Evidence Based Library and Information Practice

Assessment of the Institute for Research Design in Librarianship, Phase 2: Impact on the Research Productivity and Careers of Academic Librarians

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Article abstract

Objective – This article reports on the qualitative phase of a two-phase sequential mixed-methods study to assess the first six years of the Institute for Research Design in Librarianship (IRDL), a continuing education program for academic and research librarians. The study is designed to assess the effectiveness of IRDL in meeting short-term and long-term programmatic objectives related to the research productivity, job performance, and professional identities of the participants in the program.

Methods – In this second part of a two-phase study, the authors conducted focus group and individual interviews with 37 IRDL participants (hereafter called Scholars) and coded the resulting transcripts. The first phase of the study surveyed all 124 program participants; the results were reported in an earlier article in this journal. The second-phase interviews were conducted and then coded using a deductive process. The researchers identified transcript excerpts that explored the concepts of research productivity, job performance, and identity as a researcher. Each of these concepts was further sub-coded to explore the four sources of self-efficacy, as described in Albert Bandura's theory: mastery experiences; verbal or social persuasion; vicarious experiences; and physiological and affective states.

Results – The majority of the conversations in both the in-depth individual interviews and the focus group interviews centered around research productivity; approximately 70% of the transcript excerpts from focus groups and 55% of the individual interviews addressed issues related to productivity. Participants also discussed the impact of IRDL on their job performance and their identify as researchers. Gaining research confidence had a notable positive impact on job performance related to classroom teaching and supporting researchers. Within these areas of conversation, all sources of self-efficacy were evident, but the most frequently noted were influences related to mastery learning and social persuasion, through mentorship and becoming part of a peer research community.

Conclusion – The findings from the focus groups and in-depth interviews deepen the meaning of the results from the quantitative phase of our IRDL assessment research. The participants in the study reported both frustration and satisfaction with conducting their research. A supportive environment focused on helping librarians gain needed research skills, practice those skills, and become part of a research community contributes to research confidence and productivity, improved job performance, and identity as a researcher. The findings of this study have implications for developing librarians as researchers, including the importance of a supportive work environment, research mentoring, and the positive influence of becoming part of a research community.

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Research Article

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Abstract

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Introduction

This article reports on the qualitative phase of a two-phase sequential mixed-methods study to assess the effectiveness of the IRDL, a continuing education program for academic and research librarians. IRDL was created to provide focused research training, coupled with a support network, to guide novice librarian researchers through conducting a research project of their own design. The annual program, which was founded in 2014 and operated with funding from the Institute of Museum and Library Services (IMLS), began with a nine-day, in-person summer research design workshop, taught by a library and information science faculty member and a health researcher. After the in-person workshop, the cohorts continued to work on their research remotely for a year, supported by the co-directors, the peer cohort, and formal research mentors. The quantitative assessment study of the first six years of the program surveyed online all 124 participants; the results were reported in a previous article (Albarillo et al., 2022). In the second phase of the assessment reported here, the researchers used semi-structured focus

group and individual interviews with 37 IRDL Scholars who responded to the survey to explore more fully the quantitative findings. This qualitative phase allowed the researchers to hear directly from IRDL participants about the short-term and long-term impact that their year-long experiences may have had on their research productivity, their job performance, and their identity as a researcher.

Literature Review

Research Success Factors and Productivity

The goal of IRDL was, within the programmatic year of participation, to lessen barriers to research success for novice academic librarian researchers and maximize the availability of research supports. The development of the IRDL program and the assessment of its effectiveness have been influenced by work of a team of Canadian researchers (Hoffmann et al., 2014, 2017) who shifted the focus of attention from research barriers to research success factors. In their 2014 study, the authors conducted a content analysis of empirical studies on research productivity among librarians and other practitioner researchers and identified 16 success factors that could be grouped into three broad categories: "Individual Attributes, Peers and Community, and Institutional Structures and Supports" (Hoffmann et al., 2014, p. 19), with many factors occurring in more than one category. In a subsequent study to test the validity of these factors in a quantitative study of Canadian research librarians, the researchers gathered research productivity data and correlated the data with yes/no statements that map to 11 research success factors from the three broad categories (Hoffmann et al., 2017, p. 110). They found all three categories had a positive impact on research productivity. In the conclusion of the article, the authors note the need for a follow-up qualitative study. A recent study of research librarians in the United States found that all three broad categories were statistically significant when looking at weighted output and number of peer-reviewed articles (Hoffmann et al., 2023, p. 406). However, the Peers and Community category, which is a strong focus in the design and assessment of IRDL, was the only category that was statistically correlated with all forms of research output (Hoffmann et al., 2023, p. 408). This article also called for qualitative follow-up studies.

Research Self-efficacy

In the 1970s, psychologist Albert Bandura developed the theory of self-efficacy, which predicts how individuals will behave in threatening or challenging situations (Bandura, 1977). He defined self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce certain attainments" (1997, p. 3). Positive beliefs in one's ability to produce positive outcomes are more likely to produce those outcomes than negative expectations; positive expectations serve as incentives and negative expectations as disincentives (Bandura, 1997, pp. 20-21). In order to achieve positive outcomes, it is necessary to increase positive expectations, that is, to increase perceived self-efficacy. However, self-efficacy is not general, but specific; we do not have equal confidence in our ability to produce outcomes across domains. Research self-efficacy (hereafter RSE) has been defined as "an individual's belief or confidence in his or her ability to successfully perform tasks associated with conducting research" (Forester et al., 2004, p. 4). This definition includes the ability to complete various research tasks, including conceptualization, analysis, and writing (Bieschke et al., 1996).

A recent meta-analysis of RSE confirmed that RSE is both an *outcome* of activities such as research training; and an *antecedent* predictor of variables such as research productivity (Livinți et al., 2021). Notably for the present study, which is focused on practitioner-researchers, the predictive association between research self-efficacy and research productivity has been studied in applied disciplines, such as

counseling psychology (Kahn & Scott, 1997; Phillips & Russell, 1994) and medicine (Bakken et al., 2006). Low research self-efficacy has been associated with research avoidance (Betz, 1986). Other researchers have studied the impact of research training (Brown et al., 1996; Hollingsworth & Fassinger, 2002) and research mentoring (Hollingsworth & Fassinger, 2002) on RSE. Consequently, prior to the development of IRDL, the co-directors became interested in the potential for RSE to both predict and influence research success among academic and research librarians. In the survey they conducted to inform the design of IRDL, they included a 10-item research self-efficacy scale, based on the steps in planning, conducting, and disseminating research (Kennedy & Brancolini, 2012). They found that research self-efficacy is a statistically significant predictor of research success among academic librarians. The co-directors considered ways to improve the research self-efficacy of librarian researchers by focusing on the factors that contribute to self-efficacy, through training and support. They later expanded the scale to 38 items and incorporated its use into the assessment of IRDL (Brancolini & Kennedy, 2017).

