & Harlow, 2020; McClellan et al., 2017; McDaniel, 2018; Schultz et al., 2021) and saw this also as an opportunity to incorporate critical information literacy into their instruction efforts. Indeed, asking students to engage with the scholarly communication ecosystem seemed fertile ground for attending to and critiquing the power dynamics of knowledge production, dissemination, and access. The Association of College and Research Libraries (ACRL, 2015) *Framework for Information Literacy for Higher Education*, which strongly informs the DMU Library's information literacy model, also reflects the importance of providing students with the tools to engage in scholarship. In describing the "Scholarship as Conversation" frame, it states that "developing familiarity with the sources of evidence, methods, and modes of discourse in the field assists novice learners to enter the conversation" (ACRL, 2015, p. 20).

Due to the shift to virtual learning and the COVID-19 pandemic, DMU students have experienced changes to the way content is delivered and how they are introduced to and learn key research skills. For example, most programs moved to online lectures and lab experiences during the height of the pandemic, and since that time several programs have made an even greater shift to more hybrid and online lectures. This shift has subsequently also significantly changed the way the DMU Library provides new graduate students with the information they need to be academically successful in the awareness of resources available to them and the way in which they can access them. Newly admitted students in some programs, for instance, no longer attend an in-person library orientation and rather access library orientation materials asynchronously via a course management system.

Additionally, in summer 2023, the entire DMU campus moved to a newly built location that no longer contains a traditional library space. Library resources and services, therefore, are largely (but not entirely) online, which presents new challenges and necessitates creative thinking around how to best ensure students are aware of all the library has to offer. These anticipated shifts and related ongoing changes led DMU librarians to seek out novel ways to introduce students to health sciences resources and aid students in their scholarly research pursuits.

The DMU Library has long employed student circulation desk workers, who have provided valuable insight into student needs, library use, etc., and have often shared information about the library with their peers. Library faculty recognized that formalizing peer-to-peer outreach and building additional communication channels with students, in addition to peer

sharing seen with existing library student workers, could only improve their ability to serve students in a new environment where the library's physical footprint is much smaller and where this new reality requires agility and experimentation. Indeed, as Arnold-Garza and Tomilson (2017) suggested, providing students with leadership opportunities in academic libraries carries the potential to benefit an organization via "participatory design processes, enhancement and transformation of the library's core functions, and addressing library value for stakeholders" (p. xi). As the library team thought through options, one thing that remained top of mind was the acknowledgment that students often seek out their peers rather than librarians or faculty members for advice on many things related to their graduate education, including how and where to access information, how to study, and information related to the scholarly research process and other research support (Anderson & Swazey, 1998; Gardner, 2008; Green & Macauley, 2007).

DMU librarians recognized that a co-curricular peer support program could be an innovative approach to providing medical and health sciences students with advanced training in library research, scholarly communication, and utilization of library resources. Such an initiative would complement what students are learning in the classroom, and participants in the program could in turn share what they learn with their peers.

Starting in September 2021, stakeholders at DMU—including members from the Registrar, Financial Aid, Student Affairs, Continuing Medical Education, Academic Support, the Student Government Association Advisory Council, the Office of Research, and the faculty—were consulted to assess student needs around library research and explore the possibility of a peer learning model. Feedback was sought on the level of research support students needed, as well as what programs already existed to avoid duplicating existing services. Stakeholders reaffirmed both the student desire for more research experience and confirmed that a peer program would fill this need. One student government representative pointed out how crucial foundational skills such as how to read a journal article can be for students, particularly in the sciences, who may not have learned this in their undergraduate studies. It was also suggested that bringing awareness to critical library resources such as UpToDate and VisualDx is invaluable for student learning both in pre-clinical and clinical years.

In spring 2022, then, the DMU Library piloted the Research and Scholarly Communication (RSC) Peer Associate Program, a paid employment opportunity that not only provides peer

associates an opportunity to develop outreach projects targeting their fellow students, but also offers a summer training institute meant to introduce participants to key library resources and services, health sciences research, and scholarly communication. This is a unique approach to peer learning models in academic libraries in that it centers scholarly communication in its training component, which as detailed above is incredibly important for medical and health sciences students, and the library team was confident it would be a big draw to participation in the program.

Real-World Experience in Scholarly Communication

This article is a collaborative endeavor between two faculty librarians who administered the Library RSC Peer Associate Program and two 2022–2023 RSC peer associates, both of whom are students in the DMU Doctor of Osteopathic Medicine program.

