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Translating Expertise The Librarian's Role in Translational Research

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NOTES

1. Dwyer-White M, Choate C, Markel DS. Increasing health research literacy through outreach and networking: Why translational research should matter to communities. *Health Educ J*. 2015;74(2):144–55.
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7

Developing an Educational Role in a Clinical and Translational Science Institute

Diana Nelson Louder

I like working with researchers. I like learning what they're working on, I like teaching them tricks that they can use in their daily work, and I like providing information that helps them do their job well. Developing an educational role as a translational research librarian working with my university's Institute of Translational Health Sciences (ITHS) has given me a forum to support individual researchers, as well as an opportunity to contribute to group efforts in support of the broader research community.

CLINICAL AND TRANSLATIONAL RESEARCH AT THE UNIVERSITY OF WASHINGTON

The University of Washington (UW) Health Sciences Library (HSL) strives to meet information needs in education, research, and patient care. We support students, faculty, and staff in UW's six health sciences schools, UW medicine, clinical sites in a multistate network, and ITHS. Although all of the HSL liaison librarians work with researchers, my position was created to focus on information needs of health sciences researchers—whether they are affiliated with ITHS, my other liaison groups (primarily scientific departments within the School of Medicine), or our broader health sciences community. As the biomedical and translational sciences librarian, I am responsible for creating programming and services for the University of Washington's "biomedical and translational research community"—a very large and nebulous group.

UW is home to a wide range of biomedical research—from regulatory DNA mapping to cardiac regeneration, HIV prevention, and patient-centered informatics tools. It has also been consistently one of the top recipients of funding from the National Institutes of Health (NIH), remaining among the top five public universities in terms of funding amount since fiscal year 1992.¹ In terms of total grant and contract awards received in fiscal year 2014, the six UW health sciences schools brought in \$893,944,500.²

The Institute of Translational Health Sciences exists to provide research support for an even larger audience. It has an academic home at the UW in Seattle, but it encompasses a broad network of universities, research institutes, hospitals, and primary-care clinics throughout Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI, pronounced “whannmy”). This is an area covering 27 percent of Idaho (WWAMI, pronounced “whannmy”). This is an area covering 27 percent of the land mass of the United States.³ The geographic reach of ITHS—which formed in 2007 as a result of a Clinical and Translational Science Award (CTSA)—matches that of the WWAMI regional medical education program of UW (figure 7.1). The WWAMI program relies upon collaboration among multiple institutions in multiple states to meet medical education and patient-care needs, whereas ITHS facilitates collaboration among many of the same institutions to meet biomedical research needs. In fact, ITHS has worked with investigators at nearly two hundred institutions in the WWAMI region.⁴ ITHS offers research support such as pilot funding, assistance in identifying research collaborators, clinical research coordinator services,

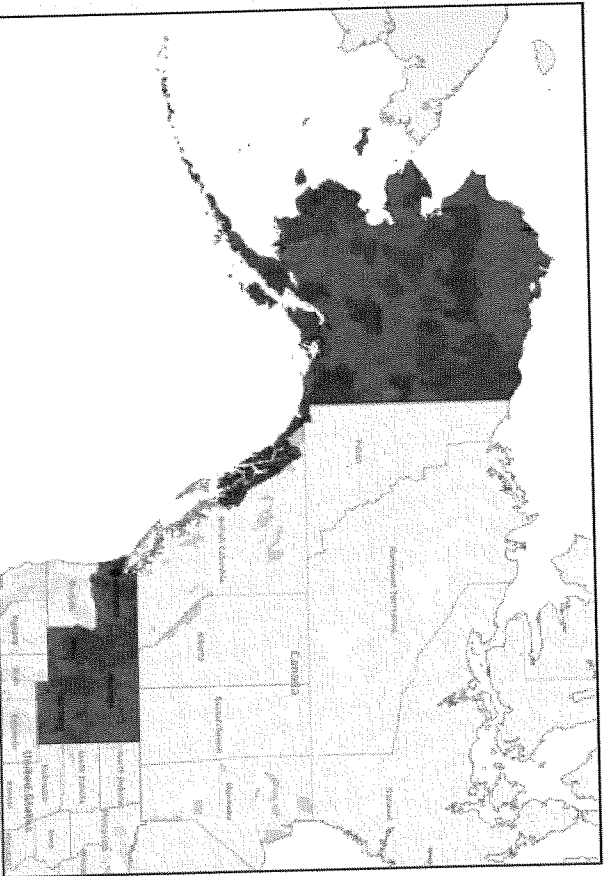


Figure 7.1. WWAMI region. The designated reach of ITHS encompasses the same five-state region as the UW medical school.

and access to laboratory facilities and research centers. Experts within ITHS also consult on topics such as biostatistics and preclinical development.

Although I’ve worked with ITHS faculty and staff in several parts of the organization, my primary contributions in the past two years have been within their educational programs. These opportunities have arisen due to my regular participation in meetings of the Education Program Team (ED Team). Thanks to this existing infrastructure and receptive ITHS faculty and staff, I’ve had several opportunities to present seminars as part of structured learning and continuing-education programs. My relationship with ITHS education leadership also enabled me to develop a pilot project working with early-career researchers who have received KL2 career-development awards. (See the textbox on p. 80.) This aligns with ITHS’s mission to provide the training and support needed by early-career researchers, as well as with HSL’s mission of providing information resources and services in support of biomedical researchers. By identifying the information needs of KL2 scholars and determining effective means of educating and assisting them, not only do I contribute to the training of this particular group of translational researchers but also I learn how to better serve the broader population of early-career researchers throughout the UW health sciences community.