Sources of Self-efficacy

Bandura (1977) proposed four sources of self-efficacy: mastery experiences; verbal or social persuasion; vicarious experiences; and physiological and affective states. These four sources of RSE became the foundation of IRDL. The research workshop and the following year were designed to provide opportunities for research-related personal mastery experiences, what Bandura calls "performance accomplishments" (p. 195). A short-term goal of IRDL is for the Scholars to complete a project in one year, a significant mastery experience. The Scholars are placed in an environment with accomplished librarian researchers who model research success, both during the summer workshop and during the one-on-one research mentoring, providing vicarious experiences. Bandura notes that vicarious experiences "can generate expectations in observers that they too will improve if they intensify and persist in their efforts" (p. 197). When we see others succeed who share similarities with us, we are more likely to be inspired by their accomplishments. Although Bandura asserts that the third source, verbal persuasion, is less effective than mastery experiences, the "impact of verbal persuasion on self-efficacy may vary substantially depending on the perceived credibility of the persuaders... The more believable the source of the information, the more likely are efficacy expectations to change" (p. 202). Verbal persuasion is also more effective when the persuader focuses on achieving an attainable goal, rather than deficit reduction. Thus, the instructors and the mentors were chosen for their expertise and experience. The instructors emphasize the importance of developing a manageable project and the mentors focus on supporting the Scholars' goal of finishing their research project during the IRDL year. The fourth source, emotional arousal, interacts with the other three sources. Positive emotions associated with an activity increase self-efficacy and negative emotions decrease it. IRDL was designed to increase positive feelings associated with research by providing opportunities for mastery experiences, vicarious experiences, and verbal encouragement, with the intention of arousing positive emotions and decreasing anxiety.

Methods

To assess the short-term and long-term impacts that IRDL may have had on its participants, the researchers conducted a two-phase explanatory sequential mixed-methods study of all 124 participants of the program in its first six years (2014-2019). The first phase employed a quantitative approach using a web-based survey, which was administered in October 2019 and July 2020. The survey findings were published as a separate article (Albarillo et al., 2022). The second phase of the study, which is the subject of this article, used a qualitative approach employing semi-structured individual and group interviews. Brooklyn College, City University of New York was the IRB of record for this study. The facilitator

conducted the in-depth interviews first, followed by the focus group interviews, all in the summer of 2020. Oral consent was obtained at the beginning of each recorded interview.

The lead author conducted the interviews remotely using the cloud-based video conferencing service Zoom, at the height of the COVID-19 lockdown. Readers should be aware that at this time during the pandemic in the United States there was great social unrest, beginning with the fear and death caused by the COVID-19 pandemic, which had claimed 354,981 lives (Centers for Disease Control and Prevention, 2023) by the end of 2020. During the summer of 2020, when these interviews were conducted, there followed more social unrest with the murder of George Floyd and the Black Lives Matter protests, the rise in Asian-American hate crimes, the breakdown of major supply chains, and the closure of many colleges, businesses, and schools as these institutions transitioned to remote models. Despite these factors and with the consent of our study population, we decided to continue with the interviews and not to modify any of the research instruments to stay consistent with the original research design.

Study Population Group Design and Recruitment

If a respondent indicated during the survey phase of the study that they would be interested in participating in further research, they were recruited into this phase of the study; 56 Scholars volunteered to participate. From this pool, 37 were selected for the individual or group interviews. Five Scholars participated in in-depth interviews; 32 Scholars were divided into five focus groups. Using the survey data, we created six categories of interview participants:

- In-depth Interviews (n = 5) were conducted individually with Scholars who did not complete their IRDL project at the time of the survey and indicated that they are not continuing to do research.[1]
- Focus Group 1 (n = 6) was comprised of Scholars who completed their IRDL project and are continuing to do research.
- Focus Group 2 (n = 6) was comprised of Scholars who did not complete their IRDL project but are continuing to do research.
- Focus Group 3 (n = 7) was comprised of Scholars who are continuing to do research and who were/are tenure track.
- Focus Group 4 (n = 6) was comprised of Scholars who are continuing to do research and who are on continuing reappointment.
- Focus Group 5 (n = 7) was comprised of Scholars who indicated that they received a certificate of continuous appointment or achieved tenure because of IRDL.

The text of the recruitment email is included as Appendix A. As an incentive we gave participants a $100 gift card from giftcards.com. The IMLS grant was the source of the participant incentives.

Interview Protocol Design

The interview protocols were developed from our survey questions and were designed to expand our understanding of the survey data. The relationship between the survey findings and interview findings

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[1] One Scholar who had taken part in an in-depth interview later revealed that they continued to work on their IRDL project. After analysis of the other interviews, we decided not to strike this transcript from our data because we found no differences in unique codes or themes between the other in-depth interviews and focus groups.

will be presented in the discussion section of this article. To reduce any potential response bias, the two program co-directors, who are also co-authors on this research, did not participate in the interviews or focus groups. The lead author of this study, also an IRDL Scholar familiar with the program, conducted in-depth interviews and focus groups. The interview protocols are included as Appendices B (focus group protocol) and C (in-depth interview protocol).

Analysis Plan

The process used for the analysis of the transcript data was collaborative (Guest et al., 2007) and used a deductive, content analysis approach (Weber, 1990). We chose this process to be able to identify the major areas of concern while allowing for discussion and iteration of the codebook, the definitions of codes, and when and when not to apply the codes.

The interviews were transcribed by Transcribeme, a human transcription service. Participants were given the opportunity to redact any comments in their transcripts. Any redactions or corrections were noted by the lead researcher. The transcripts were then de-identified by the lead author and uploaded into Dedoose (SocioCultural Research Consultants, 2023), an online qualitative analysis program that allows for collaborative coding. Two co-authors moved through each transcript independently to apply codes and then met to discuss discrepancies, adjusting the codebook to add clarifications and exemplar quotes. This process was repeated twice in what we call first pass and second pass coding. The first pass line-by-line reading of all the transcripts focused on understanding the possible programmatic impact on the participants' professional lives as we worked to identify following three codes: research productivity, defined for this purpose as it relates to both progress on completion of their IRDL research project and additional research completed and shared in some format; job performance, including how they believe participating in IRDL may have impacted their professional trajectories; and professional identity, which may have resulted in pursuing additional formal degrees, as well as how IRDL may have impacted how they think of themselves as researchers. Upon completion of this initial coding, the excerpts were exported from Dedoose into Microsoft Excel format for further analysis.

In the second pass line-by-line reading of the transcripts, we applied sub-codes for the four sources of self-efficacy (mastery experiences; verbal or social persuasion; vicarious experiences; and physiological and affective states) to the excerpts coded with the three main topics, expanding the codebook to include definitions and rules for application of those additional 12 codes. Two co-authors then moved through the excerpts independently to apply the additional codes, and then met to discuss discrepancies and adjust the codebook. Some passages were double coded. We calculated code frequencies for the three main codes, to assess the prevalence of discussion among all focus groups and in-depth interviews (Bernard & Ryan, 1998, pp. 595-646). These code frequencies are a rough measure of how salient these codes were in this corpus of the interview data. The codebook developed for this analysis is included as Appendix D.

Results

The purpose of this qualitative portion of our assessment study is to explore the lived experiences of IRDL Scholars during the first six years of the program. We were interested to learn the impact of the program on the short-term and long-term research success of participants. The focus of our exploration of short-term success focused on the research project that each scholar proposed during their application to IRDL and that they worked on during their IRDL year. We wanted to learn about the factors that contributed to their completion of the project. However, for our exploration of the impact of IRDL on

long-term research success, we considered participants' research experiences after that year. We examined three outcomes: research productivity, job performance, and researcher identify. Building upon an earlier study that confirmed the positive impact of the IRDL summer research workshop on self-efficacy (Brancolini & Kennedy, 2017), we also examined the influence of research self-efficacy on these outcomes.

We present here the results of the analysis of the transcripts from both the individual and focus group interviews, with representative and illustrative excerpts for the three main codes: research productivity, job performance, and researcher identity; and the subcodes related to the sources of self-efficacy: mastery experiences; verbal or social persuasion; vicarious experiences; and physiological and affective states (coded "emotions" for brevity). These excerpts were carefully chosen after the authors performed two coding passes, each time reconciling coding disagreements per our analysis plan. We also report on common participant experiences around research barriers and supports.

The quoted excerpts are parenthetically annotated with the interview format and the participant code. For example (FG, P88) can be read as focus group participant 88; and similarly (IDI, P58) indicates the excerpt is from the individual in-depth interview with participant 58. The participant codes are artifacts of the original survey study. The full codebook is provided as Appendix D.