Readers will note that the final discussion section of this article provides the peer associate authors with the space to reflect on their learning at the summer institute and its application. Indeed, providing student authors with the opportunity to not only learn about, but also engage in, the scholarly communication landscape through this publication (as well as through participation in academic conferences in the fall of 2022) presents a unique opportunity to see how student library workers understand their experiences with research and the library as a part of their academic and professional formation. As previously mentioned, participation in scholarly activity also holds tremendous value for medical students who find themselves in highly competitive educational and professional environments.

In the spirit of equity and in an effort towards open scholarship, the faculty authors have taken care to ensure that this article and the collaborative processes (planning, drafting, etc.) that happen behind the scenes have been both transparent to and inclusive of the peer associate authors, while also remaining sensitive to the immensely busy and stressful medical student schedule that structures their time. For example, all five peer associates were invited to co-author with no pressure or expectation that they do so. Those who chose to co-author had the opportunity to participate in all facets of the process: drafting, copyediting, providing feedback, etc. The library faculty met with the student co-authors to collaboratively decide how the writing would be distributed among authors, to answer any questions, and to discuss how the peer review processes students learned about during the summer institute would likely play out in this real-world scenario.

Finally, the authors met to determine author order using a collaborative, discussion-based approach inspired by the Civic Laboratory for Environmental Action and Research's *Equity in Author Order* protocol (Liboiron, 2017). Highlighted during the summer institute as an alternative to traditional methods of establishing author order that often erase the labor of students, junior scholars, BIPOC, and women, this protocol is rooted in equity and consensus and accounts for often-ignored dynamics such as care work and social location.

The DMU Library Research and Scholarly Communication Peer Associate Program

This section details the design and implementation of the DMU Library RSC Peer Associate Program and focuses on the five-day summer institute, which kicks off the program and addresses various stages of research and scholarly work, from creation and production to access and impact.

Program Description

The DMU Library Research and Scholarly Communication program is a competitive, year-long program that provides students the opportunity to participate in an intensive, five-day summer institute that features advanced training in library research, scholarly communication, and library services and resources, as well as best practices in mentorship and teaching. Upon successful completion of the institute, associates work together throughout the academic year to create projects to support their peers as they engage in research and with library materials while at DMU. At the end of the program, peer associates receive a monetary award.

The inaugural cohort of 2022–2023 peer associates was comprised of five students from various academic programs who were split into three groups to deliver their outreach projects. Projects included a robust LibGuide showcasing library and other free resources to support students as they prepare for the Comprehensive Osteopathic Medical Licensing Exam (COMLEX Level 1) and United States Medical Licensing Exam (USMLE Step 1); a series of outreach events including a presentation to distance students and a National Library Week tabling event; and a workshop highlighting library and other resources geared towards students in the Doctor of Podiatric Medicine program.

Summer Institute

In the following, the five-day summer institute that students accepted into the program must attend before they begin their year as peer associates is detailed. While library faculty, who facilitated the institute, did explore different delivery formats, they decided upon a week-long model, as it was the best way to ensure most DMU students could participate. DMU academic programs begin and end at various times and do not necessarily follow a traditional semester schedule, and a week that had the fewest conflicts with the fewest programs was identified. Additionally, the DMU Library has long been exploring the option of offering credit-bearing electives, and the summer institute presented an opportunity to develop a curriculum in a format that could potentially be expanded or refigured into a course in the future. Finally, because the selected participants all indicated they were able to attend in person, the institute was held on campus. However, facilitators were prepared to deliver the institute virtually if necessary, as many students travel during the summer or are distance students enrolled in online programs.

While delivery methods for library-offered scholarly communication training range from workshops and digital tutorials to credit-bearing courses or institutes as we describe, one theme that emerges in the literature is that there is value in not only peer learning, but in learning that takes place outside of disciplinary or program confines, resulting in a sense of scholarly community (Eldermire et al., 2019; Forbes, Schlesselman-Tarango, & Keeran, 2017; Free, 2017; Gamble et al., 2020; McDaniel, 2018). Institute facilitators were intentional, then, about providing participants plenty of opportunities to get to know, connect with, and learn from one another. Discussion and active learning were woven throughout the institute, beginning on day one when, after engaging in ice breakers, the group collaboratively developed norms. Participants were invited to share their own experiences with research (which ranged from none to quite a bit), explore and present on library resources with partners, engage and sort various steps of the research lifecycle in small groups, discuss what they discovered through daily homework reflections, brainstorm and workshop peer project ideas, and more. A panel of faculty from various programs was invited to share their research journeys, address the role of funding in their work, and answer student questions. Throughout, students were exposed to the research habits and scholarly communication processes typical of their disciplines and others.