STARTING A NEW JOB AS A TRANSLATIONAL RESEARCH LIBRARIAN

Starting a new job as a translational research librarian was daunting. My job description left both the discovery of a niche and the implementation of appropriate services up to me. I knew that librarians at other institutions had established roles for themselves within their clinical and translational science (CTS) institutes, but I had no road map. In October 2012, I was a midcareer librarian accustomed to working with researchers in the biotechnology industry. I was new to academia, new to the UW HSL, and new to working in a grant-funded environment. I was in a newly created position envisioned and funded by the UW HSL, and no role or responsibilities had been identified for me within ITHS. I had been charged with developing a program of services in support of translational researchers within one year. This work was to be accomplished in addition to my work as a liaison to several departments in the School of Medicine, providing information support to UW biomedical researchers, working on projects with my colleagues, and learning to be an academic librarian. I would need to conduct outreach, assess information needs, identify opportunities, and provide useful information services to ITHS faculty and staff and the researchers they support. I was eager to get started.

I met with key people in ITHS, and I read constantly: about the CTSA program, about ITHS, and about what other librarians had done with CTS institutes. Extrapolating from the biotechnology research environment to the academic research environment, I generated a two-page list of ways I could work with ITHS staff members and the researchers they assisted. My director and I presented the list to members of

the ITHS leadership in November 2012. The leadership was appreciative but did not seem immediately sure which of the suggested services could be useful to them or to ITHS-supported researchers. A small, but positive, outcome was that I was invited to attend a meeting of the ED Team in late January. And then I waited.

Having spent the first seventeen years of my career working as a biomedical and parent research librarian in a small pharmaceutical biotechnology company, I was accustomed to a fast-paced research environment, participating in ongoing projects, and nonstop research requests. By contrast, the next few months felt painfully slow. I met with a few more people. I was invited to a few meetings. I kept reading. My exact role was still unclear, both to the staff I met with and to me. A few people were under the impression that ITHS had funded my position. Others articulated needs of non-UW researchers and community groups that were outside my purview. I was anxious to *demonstrate* how I could contribute rather than *describe* how I could contribute.

Prior to attending my first ED Team meeting in January 2014, I learned more about the team and its role in ITHS. In 2012, ITHS consolidated their institutional structure into four major programs, one of which was education. This emphasis on education is in keeping with the goals of the CTSA program, which states that “a key component of the CTSA mission is the education and training of translational researchers.”²⁵ ITHS’s focus on education is also aligned with the recommendations of the Institute of Medicine’s (IOM) 2013 report evaluating the CTSA program. One of IOM’s seven recommendations was to “continue to emphasize innovative training, mentoring, and education to better prepare the next generation of researchers.”²⁶

The faculty and staff that are part of the ITHS ED Team offer both structured learning programs and continuing-education opportunities. Structured learning programs include a multiyear KL2 Mentored Clinical Research Scholar Program—a career-development award for postdoctoral scholars—and a TL1 Clinical Research Training Program for predoctoral trainees. Continuing-education programs include monthly seminars, grant-writing and REDCap workshops, a translational research “boot camp,” and an online Self-Directed Learning Center.

At my first ED Team meeting, the group’s faculty chair gave me a gift. She said I was welcome to attend meetings regularly without obligations so I could watch for opportunities to get involved. I was a sponge—learning about the grant-funded world, starting to understand the ITHS audience, and soaking up details about the educational programming the group offered. Within a month, the faculty member in charge of the ITHS career-development seminar series invited me to give a seminar on advanced PubMed searching for researchers. After a successful seminar in April, I started to feel that I was contributing to, as well as learning from, the ED Team.

DEVELOPING A PILOT PROJECT

While participating in ED Team meetings felt like a foot in the door, I was looking to make a more substantive contribution. In order to fulfill my goal of developing

and implementing services in support of translational researchers, my supervisor encouraged me to develop a pilot project. Designing that project would let me define a discrete audience within my vast potential audience and tailor my services to suit that audience. A pilot project would also give me the opportunity to test ideas and assess their effectiveness. Another important benefit of developing a pilot project was that it allowed me, the librarian, to demonstrate how I could be useful rather than waiting for an invitation.

I also wanted to play to my strengths to increase my chances of making a valuable contribution to ITHS. I brought a scientific background, expertise as a biomedical and parent searcher, a genuine interest in the details and decision points of research projects, and many years of working directly with individual researchers and multidisciplinary project teams to ensure they had the information and skills they needed to conduct their research. With all of these things in mind, I took my supervisor’s suggestion and tried to identify a group for a pilot project.

Based on my readings and research, I now understood that “translational research” was broadly viewed as research that incorporated knowledge from multiple realms in order to increase the speed at which research can improve health outcomes for patients and communities. With such a broad view of translational research and such a wide geographic region to cover, I realized how diverse and expansive the ITHS audience was. This confirmed my initial inclination: I didn’t want my pilot project to be too far removed from individual researchers. It also posed a challenge: How could I decide what services to propose if I didn’t know my chosen audience or their needs?

Although numerous assessment methods exist, the one I was most familiar with was an ethnographic approach: studying researchers by observing and talking with them in their natural environment. I identified three discrete groups of translational researchers supported by ITHS as possible target audiences, and I distilled my two-page list of ideas into a pilot-project proposal to be a dedicated librarian working with one or more of these groups. In the meantime, I kept attending monthly ED Team meetings and reaching out to the ITHS faculty and staff. At the April 2013 ED Team meeting—six months after I started at UW—I found my opportunity. The codirector of the KL2 Scholars program was sharing results from a survey of the scholars. When asked what they wanted to learn, the scholars had requested “advanced library training.” He leaned over to look at me. I had received a second gift: the number one group on my pilot project list wanted a library seminar.