Research Productivity

Most of the conversations in both the individual interviews and the focus groups centered around research productivity, with around 70% of the transcript excerpts from focus groups discussing productivity issues, and around 55% of the individual interviews discussing the same. Because IRDL Scholars were not expected to publish the results of their research project in less than one year, for this assessment we have defined *Research Productivity* to be the action of conducting a research project. This definition includes data collection through the step of analyzing their results; while Scholars' Research Productivity may — but does not have to — or may not include sharing their results externally, either through presentation or publication. Of the Scholars who participated in our two-phase assessment, 47% presented at a conference or published the results of their IRDL research (Albarillo et al., 2022, p. 11). Excerpts were coded with *Research Productivity* when the participants described variables both inside and outside the workplace that impacted their productivity as it relates to conducting their IRDL research project. Because it is a multidimensional topic, research productivity was evident in comments about available and desirable institutional research supports, the culture of research within the library workplace, the encouragement or discouragement of peers on conducting research, and research communities and networks. Participants expressed self-efficacy, often used interchangeably with confidence (e.g., Weinberg et al., 1979), in numerous comments. One participant synthesized this multidimensionality with the following comment:

> One thing I'd just like to add-- I really appreciate IRDL for giving me, I guess, more confidence in my ability to do this. Having people who weren't necessarily librarians, but who did research [research workshop instructors] saying, "You can do this. This is possible," and then empowering us to do this, I think it was life-changing. I am now an academic librarian publishing research papers, and I did not think that's where I would end up. So that's fabulous. (FG, P88)

Within the context of research productivity, some participants discussed the impact of completing a step in the research process, their entire IRDL research project, or a subsequent research project. Those

transcript excerpts were coded as *Research Productivity: Mastery Experiences (hereafter RPME)*. *RPME* is illustrated with the following excerpt:

> Something that's helped me -- and I think they said this in IRDL too, but -- just this idea that each project is an opportunity to learn something new and try something new. And I think that's something I've really tried to [laughter] embrace with this past project, is like [laughter] as I'm writing up those results, like, "God, I would have done this so differently [laughter] if I had a chance to do it again. Why did I design it with this small cohort? It was way too small." And just thinking it's not like, "Oh, I'd just throw the whole thing out. It's in my paper. Really embrace that limitation section. Just write it all out there. Next time, I would probably do it differently. And I've just really tried to be honest about that kind of thing and think about it as a learning opportunity. And now I know the next paper won't have those same mistakes and will probably have fun new mistakes, but I think that's something that I've really tried to keep in mind and has been a helpful mindset for me. And so, each of these things is just an opportunity to learn and try something new. (FG, P38)

The participants also commented on the impact of encouragement from their supervisors, librarian colleagues, IRDL program mentor, other IRDL Scholars, or research colleagues at work; and those excerpts were coded as *Research Productivity: Social Persuasion (hereafter RPSP)*. Using Bandura (1977, 1997) we arrived at a definition of *RPSP* for this analysis: evaluative information that one receives from others; verbal praise that communicates a trust in one's capabilities; and/or encouragement from trusted sources. Using that definition of *RPSP,* we see how encouragement from both individuals and professional communities can affect *RP*.

> I would say moral support from my supervisor is really critically important because that then helps with really being able to have that as part of my workweek and part of my doing that on the clock and knowing that if I need help in some way, they will try to help me and they can help guide me to people to talk to or services on campus if I'm having trouble with something. (FG, P31)

> Just having other people on campus who have aligned research goals [who] I can talk to -- it's really important. I found the confidence through IRDL to reach out and join a research cluster. And that has pushed my scholarship in a totally new direction. That's super exciting. And that was financially supported through our university to create these types of clusters. (FG, P35)

In the above example we see that through the IRDL experience, P35 gained a sense of empowerment to join a group of supportive researchers on campus. Confidence gained from participation in the IRDL network can grow to include other networks with positive professional research outcomes, as another participant noted:

> I just built my own research network outside of my library with other librarians. And I found that by publishing with those people, it helped me gain credibility and helped me sort of ease into those faculty research groups. (FG, P88)

Participants also noted the impact of seeing the research successes or failures of other librarians and discussed the influence of the research of other librarians on their own motivation or productivity in their IRDL research projects; those transcripts were coded as Research *Productivity: Vicarious Experiences (hereafter RPVE).*

One participant commented:

> So, I've actually kept up with my mentor a lot and she's been super, super useful. We touch base like once a month and just chat about things we're working on. And she's also getting [an advanced degree] right now, so I think it's been really great for me to connect with her and have that -- I always find it really energizing to talk with someone who's busier than I am [laughter] and doing more work. And then I feel like, "Yeah. I can do a piece of that." (FG, P44)

The participants shared some emotional responses (described by Bandura as "physiological and affective states") to conducting their IRDL research project, both positive and negative, and those excerpts were coded as *Research Productivity: Emotions (hereafter RPE)*. We define *RPE* for this analysis as emotional or physiological reactions to tasks. People interpret these reactions as clues to whether they can perform a given action. Positive emotions/reactions can increase self-efficacy; negative emotions/reactions can decrease it. Emotions associated with the participants' research productivity are exemplified by the two following excerpts:

> I felt really positive about the response that I got from my faculty. … I think I had 12 interviews which felt really nice. And I was happy that I had a good relationship with my departments and that they were willing to talk to me about it because beyond just doing this project, it helps me to know what's going on in their lives with their data. Negatively, I think kind of similar to [other focus group participant], just how long it's taking me to finish and to write this paper and to get it submitted and to be able to actually say I've wrapped up this project, that I have done this paper, and then to kind of maybe move on to something else that is also interesting. (FG, P31)

> And I think often when I finish one part, I feel really proud of having accomplished something. And then I immediately feel like I really need to get working on the next thing, and I'm not doing enough, or I'm not doing it fast enough. So, I think when I finally did my second round of coding and had my defined codebook with my major codes and sub-codes, that felt really good having something so definitive. But I finished that in September, and I only just finished writing up the analysis. And so that long intervening period has just felt like I'm not doing enough. I'm not making enough progress. (FG, P21)

> Okay, I'll go first. When I felt most positively? I think the first time I felt positive about it was actually when I did the first interviews with my faculty, with the teaching faculty. So, I think I felt for the first time when I actually did the first interview with assigned faculty and he was talking and talking and went over time and he just wanted to stay and talk. So, I think that was the first time I felt it could work. I wasn't convinced anything was going to work until I had that first interview. And so, it kind of gave me momentum and made me feel validated. It made sense and somebody who was not a librarian was really interested in teaching students how to learn information. So that was good. And, of course, the next positive was when the first paper was published, I think that was my positive. (FG, P36)

Job Performance

Participants discussed the perceived effects of the research knowledge and experience gained through the IRDL program on their job performance. The dimensions of job performance include: the impact on the quality of the performance of the participants' current job; opportunities for new roles within the same library; meeting tenure and/or promotion requirements and receiving merit increases based in part upon

research productivity. Excerpts were coded with *Job Performance* when the participants mentioned applying research skills gained through participation in IRDL to their job duties or to new roles; noted specific ways that they perceived that research skills gained at IRDL enhanced their performance; or mentioned an increase in confidence in assisting faculty and students with their research. In the focus groups job performance accounted for only about 10% of the total transcript excerpts, but in the individual interviews the topic accounted for about 23% of the conversation. Consequently, many fewer Bandura self-efficacy codes were applied to segments that had been coded *Job Performance* than for *Research Productivity*. One participant's comment illustrates the interaction between their research skills and their job performance:

> Another time within the past year that's been really a high point for me is teaching more classes on data or open science and being able to speak to more of my own experiences as a researcher, and having gone into this project with the specific mindset of, "I'm going to publish a preprint. I'm going to make my data open. I'm going to publish in an open-access journal," really trying to walk the walk. And being able to speak to that now in a class when someone's like, "Well how much time did it take you to prep your stuff?" I can be very honest and say, "It actually took [laughter] a really long time," and know some of the pitfalls that folks might encounter, and then be able to just address some of their, maybe, fears or just have very realistic, grounded answers and be able to cite that in the classes that I teach. (FG, P38)

Participants discussed how they felt when they perceived that research skills gained through the IRDL program had impacted the way they did their job, or were recognized by their supervisor or colleagues; these excerpts were coded with *Job Performance: Mastery Experiences (hereafter JPME)*. One participant noted:

> [My] current library just went through the process of strategic planning. I was a member of the strategic planning committee. And I actually joined midstride because they appointed me to that committee after I was hired. So, some of the work had already happened including they had the idea, "Wouldn't it be great for our strategic planning purposes if we listen to our users." And so, they conducted interviews. And so, they'd already planned to do a whole bunch of in-depth interviews with faculty, undergraduate students, and graduate students. And I came in and helped with developing the instrument and doing some of the coding and analysis and identifying themes that emerge from the interviews and then presenting them to library staff. And it all underwent IRBs so that we could not just use it for kind of applied professional work. We could publish about it. And so that is a very direct, a very like one-to-one relationship between things that I learned at IRDL, and how it's been entwined in my practice as a library worker. (IDI, P81)

Discussion of the impact that research encouragement or criticism had on their job performance was coded as *Job Performance: Social Persuasion (hereafter JPSP)*. Only one excerpt from a focus group was coded with this code; no excerpts from individual interviews were coded as such. One participant recounted a conversation with a colleague after a job change presented a time challenge in conducting research:

> This was something I really struggled with when I moved from being in just a liaison position into kind of this now hybrid position. I was like, "I just can't do the research that I'm doing. I don't have time to do 12 interviews in two weeks at the end of the semester like I used to." Not to mention all the logistics of trying to schedule all that. And I had a really long conversation with my supervisor at the time. And she's just like, "Yeah, your research is going to look different. It's going to have to look different." (FG, P85)

The researchers looked for but found no comments about the impact of seeing someone else's research success on the performance of their job. Any such comments would have been coded *Job Performance: Vicarious Experiences*, *(hereafter JPVE).* More specifically, we defined *JPVE* for this analysis as observing the actions of others and making inferences about themselves and what they can do. Models also provide observers with more effective ways of doing things; watching others overcome adversity.

The code of *Job Performance: Emotions (hereafter JPE)* was used when participants described positive affective dimensions, such as feelings of confidence, curiosity fulfillment, and professional empowerment in the workplace, or negative affective dimensions, such as feelings of isolation, frustration, or anxiety around the impact of conducting their IRDL project on their job performance. Only two excerpts from focus groups were coded with *JPE*; no excerpts from individual interviews were coded as such. An illustrative excerpt follows:

> I think what you were just saying at the end there is kind of, I mean, similar at my library where it's kind of like if you – so we are also not required to present or do anything like that, but I also find it fulfilling and it's important to me, and I also feel like maybe it's not required at my current institution, but if I want to have other opportunities in the future, it's something that I think is important to do, so I love it, and it's one of my more favorite parts of the job. (FG, P01)

Researcher Identity

Approximately 20% of the conversation in both individual interviews and focus groups was about the participants' dual identities as both librarians and researchers. For this analysis we define *Researcher Identity (hereafter RI)* as: the manifestations of the participant's dual identity as a librarian and a researcher. *RI* was present in three dimensions when librarians discussed their role as producers of library and information science research:

- Community, seeking other librarians or researchers to explore mutual interests or form collaboration; this dimension may include seeking service opportunities, such as working on a research committee;
- Professional development, seeking opportunities to improve their skills and abilities around research methodologies; and
- Impact, expressing a desire to contribute their skills and knowledge as a researcher to goals in the profession or organization.

Most of the participants in this study commented on the importance of having a research community. While we did not code for research community specifically, many participants spoke about becoming part of a research community created by the participants in the IRDL program. Participants mentioned community in the context of research supports that can be found within their immediate work environment. They also noted that community also exists outside of their work environment, which emerged when participants discussed how IRDL introduced them to a larger community of practice.

Participants spoke of the ways a community of practice can facilitate research relationships. For example, this participant formed multiple research partners in their cohort: "When I was at IRDL, I met a number of people that have become research partners for me now" (FG, P19). The transcripts revealed that IRDL led to the formation of research partnerships and increased their research networks.

And then I also met a bunch of really cool, interesting smart people who were doing cool, interesting smart things. And it was nice to be able to talk to them and learn about what they were doing. And then I also got a lot out of talking to all of the instructors and people -- the people who were coming in to teach us and being able to talk to them and hear about -- to get their expertise and to get their feedback on what I was doing was also really helpful. So. And I think that even now, with the [private] IRDL Facebook [group page], when people will write in that they're doing some work or they just got an article published or some-- maybe their library is hiring or something, I think that the network that it creates is also invaluable (IDI, P18).

The participants noted that not only does IRDL create networks around library research, it provides a shared experience that includes a common vocabulary around library research. One participant commented:

I mean, just having a conversation right now like we are now and you suggesting that if we ever wanted to share ideas or meet up or something, it's like, "Hey, you did IRDL? I did IRDL. Let's talk." So, I do think that there are definitely connections that can be taken advantage of. (IDI, 98)

Another participant commented on the interrelatedness of career and research networks, a connection that creates more opportunities for IRDL participants who may not have considered the kinds of career opportunities brought about by the intersection between research networks and career networks:

And so, the aftereffects of IRDL, when I would get requests from IRDL to map out my research network and map out my network caused me to start thinking about, "What are my career networks overall?" And to kind of be very deliberate in thinking about who might know other things to help me. (FG, P70)

The same participant also emphasizes the positive professional outcomes in combining research and career networks:

So, I can say that what you were just saying, [other focus group participant], about people contacting you or seeing that someone else has cited your work really does make me feel good and it makes me feel like, "Yeah. All that time and energy that I spent during that time was worth it, and it did help the community overall." (FG, P70)

Participants also commented throughout the interviews on finding a research community within the library profession. One discussed having the confidence to seek out their own community of researchers:

I definitely echo the sentiments of kind of a cohort of people to talk about it with and keep accountable. I feel like I'm much more motivated to do research. If I'm talking about other things, then research doesn't really cross my mind and I put it off. So, it's inspiring to talk to other people about their work, it makes me think about things differently. So certainly, to keep the motivation there, I need to be in a community that's valuing it and thinking about it. (FG, P12)

Participants often discussed the importance of the research community in conjunction with other institutional supports, such as the availability of travel funds:

Travel funds -- I don't know if anyone mentioned this -- were useful. You get to schmooze with people at conferences, develop relationships. If nothing else, I've sent off papers to colleagues that

I've met at conferences or been introduced to and they've given critical feedback. And that's been really useful to me. Finding people with complementary skill sets. (FG, P45)

Participants connected their professional identity to their success in completing their IRDL research project or subsequent research; those excerpts were coded with *Researcher Identity: Mastery Experiences (hereafter RIME)*. Commenting about this, two participants noted:

But I think the highlight for me was submitting from this big project; I've had [more than one] paper, and one was just sort of like a mini analysis of the first round of transcripts that I had. And just the process of writing it up and submitting it, it felt so much better than papers I've written in the past where I didn't approach it with such a rigorous project in mind. Where, I'd written papers in the past and I got them published, but it was sort of like [laughter], "What was the method that I used?" I'm trying to think about-- as I'm writing it up. And so, this one, it just felt so much clearer. And the response from reviewers was really good, and then the response, when it was published, was really positive too. And somebody that I really follow on Twitter was like, "Oh. This is like one of the clearest-written articles I've ever [read] [laughter]." (FG, P38)