The institute's curriculum is rooted in advocacy towards a more open and equitable scholarly communications landscape and incorporates a plethora of examples relevant to

medical students and students in the health sciences. Information is presented through a critical information literacy framework that seeks to “encourage students to engage with and act upon the power structures underpinning information’s production and dissemination” (Tewell, 2015, p. 25) and a sociological approach to information literacy that “considers the role of the social world in the production of knowledge” (ACRL Anthropology and Sociology Section Instruction & Information Literacy Committee, 2022, p. 3). Students, then, not only learn about how those in their future professions “do research,” but they trouble current practices and systems in scholarly communication and explore alternative models and frameworks. For example, the students explore how racial and gender dynamics play out in scholarly publishing, incentive structures in academia and clinical settings, the role of uncompensated labor in research and peer review, the promise of open access, and new and more just ways of determining research impact and author order, just to name a few. Each day’s activities and discussions culminate in a review of homework that asks participants to engage with materials that build upon prior learning or introduces the next day’s topics. Students post their responses to a course management system and share what they learn the following day.

Appendix A presents a breakdown of key topics, materials, and homework prompts that constitute the summer institute, which for the first three days focuses on research and scholarly communication and dedicates the final two days to peer project development. The latter includes scaffolded activities that allow participants to reflect on what they learned, what would be most beneficial to their peers, and how this information could best be conveyed and when. Time is dedicated to workshopping one another’s ideas and drafting project proposals, which—along with project marketing plans—are due approximately a month after the institute concludes. The authors are indebted to the 2022 LibParlor Online Learning Curriculum Planning Forum organizers (Nimisha Bhat, Hailley Fargo, Chelsea Heinbach, and Charissa Powell) for modeling and sharing a number of activities that were incorporated into the summer institute, many of which were developed using Booreiland’s *75 Tools for Creative Thinking*.

Assessment and Reflection

Before and immediately following the completion of the summer institute, the five participants completed a pre-survey gauging interest and experience and a post-survey that measured their confidence in their ability to use resources, their belief that they could

successfully apply what they learned, and whether the institute was overall a valuable experience. At the culmination of the program at the end of the academic year, a summative experience survey was administered. This final survey included some of the same questions as the post-survey and solicited a self-assessment of participants' peer projects; advice for future peer associates; feedback on whether participation contributed to their sense of professional identity, their sense of community or belonging, or their ability to be a resource for their peers or connect their peers with resources; and details regarding what was most impactful about the program and what they would recommend changing about the program. Survey instruments are available in Appendix B.

At the completion of the summer institute, participants generally rated their confidence levels in using resources as higher on the post-survey than on the pre-survey. All participants said they would be able to apply what they learned to research projects or in clinical practice. After the projects were completed, students felt the program most strongly contributed to their ability to be a resource for their peers and the ability to connect their peers to campus resources. Overall, several student participants stated that they learned a lot about the research process and how to utilize library resources more effectively. The data gathered through these assessment efforts will continue to shape the program and its delivery.

Additionally, DMU Librarians will need to keep in mind that the scholarly communication landscape is always in a state of flux and that the summer institute curriculum needs to stay current in order to reflect the challenges and opportunities students will encounter. For example, future iterations of the institute could incorporate a discussion of generative AI in research and publishing, which could include an exploration of AI's limitations and affordances, as well as its implications for science, medicine, and patient care.

Finally, while the program currently targets second-year, pre-clinical students who are still taking courses at DMU, it is worth considering what a peer associate program focused on scholarly communication could look like for medical students in their final years of clinical study. During this time (years three and four), most students are living and working at external sites where they engage in rotations at hospitals and clinics across the country. Would a co-curricular program that takes a hard look at the evidence central to the evidence-based medicine these students are daily practicing be appealing? Would students have time to participate? Would a program that could help develop community or a sense of

belonging among students be welcome during this stressful and potentially isolating time? What research needs do students on rotations have that a peer associate program might be able to support?

Below, 2022–2023 peer associates Elizabeth Pryor and Rainie Valencia share their own reflections on the DMU Library RSC Peer Associate Program's summer institute and its application to their studies and work as future healthcare providers.