Over the summer I turned a seminar invitation into a plan for a nine-month pilot project. The KL2 program offered an existing infrastructure and a discrete group of self-identified clinical and translational researchers. The pilot project would give me the opportunity to ascertain the researchers’ information needs, provide individualized training and research support, and solicit feedback on effectiveness. In addition to helping individual scholars, I also hoped to translate what I learned in order to more effectively support the broader translational research community.

THE KL2 MENTORED CLINICAL RESEARCH SCHOLARS PROGRAM

The KL2 Mentored Clinical Research Scholars Program is funded through the NIH's National Center for Advancing Translational Sciences (NCATS) as part of the CTSA initiative. Although implementations of KL2 programs vary from institution to institution, each CTSA institute uses these awards to help individuals with doctoral degrees develop their research careers. The goal of the program is to provide mentoring, training, time, and funding to new researchers so they can become successful, independent investigators in clinical and translational research.

The ITHS KL2 scholars program offers multiyear awards to early-career investigators who are senior fellows or in their first faculty appointments (textbox 7.1). They seek applicants from a broad range of disciplines, including dentistry, medicine, naturopathy, nursing, pharmacy, public health, and social work. Three to five scholars join the program each year and remain in the program for up to five years; many also earn a concurrent master's degree in public health, biostatistics, epidemiology, or bioethics. The objective of the program is to provide enough mentoring and support that—by the end of the program—each scholar will be in a position to obtain at least one hundred thousand dollars in independent research funding as a principal investigator.

TEXTBOX 7.1

Who Are the Current ITHS KL2 Scholars?

- Recipients of NIH Mentored Clinical Research Scholar Awards funded through NCATS as part of the CTSA program
- Diverse group with a wide range of health sciences training, including orthodontics, psychiatry, emergency medicine, epidemiology, surgery, cardiology, social work, oncology, pharmacy, pediatrics, and global health
- Appointments at University of Washington, Seattle Children's Hospital, and Fred Hutchinson Cancer Research Center
- Four cohorts of three to five researchers per year
- Seventeen postdoctoral scholars as of June 2015

This multidisciplinary group participates in a structured educational program, including weekly seminars, throughout the academic year. Their interdisciplinary focus is strengthened through weekly “work-in-progress” sessions where scholars report on their research and solicit input from their peers. Learning from their peers and guest speakers, each scholar gains an appreciation for the goal of translational research: to promote the movement of knowledge throughout the phases of discovery, development, delivery, and outcomes research in order to accelerate improvements in population health. The scholars also develop the translational research mindset of in-

cluding multiple parties in research assessment and priority setting. The translational research mindset is described in this way by ITHS authors Kelley and colleagues:

Assessment and priority setting activities serve as a bridge, connecting stakeholders within and across the stages of translational research to ensure efficient handoffs and facilitate the larger goal of delivering on the promise of scientific discovery. With common understanding of the problem and goals, interdisciplinary teams can be more effective in making successful handoffs to assure discoveries reach development, delivery, and outcomes.⁷

The KL2 award is just one of the K awards (career-development awards) granted by the NIH, and the University of Washington is home to many recipients of NIH K awards. In an analysis of the number of new K awards per CTSA institution during the period of 2006–2013, the University of Washington CTSA was deemed one of the “top 10 performing” CTSA institutions.⁸ As noted by Guerrero and colleagues, although other K awards are not tied to CTSA funding, the K08 (clinical investigator awards) and K23 (mentored, patient-oriented research, career-development awards) funding mechanisms are also “geared towards supporting the clinical and translational researchers.” Even though recipients of these other K awards are not part of the ITHS structured educational program, they are still considered an important audience for ITHS resources and programming. They would be considered an important audience for library resources and research support services as well.

THE FIRST ACADEMIC YEAR: A NINE-MONTH PILOT PROJECT

As part of their program, the KL2 scholars participate in weekly seminars throughout the academic year. The program directors invited me to give two of those seminars during the 2013–2014 academic year—one in the fall and one in the spring—and they left the content of the seminars up to me. Not knowing what kind of “advanced library training” the scholars would find most useful, I asked the directors if I could survey the cohort. I used the survey to introduce myself as their librarian, ask how they identified and managed the information they needed, gauge their familiarity with and interest in various research tools, and solicit their feedback on what they wanted to learn.

I received responses from all seventeen scholars and used their input to inform the development of educational content and research support. Knowing their commonly used resources and top interests helped me determine what content to focus on and how to deliver it. Here are some examples:

- The scholars were most interested in learning about current awareness alerts and advanced PubMed searching.

- Grant-writing resources were the second-most popular topic, so I added grant-writing content to an existing web-based Biomedical Sciences Toolkit and publicized it.
- Nearly all of the scholars used a citation manager—EndNote being the most popular—so during the year I sent an e-mail to the group with tips on maintaining a single EndNote library by syncing desktop and web-based libraries.
- Few scholars were interested in medical genetics databases, so I discussed this one-on-one with interested individuals rather than introducing this topic in a seminar.

Not only were the faculty directors receptive to my involvement in the KL2 scholars program, but also the scholars were very engaged. The day of my first seminar, three individuals asked to meet with me. Throughout the year my outreach efforts continued to be well received. Each time I made a presentation or sent out an e-mail, I'd receive at least one response from someone who wanted to follow up with me.