The most valuable part [of IRDL] was just doing a project that I wouldn't have done before. It's given me more confidence with the research process more generally. And it just felt like kind of a nice step up. And so, the next project that I do I think I'll be more confident, and so kind of like working my way up. (IDI, 58)

When the participants related the encouragement or support of their library colleagues, IRDL cohort members, or mentor to their new or enhanced identity as a researcher, those excerpts were coded with *Researcher Identity: Social Persuasion (hereafter RISP)*. One participant commented:

"I've got all these skills; I'm going to go find new like-minded people." And I did. And now we produce papers together, we do research together, and I just keep finding people who are interested in the same sort of stuff, and then I just kind of drag them along with me. (FG, P88)

The researchers coded comments about the impact of observing the research success of colleagues or mentors as a factor in the participant's new or enhanced professional identity as *Researcher Identity: Vicarious Experiences (hereafter RIVE)*. One participant noted:

I've actually seen her [my IRDL mentor] at a couple of conferences. And so, she was at [redacted name of conference] also and so we were able to go out to dinner. And then we were able to meet up at [redacted name of conference] and got a bite to eat too. And so that's been—I've really liked being able to kind of connect with somebody who's further along in their career. And have kind of a mentorship and friendship at the same time, so I really appreciated that. (IDI, P58)

Participants related both positive and negative feelings about their IRDL research project as contributing to their professional identity; those excerpts were coded with *Researcher Identity: Emotion (hereafter RIE)*. Two examples illustrate emotions associated with research, one from a focus group that represents comments about the satisfaction of contributing their research to the academic library profession; and the other from an in-depth interview that represents the emotional impact the time it takes to complete a research project.

The thing that really is very rewarding to me is when I can see that there's been some impact to my work like somebody has cited an article of mine, or -- Somebody emailed me today and was like, "I really liked the survey instrument that you developed for this study. Would you be fine with me reusing that?" So having those sort of outside reminders, that there's actually -- there's a reason I'm doing this and people are benefitting from it -- is really nice. (FG, P44)

Currently, I am anxious to get it done. I feel like it's been-- I am putting pressure on myself. I'm not getting pressure from anybody else although I know my partner who is helping me with this is also anxious to get it done. And so, I am slightly annoyed that it's taken us this long. But I also when I have these kinds of brief glimpses of excitement that we're getting close and that we're sometimes we'll be talking and we'll both be excited about this stuff. And that it's kind of this conflict between excitement about what we're doing and getting close, and then kind of frustration and annoyance having to write it down and boil it down into something that's readable. (IDI, P58)

Barriers and Supports

In the first phase of this study (Albarillo et al., 2022, pp. 29-31), we presented the survey participants with a list of possible research supports and barriers they may experience at work. In this second phase, we used those lists to prompt participants to elaborate on what they believed were the most important supports and the most significant barriers to conducting research in their workplaces. We also expected that the discussions would elicit additional barriers and supports that were not listed in the survey. However, no additional supports or barriers were mentioned in the interviews. Surprisingly, the barrier that scored the highest in the survey, "Lack of experience using specific research methods," was not mentioned. Instead, we found instead rich discussions around tenure pressure, isolation, research climate, and mentorship.

The topic of tenure and promotion arose repeatedly, summarized well by this comment in a focus group:

But I feel like if you're in a place where research is not a requirement, that can be a barrier, but then if you're in a place where tenure is a requirement and there's so much pressure, it's a barrier too. (FG, P56)

The difficulty of finding like-minded researchers within the library where the participant works was also noted:

I think a barrier for me -- and I kind of hinted at this earlier -- is I feel so lonely. The kind of things that I like to do, nobody else in the library likes to do. And I know obviously we're in the 21st century. We can collaborate online and things like that, but I like face-to-face interaction. I want to be able to sit down with somebody and have a cup of coffee and talk about something. And I just don't have people to talk to. I don't have people to talk to at all. (FG, P57)

Another participant from a different focus group commented:

Where I find a huge struggle is my colleagues. No one is interested in research. When I've tried to, "Oh, I'm going to give this talk. Can I do a practice run for everybody?" I have one person show up and it's because they like me. They don't really want to hear it, but they're like, "Oh, I feel sorry for you. No one is going to come [laughter]." (FG, P07)

Other participants have been successful in finding supportive individuals within their library and this has proven essential for many of the study participants. A focus group participant noted:

> Fortunately, my boss and the rest of the library [are] very supportive of research and making sure that we have time to do that and, of course, balancing it with everything else that they require us to do. And I feel really lucky because the research climate is really collaborative. So there have been a couple of papers that have been published where I've been able to be a part of it through working with other people. So yeah, I really appreciate that. (FG, P31)

Another commented:

> I think that mentorship and support of all kinds have been really helpful. I think both the moral support and mentorship from my supervisor around research has been really critical. She's one of the people who has invited me to participate in a couple of her own research projects. And just working with somebody who's more experienced to conduct qualitative studies and qualitative analysis definitely helped me reflect on my own research. (FG, P21)

Discussion

Conducting focus group and individual interviews with IRDL participants who responded to our survey instrument in the first phase of our assessment project enriched our understanding of the impact of the program on individual participants. The interview data highlighted their perceptions related to research productivity, job performance, and researcher identity. Their comments gave us insights into the ways the IRDL experience addresses the four sources of self-efficacy, specifically research self-efficacy. In this section we discuss how IRDL increased research self-efficacy, which has been shown to contribute to research productivity (Livinţi et al., 2021).

Research Productivity and the Concept of Research Persistence

The qualitative phase of our assessment project piqued our interest in a possible factor for librarians becoming long-term researchers: research persistence. In the first phase of this study, Albarillo et al. found that continuing to do research after their IRDL project (a concept we are calling research persistence) may be a better measure of long-term impact on research productivity of the participants (2022, p. 11), rather than simply completing the IRDL project. In our analysis of the transcripts, we see some evidence that is supportive of the concept.

We believe that the concept warrants separate study, as it is clearly multidimensional and may be associated with the sources of self-efficacy. We highlight here just a few examples of our observations from the transcript analysis to illustrate the facets of this concept. Research persistence may be associated with both with the mastery experience and emotions. One participant noted that, "And I think often when I finish one part, I feel really proud of having accomplished something" (FG, P21). This participant emphasized the emotional importance of "feeling proud" of identifying and finishing steps in a research project, a skill taught at IRDL.

Once an individual learns research skills and begins to apply these skills from one project to another, they begin to understand that only through the practiced application of research skills will they improve. One participant commented that, "…each project is an opportunity to learn something new and try something new…" (FG, P38). This participant recognized that research projects are learning opportunities and

occasions for mastery. They also reinforce the concept of research persistence in their comment that, "…I know the next paper won't have those same mistakes and will probably have fun new mistakes, but I think that's something that I've really tried to keep in mind and has been a helpful mindset for me." Persistence, despite mistakes, anxiety, and frustration can lead to mastery of skills, internalization of small successes, and research productivity.

In our interviews, we observed that research persistence may be influenced by positive emotions produced by encouragement, small wins, and finding a community of practice. These findings suggest that librarians who conduct research should have the metacognition that completing a research project is not an overwhelming, singular task; rather it is process is comprised of discrete and often iterative steps that improve over time: proposal writing, research design, data collection, analysis, synthesis, writing, and presenting.