Elizabeth Pryor

As someone who has only participated in bench-type research in a laboratory, I was drawn to the Library RSC Peer Associate Program to expand my definition of research and gain a better understanding of how I can utilize the research process and scholarly communication outside of a laboratory setting. Bench research is typically thought of as research that is done inside of a laboratory; it is the basic science research that answers questions on a more molecular level, building into greater answers later on in clinical application. This institute taught me how to utilize scholarly communication and how I can incorporate library resources in my clinical career.

During the institute, there was a whole day dedicated to the definition of scholarly communication and how it is applied in research. The day started off with an activity that described research as a vehicle and prompted questions such as what makes this vehicle go, who is driving, where is it going, how is it fueled, and other questions regarding the vehicle, etc. This activity was a great opportunity to apply my knowledge of the research process to a more tangible setting, and it helped me understand the varying interactions among the parties involved in research and how the research process is done. Additionally, the other members of the program had different experiences in research, so it was interesting to learn about how they viewed the research process as well. This activity demonstrated well how scholarly communication can take many different forms and can look differently throughout the research process.

In addition to learning about scholarly communication, the program also informed us of different resources found through the library that are applicable to our clinical education and beyond. There were multiple activities throughout the program that exposed us to these different resources and how and when to best use them. Discussion of these resources was paired with discussion of foreground and background questions and primary and secondary

[INNOVATIVE PRACTICES]

Schlesselman-Tarango et al.
Engaging Graduate Medical and Health Sciences
Students in Scholarly Communication

resources, meaning we were able to learn better how each of these resources can be categorized and utilized. For example, one resource we learned about was UpToDate, which provides synopses of various clinical presentations for point-of-care use. This source will be especially helpful as I continue onto the clinical rotations portion of my education, as this resource will be readily available to me to help refresh my memory on some of the more difficult concepts while I am at clinical sites.

Additionally, we investigated specific journals, learning what types of articles they published and how they are best utilized. This, along with discussion about the publication process, including article retraction, helped me realize what really goes into the process of publishing an article in a journal. These discussions gave me a more bird's-eye view of the research process that I was missing from my time as only a bench researcher.

Overall, my experience in the Library RSC Peer Associate Program was very informative regarding the research process, scholarly communication, and library resources useful for my clinical career. My previous experience in research had led me to only see a certain part of the research process, but this program opened my eyes to many other factors that go into our learning, including scholarly communication and how it can vary among people and projects. This program was a great opportunity to learn more about what the library has to offer and how I can learn to incorporate these resources and skills into my future practice.

Rainie Valencia

Prior to my participation in the Library RSC Peer Associate Program, I had no experience in conducting or disseminating research and only a vague understanding of the entire research process. I applied to be a participant in the program because I wanted to not only learn about the different phases of research, but how to discern good research from bad research through critical appraisal/analysis, and how to effectively apply that new knowledge to the practice of evidence-based medicine. Through the summer institute, I learned about the role of research and knowledge acquisition in the development of evidence-based practice, how to evaluate the strength of evidence, and best practices for the creation and dissemination of accessible research materials.

During the first day of the institute, each member of our cohort discussed our own understanding of what constituted evidence-based practice (EBP) and the images that this phrase elicited in our minds. Each student in our cohort was a member of a different professional health sciences program on campus, and so I had the unique opportunity to

hear about their experience with EBP through the lens of a podiatric and public health student. Through this exercise, I learned that engaging in EBP is not static, but an ever-evolving process that combines clinical experience/judgment with knowledge of the best scientific evidence, while maintaining consideration for individual patient preferences and core values. It involves locating, analyzing, and incorporating current best medical practices into a model of patient care that is informed through clinical research/trials, case studies, and other methodologies. It is a constant cycle of asking pertinent questions, acquiring/appraising knowledge, and appropriately applying that knowledge in different clinical scenarios to the benefit of the patient.

Through the summer institute I also learned how to critically evaluate evidence presented through different research articles, and when confronted with opposing recommendations, how to determine which evidence is stronger than the other. To practice this skill, we read the abstracts of four different journal articles and then ranked them according to the strength of their evidence and clinical application. We talked about the levels of the evidence pyramid and how the quality of information obtained from different types of studies improves as one ascends the pyramid from case series and cross-sectional studies to systematic reviews and meta-analyses. When appraising an article, I learned the importance of exploring who funded the research, what organizations or institutions the author(s) may be affiliated with that are not plainly apparent, as well as evaluating article metrics and taking stock of who is citing the research and how the public is engaging with it. I also learned how to utilize *Retraction Watch* to search for scientific publications that may have been retracted since their initial release.