For my second seminar presentation, I focused on relatively new tools for publishing and grant-related activities. I talked with the scholars about ORCID, SciENcy, complying with the NIH public access policy, searching databases for funding opportunities, and using the research networking tools SciVal Experts and DIRECT-2Experts. Guidance on complying with the NIH public access policy was especially well received. This was due, in part, to a collaboration with the ITHS education program specialist who had talked with me in advance about the scholars' experience with NIH public access policy compliance. Together, we decided to focus on advice for building compliance into the scholars' publishing workflow. I added instructions and background information to the KL2 library guide, and the program specialist embedded the guide into the course-management website.

I relied on the assistance of many people that first year, including my library colleagues and librarians from other institutions. The HSL liaison librarians helped me understand the various work environments within the UW health sciences, topics that would be of interest to researchers across the disciplines, and information resources used by researchers outside my liaison areas, such as orthodontics and social work. During that time a particularly helpful article by Holmes and colleagues was published that included a list of library support activities that would suit the education and career development functions of CTS institutes.⁹

Once I began the pilot project, conversations with individual scholars were particularly enlightening. The program specialist had provided me with background information on each of the scholars, but each time I met with someone I gained a better understanding of their individual interests and challenges. After having spent many years working with people whose full-time job was research, I was amazed at all of the nonresearch duties the scholars were juggling. Scholars retain their clinical,

teaching, or mentoring responsibilities: those who are junior faculty may be teaching classes for the first time or mentoring graduate students; those who are clinicians spend a lot of time involved in patient care. Those who are earning concurrent degrees in public health are also consumed by learning biostatistics and conducting research for their theses in addition to their KL2-funded research.

Given the many professional demands on the scholars' time, I focused on practical information—tailored to their situation—that could be readily incorporated into their research practices. I made the best use of meeting time by preparing extensively before individual meetings and following up with additional assistance afterward. No matter what they asked for help with, I attempted to help. They were quick to fill me in on their challenges and to explain the value of the assistance I provided.

These seminars and consultations provided the context I needed to think about what might be most useful for both individuals and the group. In addition to thinking about what sorts of information-seeking and information-management skills the scholars would want to develop, I started to emphasize ways I could help them be more efficient. Through a combination of individual research support, instructional seminars, occasional e-mail messages, and web content, I solidified a place for myself within the KL2 program that matched my strengths to their information needs.

ASSESSMENT OF THE PILOT PROJECT

At the end of the nine-month pilot project, I again surveyed the seventeen scholars. This time I enlisted the help of a librarian colleague with assessment expertise to examine the goals of my survey and craft questions accordingly. I was most interested in the utility of the content I had provided, the effectiveness of my information delivery methods, and the value of one-on-one consultations. I was also curious to know whether the scholars had incorporated new research practices in their daily work and which library services were worth continuing. Finally, I wanted to present a list of fifteen possible topics and solicit input on what they'd like to learn about in the following year. Textbox 7.2 shows highlights of the post-pilot project survey responses.

These formal assessment results, as well as individual feedback from scholars and program directors, confirmed that the services provided as the KL2 scholars' librarian had been worthwhile. Specific feedback helped me know what content to focus on in the second year and where to invest my energy. I found the pilot project extremely rewarding and was eager to continue working within the KL2 scholar program. I shared these positive responses with the directors of the KL2 program and headed into year two.

TEXTBOX 7.2 Highlights of Post-Pilot Project Survey Responses

Incorporation of content into research practices:

- Two-thirds of respondents (6/9) reported that during 2013–2014 they learned effective search strategies for PubMed and other databases, created/modified a current awareness alert, and registered for an ORCID ID.
- Five respondents had made more effective use of a citation manager, and four respondents had set up a SciENcv profile.

Utility of content provided by librarian: The most helpful topic covered by the librarian in her 2013–2014 seminars and e-mail updates was “current awareness alerts.” This was followed closely by SciENcv and PubMed searching.

Effectiveness of librarian’s information delivery methods:

- Respondents indicated that the most effective means for the librarian to deliver information was via presentations in the KL2 seminar course.
- All respondents who had had one-on-one consultations with the librarian (5/9) rated the effectiveness of this means of delivering information “very valuable.”

Feedback on future librarian services:

- 89 percent of respondents rated librarian availability for consultations as the most valuable service KL2 scholars should be offered, followed by 78 percent who rated the delivery of an annual presentation as part of the seminar course as the most valuable service.
- Based on the librarian support they received in the KL2 program, eight of nine respondents are likely to seek out librarian assistance, or to refer a colleague to a librarian, for research assistance in the future.

THE SECOND ACADEMIC YEAR

The major challenge of the second academic year was the nature of working with a multiyear program. Each scholar’s KL2 award lasted four to five years, so at the start of my second academic year, there were a number of transitions: five researchers had completed the KL2 program, twelve scholars remained in the program, and five new scholars joined the program. My audience the second year, then, fell into two groups: continuing scholars and new scholars. Most of the continuing scholars had attended my two presentations in the first academic year and would be in the audience again for my seminar presentation in the second academic year. What content could I present that would be useful but wouldn’t duplicate material I’d already presented? In terms of the new scholars, how could I ensure that they had opportunities to learn

material I’d presented the previous year, as well as provide input about content that would be most useful for them?

Since the new scholars hadn’t been part of the post-pilot project survey in June 2014, the UW assessment librarian helped me develop a survey of interests and research habits of the five new researchers. With the opportunity to work with a small cohort of researchers from the beginning to the end of their multiyear KL2 award, I wanted baseline information so I could track what tools and strategies they incorporated into their workflows and research practices over the four- to five-year period. To that end, I asked about their use of current awareness alerts, citation managers, advanced PubMed search features, and approaches to literature reviews; about whether they’d written a data-management plan for a grant application; and about their understanding of NIH public access policy compliance. I also solicited the new scholars’ input on what librarian services would be most valuable to them and what topics they were interested in learning about. I used the same list of fifteen suggested topics that I had offered in the June 2014 survey of the first group of scholars.