Mentors and Community

As demonstrated by participant excerpts about people in their local work environments acting as a research support, mentors and research communities play a strong role in motivating and encouraging the participants in this study to become comfortable with and successful in research. These qualitative findings are consistent with recent quantitative results on the impact of peers and community on academic librarian research productivity (Hoffmann et al., 2023). The majority of comments related to mentorship and community were found in excerpts coded *SP*.

RPSP codes identify examples of the supportive role that mentors, colleagues, and other members of a research community play as a source of research advice and encouragement. For example, P31 focused on how a supportive supervisor provided important advice and institutional knowledge on how to navigate who to speak with on campus "…they will try to help me and they can help guide me to people to talk to or services on campus if I'm having trouble with something [related to my research]." The intentional process of developing one's personal learning networks (Rajagopal et al., 2012) that is taught and modeled in the IRDL curriculum showed P35 how community can influence a researcher: "I found the confidence through IRDL to reach out and join a research cluster. And that has pushed my scholarship in a totally new direction." Similarly, from their IRDL experience P88 gained the confidence to join faculty research groups. P85's comment coded *JPSP* illustrates how new work responsibilities can come into conflict with existing research commitments, and how important it is for a supervisor to acknowledge the transition in a supportive way:

> "And I had a really long conversation with my supervisor at the time. And she's just like, 'Yeah, your research is going to look different. It's going to have to look different.'"

The transcript excerpts coded as *RISP* show us that the participants believe that communities can increase their individual agency, which in turn can create more research opportunities and collaboration. Once a relationship is established mentors can become friends and senior colleagues, so mentoring and supervising can turn into stronger professional friendships. Conversely, the lack of a research mentor or community can lead to feelings of isolation and anxiety.

Researcher Identity

In reporting the findings of the survey data from the first phase of this research, we noted that before participating in IRDL, 32% of the survey respondents identified as a librarian-researcher, but 79% stated

that they currently identify as a librarian-researcher, an increase of more than 47% (Albarillo et al., 2022, p. 15). This change in professional identity is statistically significant and is especially meaningful since other research suggests that identifying as a researcher may be related to research productivity (Brew et al., 2016). While we did not prompt discussion on the topic during the interviews, it emerged naturally. As noted in the results, 20% of the codes mentioned identity as librarians and researchers. Most importantly, in the transcript excerpts coded as *RI*, participants connected their research skills to research communities as P88 did: "I got all these skills; I'm going to go find new like-minded people." The excerpts coded as *RISP* show that research is a social process, with an audience, shared practices and practitioners.

The IRDL curriculum was intentional about increasing participants' awareness of their networks, as P70 recalled, "…I would get requests from IRDL to map out my research network and map out my network caused me to start thinking about, 'What are my career networks overall,' and to kind of be very deliberate in thinking about who might know other things to help me." What we learn from the excerpts coded as *RIME*, about mastery experiences, is that IRDL creates an opportunity for a guided research experience. As P58 noted, "The most valuable part of IRDL was just doing a project that I wouldn't have done before. It's given me more confidence with the research process more generally." Identifying as a librarian researcher and having shared research experiences empowered the participants to find or create their own community of practice.

Implications for Research Support

The IRDL is a unique and specialized continuing education program for novice librarian researchers. However, many findings of this program assessment have practical implications for librarian researchers, their supervisors, and the administrators of the libraries where they work. The IRDL participants themselves offer insights and guidance for individuals and institutions seeking to improve research support for librarians. We believe that maximizing the sources of self-efficacy, especially mastery learning and verbal encouragement, contribute to increased self-efficacy and to research success. The interviews revealed the complex interaction of personalities, individual circumstances, and research environments in which librarians become researchers.

Library leaders can increase research self-efficacy by creating and nurturing a research community that provides a supportive environment for librarian researchers. It is important for librarian researchers to find a research community at their own library but also through consortia, professional associations, and conferences. Members of the community support one another through verbal encouragement and celebrating one another's research success. The community also provides opportunities for finding research mentors and collaborators.

Research mentoring is a well-established research success factor in other practitioner-research professions, but it has not been extensively studied among librarians (Hoffmann et al., 2014). Mentorship is widespread in academic librarianship and some researchers have focused specifically on research mentoring (e.g., Ackerman et al., 2018; Smigielski et al., 2014). Mentorship helps librarians persist and pivot when research projects and job responsibilities need to be rebalanced. Mentors are often colleagues in the library, but participants in our study found mentorship and community among the faculty at their institutions and across the profession. The IRDL mentoring program offers a model for formal mentoring outside a librarian's home institution (Jason et al., 2021).

Verbal encouragement and moral support matter. This support may come from other librarian researchers, faculty researchers, or research consultants on campus. Creating a supportive, learning-oriented environment is critically important for novice researchers, but all researchers benefit from a library with a strong research culture, one that values risk-taking and mutual support. In addition to the more common supports – release time for research, financial support for incentives and statistical support, and travel funding – the need to find peers and community is strong. Librarians who are part of a research community feel less isolated and have more opportunities for learning, mastering, and maintaining their research skills.

Limitations and Future Research

This study has similar limitations as our companion paper (Albarillo et al., 2022), in that the population was self-selecting and motivated to learn social science research skills. Another limitation involves the data representing a singular moment in time. The interviews were conducted at the height of the COVID-19 pandemic, which has consequences beyond the scope of this paper but undoubtedly affected the participants and their ability to pursue their research agendas.

We had expected to see evidence of fundamental differences between the participants who had completed their IRDL projects or were continuing to conduct research (those in the focus groups) and those who indicated that they had not completed their IRDL project and were not continuing with research (those in the in-depth interviews). However, we did not find any thematic distinction (no unique codes or themes) between the two sub-populations and so determined that further analysis to describe differences was not warranted. It is possible that differences may be evident in a post-COVID-19 era, and we have earmarked this for future research consideration.

We also found that the participants in the study exhibited high levels of persistence in both the completion of their IRDL research and subsequent research projects. Many discussed challenges that they faced and overcame to complete their research. It would be interesting to learn more about sources of research persistence among academic librarians. Possible sources include external factors, such as promotion and tenure; internal factors, such as identity as a researcher and positive feelings associated with the research process; and community factors, such as the encouragement of supervisors, colleagues, and research collaborators.

Conclusion

This second phase of our study, designed to assess the effectiveness of the IRDL program, gave participants the opportunity to give us their insights into the specific ways they believe that it contributed to their research productivity, job performance, and professional identity. Participants discussed issues surrounding the concept of research persistence, organizational culture, research community, and identity as a researcher. The findings from the focus groups and in-depth interviews deepen the meaning of the results from the quantitative phase of our research. The participants in the study experienced both frustration and satisfaction with their research. Regardless of challenges and setbacks, most of the study participants completed their IRDL project and moved forward with new research projects; they exhibited persistence and a commitment to research. A supportive environment focused on helping librarians gain needed research skills, practice those skills, and become part of a research community contributes to research confidence and productivity, improved job performance; and identity as a researcher.

Author Contributions

Frans Albarillo: Investigation, Formal analysis (lead), Data curation, Methodology (lead), Writing – review & editing **Marie R. Kennedy:** Conceptualization, Formal analysis (supporting), Funding acquisition (lead), Investigation, Methodology (supporting), Project administration, Supervision, Qualitative Analysis, Writing – original draft, Writing – review & editing **Kristine R. Brancolini:** Conceptualization, Funding acquisition (supporting), Methodology (supporting), Qualitative Analysis, Writing – original draft, Writing – review & editing

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Appendix A
Recruitment Emails
Focus group

Dear IRDL Scholar,

I hope you are safe and well. My name is (Author's Name Removed for Peer Review), and I am the principal investigator for Research Productivity and Career Impact of the IRDL, an IRB-approved study, HRPP file number 2019-0747 (Author's Institution Removed for Peer Review), is the IRB of record.