One of the most important things I learned during the institute was the concept of open access and the importance of generating research that is widely accessible to those who need it most. Expensive subscription fees and pay-per-view charges historically endorsed by many academic journals can make access to the most current research nearly impossible for clinicians who are not affiliated with large universities or hospital systems that can afford to pay the exorbitant prices and can have a direct impact on patient care and health outcomes.

My five-day immersion in the summer institute gave me the opportunity to learn about the many components of the research lifecycle, explore different models/avenues for publishing research, and learn about how research is disseminated among scholars and to the public. I was able to engage in collaborative activities with students from other medical professional

programs, all of whom had varying degrees of research experience, and with whom I might not have had the opportunity to interact with otherwise. I completed the program feeling vastly more confident in my ability to find, evaluate, and apply research findings to the practice of evidence-based medicine.

Conclusion

The DMU Library Research and Scholarly Communication Peer Associate Program presents librarians working with graduate students and students in the health sciences with a peer learning model that incorporates a focus on scholarly communication. In particular, the summer institute is an example of a student training opportunity that moves beyond just how to provide customer service or even utilize library resources to a more robust, critical exploration of how information is created, disseminated, and accessed. This can be especially helpful for students who, like many entering the health professions, will be either using research to make potentially lifesaving decisions or engaging in research itself. At the same time, a program such as this can also work in undergraduate settings and with areas of study outside of the health sciences. Indeed, a curriculum that focuses on the *who, what, when, where, why* and *how* of information can transcend disciplines and can be adapted for anyone who wishes to employ critical information literacy to explore scholarship's power dynamics and sites of resistance.

As DMU transitions to a new campus and the library's physical footprint dramatically decreases, we are not only excited about what we can continue to learn from peer associates about how they and their peers can best be made aware of and utilize resources and services, but we remain hopeful that the DMU Library RSC Peer Associate program can be a powerful tool to reach the campus community in our new reality.

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Appendix A: DMU Library Research and Scholarly Communication Peer Associate Program Summer Institute Curriculum Overview

Day	Key topics	Key materials	Homework prompt
Day 1 Evidence in Medical and Health Professions	<ul style="list-style-type: none"> • Program overview and expectations • Develop norms • Our own experience with research • Evidence-based practice and levels of evidence • Library resources in support of evidence-based practice • Background and foreground questions 	<ul style="list-style-type: none"> • Paper and markers for students to draw research journeys • Abstracts from different study designs (levels of evidence) for sorting activity • Internal pyramid of evidence video • Prompts for exploring library resources 	In your own words, what is evidence-based practice? Skim DMU Library resources and pick one you think would be helpful for your peers. Briefly describe the resources. Why and in what scenario would this be useful to DMU students? What level(s) of evidence does it present? Brainstorm one idea for promoting this resource to your peers (at this point, no idea is a bad idea!).
Day 2 Thinking Critically about Scholarly Communication	<ul style="list-style-type: none"> • Research: who, what, when, where, why • Scholarly communication • Research lifecycle • Publication bias, paper factories, research misconduct, industry influence, publishing incentives, social media and misinformation 	<ul style="list-style-type: none"> • Paper and markers to draw research vehicles • Various steps in research lifecycle for sorting activity • Prompts for tracing lifecycle of research reported in a journal article • Ben Goldacre TED talk, "What Doctors Don't Know about the Drugs They Prescribe" • Gallery walk with examples of flaws in scholarly communication landscape 	In your own words, what is scholarly communication? What are the steps in the research lifecycle? View, listen, or read your assigned piece.* How does this piece complicate the "purity" of scholarly communication? In your opinion, does it represent a "crisis of confidence" in evidence central to evidence-based practice? What might this mean for researchers and the public, including patients?