Five scholars granted permission for me to use their anonymous answers within the UW community; four of the five new scholars granted permission to use their anonymous data in professional publications. Highlights of the September 2014 survey results from those four individuals are listed in figure 7.2. Although training interests were fairly similar between the continuing scholars and the new scholars, there were a few interesting differences. The most obvious differences between the two groups’ interests were in current awareness alerts and research impact. All of the new scholars (4/4) wanted to learn about current awareness alerts, whereas only 11 percent (1/9) of the older cohorts of scholars wanted the librarian to cover this

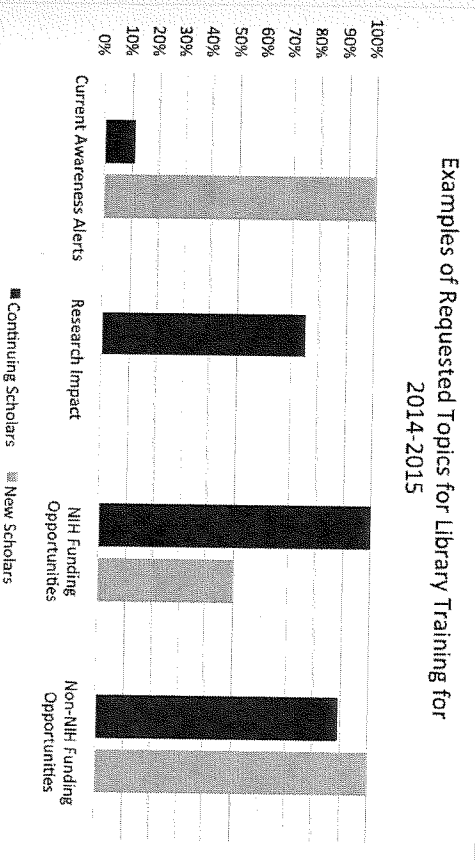


Figure 7.2. Noteworthy differences in selected training interests between continuing scholars and new scholars, 2014. (Responses represent nine continuing scholars and four new scholars.)

topic during the 2014–2015 academic year. Post-pilot project survey results had shown that current awareness alerts were the most popular topic covered during the 2013–2014 academic year, but clearly the continuing scholars wanted to move onto another topic. This was an essential tool that I'd need to address either individually or in a small group of new scholars.

Two-thirds of the continuing scholars were interested in "tools for describing research impact," whereas none of the new cohort was interested in this topic. A possible explanation for this difference is that members of the new cohort were initiating research projects and had not yet been faced with the task of describing the value of their research findings. Many of the continuing scholars, on the other hand, were applying for grants and needed to display their expertise and the worth of their past and proposed work. From a teacher's point of view, introducing the topic of research impact early in the researchers' careers seemed timely and important, so I made plans to address this topic in my seminar despite the survey results from the new cohort.

A third noteworthy difference between the two groups related to their interest in funding opportunities. While all of the continuing scholars (9/9) wanted to learn about finding NIH funding opportunities, only 50 percent (2/4) of the new scholars were interested in this topic. On the other hand, all of the new scholars (4/4) wanted to learn about finding non-NIH funding opportunities. The KL2 program director confirmed this trend by letting me know that several of the new scholars would be applying for non-NIH funds to continue their research. Although all of the scholars were supported by NIH funds through their KL2 award, I didn't want to focus exclusively on research tools for the NIH-funded environment.

With these survey results to guide me, I decided to present all new content for the second-year seminar. To address data-management needs, I invited the UW data services curriculum and communications librarian to present with me. She gave the scholars practical information on research data management, NIH data-management plans, and data sharing; I followed with tools for increasing and documenting research impact. I incorporated information about open-access publishing, citation analysis, networking, and altmetrics that would be applicable in many situations. I also introduced the Becker Medical Library Model for Assessment of Research Impact¹⁰ and encouraged the scholars to track various manifestations of their research impact on an ongoing basis.

To give the new KL2 scholars a foundation similar to what I'd provided the scholars in the pilot year, I held a separate informal seminar with the five new scholars and also offered to meet with them individually. In the informal seminar, we talked about strategies for staying current with the literature, as well as NIH-related topics such as NIH public access policy compliance, My Bibliography, and SciENcv. The informal session was very successful in part because the researchers freely discussed their experiences, frustrations, and tips with their peers and me; it was an opportunity for everyone to contribute, ask questions, and learn from each other. I also had the benefit of a year's experience and could provide concrete examples of what the previous year's group of KL2 scholars had found useful. Due

to the success of this approach, I decided to hold informal seminars and individual meetings with each new cohort of scholars.

SIGNIFICANT CHALLENGES OF DEVELOPING A ROLE AS A TRANSLATIONAL RESEARCH LIBRARIAN

My most significant challenge during the first year as a new translational research librarian was the ambiguity I had been warned about in the job posting. Not only was it unclear what my role and responsibilities should be, but also it was unclear who would decide what my role would be. At the same time, neither the ITHS nor the HSL environment remained static. I encountered staff turnover, changing directions, competing demands, problems, and opportunities. If clarity wasn't possible, at the very least I wanted to be able to discuss these challenges. Fortunately, my supervisor listened to me, helped clear up misunderstandings, advocated for me, served as a sounding board, and helped me navigate through unfamiliar environments. She helped me find ways to support the goals of ITHS, the goals of HSL, and my own career-development goals.