I am emailing because you participated in an IRDL survey last Fall 2019, where you indicated your willingness to participate in online focus groups. I am convening the focus groups from June 1 - June 13.

Please complete this Doodle Poll by Thursday, May 28, next week, and I will select the time that works best for the group. I am asking for your preferred email, where you will receive your gift card.

https://doodle.com/poll/[redacted]

After you complete the survey, I will send you an email with the oral consent form and the Zoom appointment invitation. Please note that this online focus group will be recorded, transcribed, and later analyzed.

As an incentive, you each will receive a $100 gift card for participating in the one and half hour focus group. You can select most gift cards from giftcards.com or receive an Amazon gift card. Unfortunately, we cannot award Visa or Mastercard gift cards.

Thanks again for your interest in this research. I hope you stay safe and have a wonderful weekend.

Sincerely,
2014 IRDL Scholar
Reference and Instruction Librarian
Associate Professor
Brooklyn College, City University of New York
Email: Falbarillo@brooklyn.cuny.edu

Individual interview
Dear IRDL Scholar,

On behalf of IRDL, I would like to thank you again for participating in our Fall 2019 IRDL Survey of Past
Participants.

I am contacting you because you have indicated that you are interested in participating in a 60-minute
online in-depth interview using the Zoom Video Conferencing system.

In this interview, your oral consent will be obtained, and you will be asked about your IRDL experience.
The interview will be recorded, transcribed, and analyzed. If you are planning to use a mobile

device, please be sure that the display is large enough to be able to read PowerPoint text during the interview. I will be sharing a PowerPoint to show question prompts.

There will be no video during the interview, just audio. Prior to the analysis, the data from the interview will be anonymized, and findings from the interviews and focus groups will be published.

As an incentive to participate, you will receive $100 gift card of your choice (from giftcards.com). Unfortunately, we can't give you a Visa or Mastercard gift card, but you can choose from the many other companies.

To move forward and schedule an interview, please fill out the Doodle Poll below. The poll indicates my availability for the next two weeks. Choose a time that works for you. If you need more availability, please send me an email. The poll will also ask you for your preferred email, where I will send the Zoom invite and your gift card.

- https://doodle.com/poll/[redacted]

All best,
Frans Albarillo
2014 IRDL Scholar
Reference and Instruction Librarian
Associate Professor
Brooklyn College, City University of New York
Email: Falbarillo@brooklyn.cuny.edu

Appendix B
Protocol for Focus Groups

Introduction 5 minutes
Welcome to the focus group. We are convening this interview because we are interested in understanding more fully the supports that have been important to you in your research process and the barriers to success that you have encountered. By research we mean having an idea related to your work, turning this idea into a proposal for the project, collecting data, analyzing data, and reporting the results.

1. What is it like working where you do today, and trying to fit in research? How would you describe the research climate in your library?
>
> Sub-questions:
>
> Is it a collaborative environment?
>
> How are research projects or special projects generated?
>
> Where does research fit in with your job?

2. I'd like you to think about the kind of support you get at work for you to be successful at doing research, today. I'm going to show you a list that we gave you in the survey and then I'd like you to take a few minutes and pick your top 5 and think about why these are your top 5. And are there other kinds of support that are not on this list? If there, please include them in your list.

After you are done with your list just say I'm done so I'll know who's ready. And then when everyone is done, we will share the list, is everyone comfortable with that? In the survey we mentioned the following [Show slide with list and simple definition of research]

1. Moral support from my supervisor
2. Mentorship from my supervisor
3. Mentorship from someone other than my supervisor
4. Release time during the work week
5. Short-term or pre-tenure research leave
6. Sabbaticals
7. Travel funds (full reimbursement)
8. Travel funds (partial reimbursement)
9. Research design consultant or statistical consultant
10. Research grants
11. Research assistants (e.g., student workers or short-term project hires)
12. Formal research mentors
13. Workshops or other forms of continuing education

[After the group has indicated they are ready.]
Ok, let's go one at a time and share which top five supports are the most important for you and why.

[Facilitator will wait for each participant to share their responses. After each participant has shared their response facilitator will ask this question]
Now that you have shared with each other your top five work related supports, is there something you would like to add or change, or modify after hearing what your colleagues have said?

3. I'd like you to think about the barriers to research success you encounter at work when you are doing research, today. I'm going to show you a list that we gave you in the survey and then I'd like you to take

a few minutes and pick your top 5 and think about why these are your top 5. And are there other kinds of barriers that are not on this list? If there, please include them in your list.

After you are done with your list just say I'm done so I'll know who's ready. And then when everyone is done, we will share the list, is everyone comfortable with that? In the survey we mentioned the following. [Show slide with list and simple definition of research]

1. Lack of experience using specific research methods
2. Given new job responsibilities in the same position
3. Changed jobs
4. Lack of access to needed research-based literature
5. Receiving Institutional Review Board (IRB) approval
6. Access to the study population
7. Access to online survey software
8. Knowing how to use online survey software
9. Organizing and preparing quantitative data for analysis
10. Analyzing quantitative data
11. Organizing and preparing qualitative data for analysis
12. Analyzing qualitative data
13. Low response rates from study participants
14. I collected unusable data
15. Reporting results in a written format
16. Reporting results in a webinar format
17. Reporting results as a poster presentation, presentation, or panel in a meeting, conference, or workshop format

[After the group has indicated they are ready]
Ok, let's go one at a time and share which top five supports are the most important for you and why.

[Facilitator will wait for each participant to share their responses. After each participant has shared their response facilitator will ask this question]
Now that you have shared with each other your top five work related supports, is there something you would like to add or change, or modify after hearing what your colleagues have said?

4. Are there any PERSONAL supports or barriers you'd like to mention?
        Sub-questions:
        Family or partner support, commute time, financial concerns, etc.
5. Over the past year, can you recall a time when you have felt positively about your research. Can you describe that situation and the emotion you felt? Can you recall a time when you felt negatively about your research?
        Sub-questions:
        Emotions can be things that are positive like something that is exciting or proud or negative like overwhelming or frustrated around getting a project approved, or seeing your article come out in a publication
6. Is there anything about supports or barriers to your research success that we haven't talked about yet, but that you think are important to mention?

Appendix C
Protocol for Individual Interviews

Welcome to the in-depth interview. We are convening this interview because we are interested in understanding more about your experience as an IRDL Scholar.

1. How did you find out about IRDL?
2. What motivated you to apply to IRDL?
3. Can you talk a little bit about what kind of expectations you had going into the IRDL program?
4. Were these expectations met? How? (Or if not, explain why your expectations were not met).
5. What are some memories you have about working with IRDL?
1. Sub-questions:
2. What do you remember about designing your project, meeting IRDL colleagues, IRDL on social media or meeting other scholars from other cohorts?
6. What do you consider to be the most valuable about your participation in the IRDL program?
7. Can you talk about your IRDL year after attending the Summer Research Workshop?
3. Sub-questions:
4. When did you actually begin working on your project?
5. What was the first couple of months back at your institution like?
6. Do you remember the kinds of barriers, supports you encountered?
7. Can you talk about your IRDL project, and how it went?
8. Sub-questions:
9. Did you attend the monthly check-ins?
   Did you reach out to people from your cohort to discuss your project?
10. Have you conducted other projects besides your IRDL project? And can you tell me about them?
11. Sub-questions:
12. For example, do you do book reviews, have creative projects?
13. Are there non-work things that take up most of your time and mental space?
14. These could be professional or personal, things that are important to you.
15. 10. Thinking about what you learned during IRDL have you applied any of that knowledge to other aspects of your work?
16. 11. Do you reach out to the network you gained at IRDL for other aspects, both personal, work or career related?
17. Sub-questions:
18. Did you establish a professional or personal friendship with people in the IRDL network? Are you friendly with IRDL scholars at conferences?
19. 12. How would you characterize your IRDL experience?