Day	Key topics	Key materials	Homework prompt
Day 3 Publishing and the Impact & Reach of Research	<ul style="list-style-type: none"> • Peer review process • Impact factors • Publication models and open access • Funding mandates and open science • Faculty panel 	<ul style="list-style-type: none"> • Dr. Glaucomflecken YouTube video, "Nature Needs a Reviewer" • Highly-cited article to explore impact via Scopus • <i>Paywall: The Business of Scholarship</i> film 	Find a researcher/scholar who is doing work that interests you and who has a social media presence. How are they using these platforms to share their research? Are they sharing research from various points in the research lifecycle? In your opinion, what sort of public research identity are they trying to cultivate? Now it's your turn. Create either a Google Scholar, ORCID, or other scholarly profile. What does this profile allow you to share? What other features might be useful for both the researcher and for your fellow students?
Day 4 Best Practices for Sharing Information and Creating Accessible Materials	<ul style="list-style-type: none"> • Guest speaker: best practices for presentations • Guest speaker: making digital materials accessible • What we've learned so far • Brainstorm initial ideas and pick project groups 	<ul style="list-style-type: none"> • Prompts for developing initial project ideas 	Reflect on the last four days. What have you learned so far? What remains unclear?
Day 5 Workshop Peer Project Ideas	<ul style="list-style-type: none"> • What other students are doing at academic libraries • Continue to brainstorm and workshop projects • Review future deliverables • Final housekeeping 	<ul style="list-style-type: none"> • Example peer projects from other academic libraries • Paper and markers for brainstorming activity and SWOT analysis 	Formal peer project proposals and marketing plans due at a later date

Note. Homework selections for day two included reviewing the following:

Goldacre, B. (2013, February 13). Trial sans error: How pharma-funded research cherry-picks positive results [Excerpt]. *Scientific American*.

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Hamblin, J. (2018, September 24). A credibility crisis in food science. *The Atlantic*.

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Heathers, J. (2021, October 23). The real scandal about ivermectin. *The Atlantic*.
<https://www.theatlantic.com/science/archive/2021/10/ivermectin-research-problems/620473/>

Hobbes, M., & Gordon, A. (Hosts). (2021, July 20). School lunches, p-hacking, and the original 'Pizzagate' (No. 22) [Audio podcast episode]. In *Maintenance Phase*. Buzzsprout.
<https://podcasts.apple.com/us/podcast/school-lunches-p-hacking-and-the-original-pizzagate/id1535408667?i=1000529447507>

McFarling, U. M. (2022, March 31). *Even as medicine becomes more diverse, main authors in elite journals remain mostly white and male*. STAT.
<https://www.statnews.com/2022/03/31/main-authors-in-elite-medical-journals-remain-mostly-white-and-male/>

Retraction Watch website, <https://retractionwatch.com/>.

Smith, R. (2021, July 5). Time to assume that all health research is fraudulent until proven otherwise? *BMJ Opinion*. <https://blogs.bmj.com/bmj/2021/07/05/time-to-assume-that-health-research-is-fraudulent-until-proved-otherwise/>

Appendix B: Survey Instruments

Summer Institute Pre-Survey

1. Please indicate your program and year.
2. With 1 being the least and 5 being the most, please rate your confidence in your ability to use library (and other relevant) resources in your research.
3. Are there any specific things you'd like to cover or learn during the institute?
4. Do you have any questions or concerns about the institute or program?

Summer Institute Post-Survey

1. Please indicate your program and year.
2. With 1 being the least and 5 being the most, please rate your confidence in your ability to use library (and other relevant) resources in your research.
3. I believe I can successfully apply what I learned during the institute to research projects or in clinical practice/the workplace.
 - a. agree
 - b. disagree
 - c. not sure
4. If you selected 'agree' above, what skills, knowledge, or tools/resources are applicable? If you aren't sure or selected 'disagree,' please explain why.
5. Overall, I feel that the institute was a valuable experience.
 - a. agree
 - b. disagree
 - c. not sure
6. Please provide any additional feedback below.

Summative Experience Survey

1. Please indicate your program and year.
2. Look back at your project outcomes and how you planned to measure success (see your project proposal). What did you learn – how was your project successful, and where did it fall short? What would you do differently next time?
3. What advice do you have for future peer associates, particularly around planning and delivering a project?
4. I have been able to successfully apply what I learned through participation in this program to research projects or in clinical practice/the workplace.
 - a. agree
 - b. disagree
 - c. not sure
5. If you selected 'agree' above, what skills, knowledge, or tools/resources are applicable? If you aren't sure or selected 'disagree,' please explain why.
6. This program contributed to (select all that apply):
 - a. my sense of identity as a professional
 - b. my sense of community or belonging
 - c. my ability to be a resource for my peers
 - d. my ability to connect my peers with campus resources
 - e. other
7. What about the LRSC Peer Associate Program was most impactful to you?
8. What about the LRSC Peer Associate Program would you recommend changing and why?
9. Please provide any additional feedback below.