Although my role on the ITHS ED Team wasn't immediately clear, the faculty was familiar with the educational role of librarians and seemed comfortable with the ambiguity of my position. They approached me with teaching opportunities and asked me about information resources and assessment tools. Once my pilot project began, this gave me a substantive role, and the ED Team involvement gave my work a focus. From that position, it was easier to branch out to other parts of ITHS to offer assistance. Demonstrating ways I could be helpful was important to gaining acceptance. Within the KL2 program itself, the primary challenges have related to the fact that the KL2 scholars are a multidisciplinary, heterogeneous group who are in different stages of their research careers and who may view themselves as primarily a clinician or instructor. As the scholars are learning from their peers, I'm using a combination of surveys, consultations, and classroom discussions to try to find areas of common interest across these varied disciplines. I'm not always successful. Because I work with a small group where I know each person by name, I'd prefer to be useful to each one. Still, I'm careful not to be too pushy. These are successful, busy people, and not all of them may see a need for what I'm offering. I keep the needs of the group in mind by presenting on topics of interest to a broad range of researchers. On the individual level, I focus my efforts on those people who seek me out.

The final significant challenge is dealing with the changing nature of the program itself. The challenges of supporting individuals in different phases of a multiyear program were described above. Leaders of the ITHS KL2 program also make changes in the weekly seminars based on feedback from scholars. Recently, there has been greater interest in peer-to-peer presentations than in outside speakers. The NCATS vision for the KL2 program is also changing. Funding for KL2 awards is shrinking, and KL2 programs will no longer necessarily be a part of all CTSA's. Starting with

the current Funding Opportunity Announcement for Clinical and Translational Science Awards (PAR-15-304), NCATS may choose to fund a UL1 for a translational science institute without also funding a linked KL2 award.¹¹ Because of this shrinking funding, no new full-term KL2 awards will be made by ITHS in 2015. The KL2 program is continuing for the foreseeable future, however, and ITHS remains committed to training and mentoring investigators pursuing translational research. No matter how career-development awards change, it's likely that there will be some mechanism for me to provide librarian support to early-career investigators.

PROJECT OUTCOMES

The benefits of serving as the librarian for the KL2 scholars have been determined through multiple methods of assessment: formal and informal and documented and anecdotal. Because the pilot project was both rewarding to me and effective for the scholars, I plan to continue working within the KL2 program for the foreseeable future. As a librarian, I've benefited from working with the KL2 scholars in the following ways:

- Repeated interactions with a small group of people allow me to get to know individuals, see how they use information resources and tools as part of their work, and learn what they find both useful and challenging.
- What I'm learning and teaching as part of my work with the scholars can be repurposed for supporting other UW researchers.
- Establishing this role has led to other opportunities within the education team.

Based on the post-pilot project survey results, as described above, the KL2 scholars have also benefited. For example, most KL2 scholars had incorporated several things I had taught into their research practices, including current awareness alerts, new PubMed search techniques, and the NIH biosketch tool, SciENcv. In addition, all respondents who remembered and rated the usefulness of the 2013–2014 presentation and e-mail topics indicated that each topic was either “very helpful” or “somewhat helpful” (figure 7.3). They also gave valuable feedback on what support they wanted in the coming year. They requested additional library seminars and selected an average of eight topics (out of fifteen suggested topics) they wanted to learn about. Finally, they said that simply being available for individual assistance and consultations was the most valuable library service I could offer them.

In addition to conducting periodic surveys, I took notes on all individual consultations with KL2 scholars. For the period of October 2013–December 2014, eight of the original seventeen scholars and two of the five-person 2014 cohort have consulted with me individually, some multiple times. Although “occasional e-mail messages” was not a highly rated method of communicating according to the June 2014 survey, each time I sent an e-mail to the group, at least one person

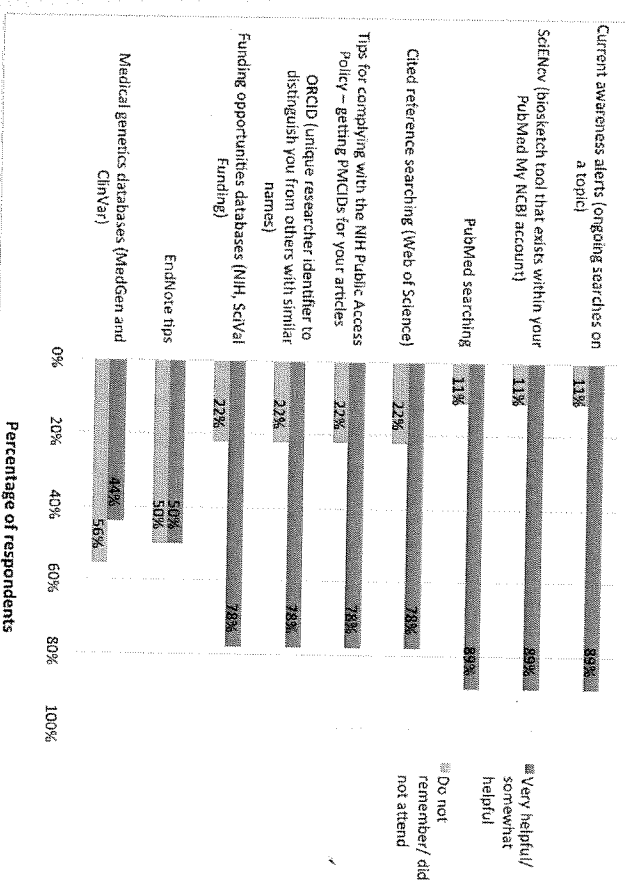


Figure 7.3. Survey responses in answer to the question “Which of the following topics covered in the librarian’s seminars and e-mail updates were most helpful to you?” (Data based on nine respondents’ answers at the end of the nine-month pilot project, June 2014.)

responded with questions and requests for assistance. Through individual consultations, I learned about their research projects, their phase in their research career, their work outside research, and how they used information and information-management tools. I’ve had opportunities to develop search strategies for systematic reviews, demonstrate the use of medical genetics databases to a clinician, brainstorm ideas for a research project for a master’s thesis, provide tips on locating non-NIH funding opportunities, conduct searches on topics ranging from medical device information to survey instruments, and help several people make effective use of EndNote and current awareness alerts.