Appendix D
Codebook

Code	Definition	Indicators	When to Use
Researcher Identity	Manifestations of the IRDL Scholar's dual identity as a librarian and a researcher.	Scholar has become a research resource in their library; become a reviewer for a peer-reviewed journal; contributes to the culture of research in their library or university; participates in a community of researchers or a research network; explicitly states that they identify as a researcher.	Use this code when Scholars make statements about personal beliefs, attitudes, and perceptions on the topic of their role as a researcher. May be a description of research related activities or a reflective statement about their identity as a researcher or scholar.
Subcode: RI - Enactive Experience/Mastery Experience **Shorter code label: RI Mastery**	The most logical precursor to one's sense of efficacy is how one has performed in the past. When one reaches a goal just beyond the last one they have set, belief in one's abilities is increased. Previous successes typically raise one's self-efficacy. Mastery experiences provide a powerful boost to self-efficacy.	Scholar associates their research success or increased research confidence with the accomplishment of specific research-related tasks.	Use this subcode when a Scholar connects their identity as a researcher to their success in completing the IRDL research workshop, their IRDL research project, or additional research.
Subcode: RI - Social Persuasion	Evaluative information that one receives from others. Verbal praise that communicates a trust in one's capabilities. Encouragement from trusted sources.	Scholar notes the positive impact of verbal encouragement from other researchers or their peers in completing a research task or a research project.	Use this subcode when the Scholar relates the encouragement or support of their library (dean/director, supervisor, colleagues), IRDL colleagues, or mentor either during the workshop or sometime throughout the year (check-ins, working with mentor) to their new or enhanced identity as a researcher.

Subcode: RI - Vicarious Experience/Modeling/Mentoring Shorter code label: **RI Vicarious**	Observing the actions of others and making inferences about themselves and what they can do. Models also provide observers with more effective ways of doing things. Watching others overcome adversity.	Scholar recognizes the research success of others and applies it to their own situation.	Use this subcode when the Scholar connects observing the research success of others on their own identity as a researcher. The Scholar may mention the research of other Scholars, their colleagues, or a mentor as a factor in their new or increased identity as a researcher.
Subcode: RI - Arousal/Emotions Shorter code label: **RI Emotions**	Emotional or physiological reactions to tasks. People interpret these reactions as clues to whether or not they can or cannot perform a given action. Positive emotions and reactions can increase self-efficacy; negative emotions and reactions can decrease it.	Scholar notes how they feel or felt about research tasks or research situations.	Use this subcode when the Scholar connects their positive or negative feelings about a research task or outcome to their identity as a researcher.
Job Performance	Manifestations of the Scholar's newly-acquired research knowledge and skills on their job performance and job success.	The Scholar notes specific ways that research skills can or are enhancing their job performance; increased confidence in helping faculty and students with their research or in their research-related instruction. Scholar notes the requirement to conduct and publish research to achieve tenure, promotion and/or annual merit increases.	Use this code when the Scholar describes a relationship between research success and job performance, including in the quality of their performance as a librarian or with regard to tenure and promotion.

Subcode: JP - Enactive Experience/Mastery Experience **Shorter code label: JP Mastery**	The most logical precursor to one's sense of efficacy is how one has performed in the past. When one reaches a goal just beyond the last one they have set, belief in one's abilities is increased. Previous successes typically raise one's self-efficacy. Mastery experiences provide a powerful boost to self-efficacy.	Scholar associates their research success or increase in confidence with the accomplishment of specific research-related tasks.	Use this subcode when the Scholar describes the relationship between their research skills and the way they conduct their job, the quality of their job performance, or the recognition of their supervisor or colleagues. NOTE: If the Scholar discusses the influence of their research mentor on the performance of their job, code as **JP Social Persuasion**.
Subcode: JP - Social Persuasion	Evaluative information that one receives from others. Verbal praise that communicates a trust in one's capabilities. Encouragement from trusted sources.	Scholar notes the positive impact of verbal encouragement from other researchers or their peers in completing a research task or a research project.	Use this subcode when the Scholar describes the impact of research encouragement from mentors, supervisors, and colleagues (positive) or research criticism (negative) on the performance of their job.
Subcode: JP - Vicarious Experience/Modeling/Mentoring **Shorter code label: JP Vicarious**	Observing the actions of others and making inferences about themselves and what they can do. Models also provide observers with more effective ways of doing things. Watching others overcome adversity.	Scholar recognizes the research success of others and applies it to their own situation.	Use this subcode when the Scholar discusses the impact of seeing other's success in research on the performance of their job.

Subcode: JP - Arousal/Emotions Shorter code label: JP Emotions	Emotional or physiological reactions to tasks. People interpret these reactions as clues to whether or not they can or cannot perform a given action. Positive emotions and reactions can increase self-efficacy; negative emotions and reactions can decrease it.	Scholar notes how they feel or felt about research tasks or research situations.	Use this subcode when the Scholar connects positive or negative emotions about their research skills or success to improvements or changes in job performance.
Research Productivity	Manifestations of factors that impact the research productivity, defined for this study of IRDL Scholars as: conducting a research project through the step of analyzing their results; may or may not include sharing their results externally, either through presentation or publication.	Scholar associates participation in IRDL with research productivity.	Use this subcode when the Scholar describes elements of the IRDL experience that contributed to their research productivity. When the Scholar notes that research is an expectation or condition of employment, also code **Job Performance**.
Subcode: RP - Enactive Experience/Mastery Experience Shorter code label: RP Mastery	The most logical precursor to one's sense of efficacy is how one has performed in the past. When one reaches a goal just beyond the last one they have set, belief in one's abilities is increased. Previous successes typically raise one's self-efficacy. Mastery experiences provide a powerful boost to self-efficacy.	Scholar associates their research success or increased research confidence with the accomplishment of specific research-related tasks.	Use this subcode when the Scholar describes impact on research productivity of small successes or meeting goals for completion of their IRDL project or another research project; use when the Scholar describes the impact of completing their IRDL research on subsequent research.

Subcode: RP - Social Persuasion	Evaluative information that one receives from others. Verbal praise that communicates a trust in one's capabilities. Encouragement from trusted sources.	Scholar notes the positive impact of verbal encouragement from other researchers or their peers in completing a research task or a research project.	Use this subcode when the Scholar notes the impact on research productivity of encouragement or discouragement on the part of their supervisors, librarian colleagues, IRDL mentor, or IRDL Scholars. Use when the Scholar describes the impact of their research network or collaborators on their research productivity.
Subcode: RP - Vicarious Experience/Modeling/Mentoring **Shorter code label:** RP Vicarious	Observing the actions of others and making inferences about themselves and what they can do. Models also provide observers with more effective ways of doing things. Watching others overcome adversity.	Scholar recognizes the research success of others and applies it to their own situation.	Use this subcode when the Scholar notes the impact on research productivity of observing the research success or failures of other librarians; or the influence of the research of other librarians on their own motivation or productivity, including comments about their research network, the positive influence of their IRDL mentor, members of their IRDL cohort, or other IRDL Scholars.
Subcode: RP - Arousal/Emotions **Shorter code label:** RP Emotions	Emotional or physiological reactions to tasks. People interpret these reactions as clues to whether or not they can or cannot perform a given action. Positive emotions/reactions can increase self-efficacy; negative emotions/reactions can decrease it.	Scholar notes how they feel or felt about research tasks or research situations.	Use this subcode when the Scholar relates their emotional response to their research on the part of their supervisor(s) or peers to their completion of their IRDL research or new research they have undertaken. The emotions could be positive or negative, leading to increased or decreased productivity.