Although I’ve mentioned my focus on EndNote and current awareness alerts several times, it’s worth emphasizing because effective use of these tools changes people’s daily conduct of research, grant writing, and publishing. As one person told me, “You just saved me probably two hundred hours. Nobody shows you the basics; you just do what you need to get by.” Gratitude for the basics was also echoed by another scholar who told me, “You’ve been more helpful than it probably feels like on your end—just to talk this through.” Because of comments such as these, I was gratified but not surprised to learn that—based on the librarian support they received in the KL2 program—eight out of nine respondents were likely to seek out librarian assistance, or to refer a colleague to a librarian, for research assistance in the future. The

scholars had been shown examples of how a librarian could assist them with their research activities, and when help was offered, they accepted. There were also several unanticipated benefits of serving as the KL2 scholars' librarian:

- Following my first survey of and presentation to the KL2 scholars, the directors of the yearlong TL1 training program for predoctoral students asked me to survey and present to their students. Now I'm involved in both structured learning programs offered by ITHS.
- Offering support to the KL2 scholars is an opportunity to also support the graduate students and postdoctoral fellows collaborating with the scholars. Although the scholars were being mentored by more senior researchers, they were also serving as mentors themselves; as a result, I was asked to teach literature-searching strategies to a graduate student and to help a postdoc with systematic review search strategies.
- The faculty directors of the KL2 program have given me autonomy, frequent encouragement, and timely feedback. They commented when they learned new things as part of my seminars and came to me with questions if they thought I could help. Most recently, one of the directors enlisted my assistance in assessing the effectiveness of our translational research training program.
- Finally, my work with the faculty and staff in the education team has made it easier to get involved in other aspects of ITHS's work. I've had opportunities to participate in projects and meetings, develop content for the ITHS website, and provide literature search support to ITHS faculty and staff embarking on projects or writing articles.

Becoming accepted as "the ITHS librarian" in this collegial network has provided me with opportunities to make meaningful contributions to the missions of ITHS and HSL.

LOOKING FORWARD

The ITHS KL2 scholars program continues to evolve. No full-term scholars joined the ITHS program in 2015 due to reduced funding for the KL2 program nationally. Also, according to recent feedback on the weekly KL2 seminars, the scholars have asked for more time devoted to discussions with their peers and fewer guest speakers. As a result, my role in the coming year may lean toward providing more individual support and web-based content.

While the KL2 program is contracting, ITHS has developed a separate faculty career-development program called Rising Stars. Beginning in 2015, this program will make two-year awards to promising early-stage investigators throughout the WVAMI region, thus extending the reach of ITHS's career-development offerings. Faculty members in the Rising Stars program will receive research funding,

mentoring, peer-to-peer networking, and other services. Similar to the KL2 scholars program, the Rising Stars program aims to increase the number of early-stage investigators in the region who successfully obtain K- or R-series funding from the NIH for translational research. The Rising Stars program will provide another distinct group of researchers whom I can offer to support with individual research assistance, presentations, and web-based content.

Everything I learn while working with the KL2 scholars helps me provide more effective support to other biomedical researchers at UW. I learned from a clinician how he worked with genetics data. I learned from social work and public health researchers some of the challenges of interdisciplinary research. Information I learned about SCIENCE, ORCID, and the NIH public access policy is now part of library guides available to the rest of the UW community. When I hear a scholar's honest recounting of the challenges of the new NIH biosketch requirements, I have insights that help me be more effective when I get biosketch questions from faculty in my other liaison groups. Even if the KL2 scholars program ended altogether, this small interdisciplinary group will have helped me in my efforts to provide useful support to the UW biomedical research community.

I'd also like to extend my support by adding content to the ITHS website to address typical information needs of researchers in the WVAMI region. The scholars have helped me understand I should focus on providing practical, time-saving, intelligence-increasing information. Now that I have a better understanding of the movement of knowledge through the various phases of translational research—from scientific discovery to outcomes research—I also want to provide information resources and guidance pertaining to each phase in order to help researchers who are accustomed to working within only one phase. For me, the KL2 scholars have been a microcosm for learning about the information needs of the translational research community.

RECOMMENDATIONS

As I began my new job, I faced the challenge of finding effective ways to provide library support to a vast community of clinical and translational researchers. Designing a pilot project gave me structure and focus, as well as an opportunity to explore what would be useful to a cross section of ITHS-supported researchers. I attribute the success of the pilot project to many factors, especially the receptiveness and interest of the individual people I worked with in the KL2 scholars program. For someone considering a similar project, I recommend: (1) utilizing existing infrastructure; (2) aligning the pilot project with the goals and strengths of the library, the CTS institute, and the librarian; (3) using what is learned in one setting to help researchers in other settings; and (4) incorporating assessment activities throughout the project to shape the content of instruction and services and to evaluate the usefulness of the project.

Consider Contributing to Existing Programs or Projects

When I was unsure how to get involved with my CTS institute, the existing infrastructure of the KL2 scholars program offered an opportunity to contribute to a high-priority program. I didn't need to seek out a suitable group of translational researchers because there was an existing group to work with. Weekly seminars offered a relatively easy way to engage with the scholars, and the small size of the group allowed me to be generous with my time and energy. I could offer both individual and group support and provide in-depth assistance on a wide range of projects without fear of overcommitting. I could also experiment with multiple methods of providing information before deciding which methods were most effective. The faculty directors supported my interest in assessment and facilitated my information gathering while helping me avoid contributing to the scholars' "survey fatigue." They also gave me autonomy to map out a useful role for myself within their successful multiyear program.

Align Your Services with Institutional and Professional Goals and Strengths

A new partnership between a library and a CTS institute (especially one where the librarian's position is not funded through the CTS award) should be aligned with the goals of both partners and should be consistent with the library's vision of service. In addition, although there are a multitude of ways librarians could work with a CTS institute, it's easier to demonstrate our value if we choose a project or service model that matches our individual strengths. Heading into an unfamiliar environment, I had a list of potential services so I would be ready to articulate how the library and I could help. With these possibilities in mind, I learned about ITHS's goals and core programs, and I watched for areas where I felt I could make a strong contribution. Rather than taking on the first project that was offered to me (managing NIH public access policy compliance), I instead created my own pilot project that built on the expertise and insights I had gained from working with biotechnology industry researchers. When I identified information needs outside my expertise (e.g., assisting KL2 scholars with data-management plans), I consulted with my colleagues and connected ITHS faculty and staff with other UW librarians.

Apply What You Learn from One Group to Assist Others

Our environments are always changing: people come and go, projects begin and end, and new opportunities emerge. As I worked with a small group of early-career researchers, I learned from our interactions and paid attention to what they found useful. I used this information to help the KL2 scholars, but I also got ideas for outreach, resources, and services for the rest of my liaison areas. For example, by monitoring changes in the NIH biosketch requirements and talking with a handful of KL2 scholars about SciENcv and biosketch writing, I could write a SciENcv LibGuide that was succinct and practical. The content was originally developed for the KL2 scholars but has since been publicized widely, resulting in workshop requests,

troubleshooting questions, and lots of web-page hits from the UW community. Interacting with these seventeen individuals from multiple disciplines has helped me develop resources and services that are sensitive to the demands upon and interests of clinical and translational researchers generally. No matter how the CTS award system and KL2 program evolve, I'll be able to use what I've learned to assist other researchers—whether they are the ITHS-funded Rising Stars, recipients of other NIH career-development awards, or junior faculty in my liaison departments.

Make Judicious Use of Assessment

A pilot project lends itself to formal assessment activities. Knowing that I would want to evaluate the effectiveness of my instruction and research support at the end of the pilot project, I designed a survey to determine the scholars' initial familiarity with and use of tools such as ORCID, MeSH (medical subject headings), current awareness alerts, and citation managers. I also used the initial survey to elicit what the scholars meant when they said they were interested in "advanced library training." The initial survey supported my work in two ways: it gave me a baseline with which to compare future survey results, and it informed the content I delivered. I was able to deliver useful information the first time I met them because the scholars had already told me what they wanted to learn.

Throughout the nine-month pilot project I relied on informal assessment methods—from observing body language to documenting quotations from individual consultations. I was collecting information that would help me evaluate the effectiveness of the pilot project as a whole, but I was also learning from every e-mail and conversation. For example, when I saw that some researchers' projects bridged the health sciences and social sciences, I made a point to talk more about the value of databases such as Scopus rather than relying too heavily on PubMed. Informal assessment let me fine-tune the content I delivered and respond better to individual preferences and information needs.

For the formal assessment at the end of the pilot project in June 2014 (as described above), the assessment librarian and I wrote survey questions to determine whether my instruction and research support had been useful and what types of support the scholars found most effective. Since I wanted to continue working with the KL2 scholars beyond the end of the pilot project, I also asked what information content and types of librarian support would be most useful to them in the following academic year. In September 2014, I asked the same forward-looking questions of the new cohort of scholars joining the program. By considering the feedback from the first cohort of scholars along with the interests of the new cohort of scholars, I was able to decide what content to cover in my annual seminar (new content that matched the interests of most scholars) and what content to cover in a separate session of just the new scholars. It was also extremely useful to ask the scholars which of eight potential services I should offer in the coming year. Survey responses indicated that they were most interested in annual seminars and having a librarian available for individual

consultations. Seeing these clear preferences helped me focus my efforts primarily on these two mechanisms of support and not venture into less popular services such as developing web-based content.

With formal surveys bookending the project and informal assessment activities throughout the nine months, I was able to use assessment to shape the content of my instruction, evaluate the effectiveness of the services I offered, and tailor future methods of support to meet the needs and interests of the scholars.

CONCLUSION

Participating in the work of the ITHS ED Team has led to productive, rewarding work providing instruction and research support to multidisciplinary audiences. I've had the opportunity to learn firsthand about the ways ITHS develops and maintains support for researchers at all stages in their careers throughout the five-state W/WAMI region. In my work with the KL2 scholars, I've also combined my favorite thing—working with individual researchers and helping them be more efficient and effective—with a project that has proved to be a great education in the challenges and successes of early-career investigators across the six UW health sciences schools.

At the time I planned my pilot project, all CTS institutes offered a KL2 program. Now NCATS has announced that they will not necessarily fund KL2 programs for each funded CTS institute. Still, as long as any of these CTS-sponsored predoctoral or postdoctoral structured career-development programs exist, they offer valuable opportunities for librarians' involvement with researchers, just as academic curricula offer opportunities for librarians' involvement with teaching faculty and students. Working with these talented early-career investigators puts librarians in the midst of fascinating research and intensive multidisciplinary training. While contributing to the success of CTS-supported researchers, librarians can also use these training programs as testing grounds for finding effective ways of contributing to the education and work of all of the researchers we support, wherever they are.

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