

Research Support Services: Agriculture

Hale Library
Kansas State University

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Introduction

Hale Library at Kansas State University responded to the call for participants in the Agriculture Research Support Services Prospectus issued by Ithaka S+R and became one of nineteen participating institutions in this study. Per the Prospectus, Hale Library identified, Livia Olsen, academic services librarian, and Diana Farmer, content development librarian for the sciences, to be the local researchers and the primary authors of an institutional report.

Both local researchers participated in a webinar for participants from all nineteen institutions in March 2016. The webinar reiterated/reinforced the definition of the field of agriculture that was stated in the Prospectus.

“The field of Agriculture encompasses research into the science and practice of farming, both crops and animals, to provide food and for other purposes. Scholars who study agriculture fall on a disciplinary spectrum that encompasses the sciences, social sciences, economics and business.”

Limitations were placed on this definition.

“... Agriculture has important connections with veterinary medicine, forest management, natural resources management, and other adjacent fields. For the purposes of this project, scholars more strongly aligned with these fields, and less focused on the science and practice of farming, will be held out of scope.”

The webinar also provided an overview of the project, further refinement of who are to be considered agriculture researchers for this study, and the timelines for the study.

Approval by the University’s Research Compliance Office for Research Involving Human Subjects was obtained for this study’s protocol.

In April 2016, the researchers attended a two-day workshop in Gainesville, Florida sponsored by Ithaka S+R for training in ethnographic research methods.

Ithaka S+R has led similar studies regarding Art History and Religion in U.S. academic settings.

Overview of Methodology used in this Study

The methodology and specific interview questions used in the following study were developed by Ithaka S+R. As described in its contract, the Agriculture Research Support Services Project was “to examine the research practices and research support needs of scholars in Agriculture.” According to the Prospectus, the final report to be issued by Ithaka S+R “will contain recommendations for the development of services based on the combined findings from all participants.” Hale Library’s local researchers

conducted semi-structured interviews with members of K-State's own local faculty. The following report is based on an analysis of these responses. All interviews and analyses were completed by the authors of this report.

Using the definition of agriculture above, we identified eleven faculty members at Kansas State University's College of Agriculture to interview. As a land-grant institution one of the major components of the university is outreach to the populace of the State. This resulted in several of the selected faculty having not only teaching and research tenths but also extension tenths through their appointment to K-State Research and Extension.

An initial list of thirty-two potential interviewees was compiled. Faculty in various stages of their careers (early, mid, late) as well as being pre-tenured and tenured were included. We chose to focus on departments with an emphasis on the production side of agriculture so we did not contact any faculty in our Agricultural Economics or Communication and Agricultural Education Departments. In retrospect, this was a mistake. More than one researcher we interviewed noted that they worked on interdisciplinary teams where an agricultural economist, in particular, was a team member or noted the importance of economics in the distribution of the global food supply. Interviewing faculty members in Agricultural Economics would have added an important perspective to this study. The project was to include no fewer than five and no more than fifteen interviews, so sixteen individuals were selected (eight for each researcher) for contact.

Each of the selected faculty was sent a personal email invitation to participate in the study. The text of the email informed the faculty member that their participation would not be compensated, that their responses would be anonymized and that the interview was expected to be no more than an hour. The emails were sent the first week of May. A second email was sent a week or more later to those who had not responded. Those who responded were asked to select a date, time and location for the interview between May and July 8. All respondents indicated that they would prefer the interview take place in their office. The highest response rate was from mid and late career faculty. Very few junior faculty responded positively to the call for participation in this study. As a result, this report mostly reflects the concerns and processes for faculty further along their respective career paths.

Why there was not a better junior faculty response is unknown. Do they not think of themselves as library users? Is the library not important to them? Do they feel that libraries are no longer relevant? Given the rapidly changing technological environment these are questions that need to be addressed. Perhaps, with the pressures of tenure and teaching load, they were just too busy to respond or the timing of the study was prohibitive. As senior faculty retire, understanding the research process and literature seeking habits of junior faculty becomes increasingly important if K-State Libraries expects to appropriately fill the information needs of faculty.

The timing of the interviews definitely created problems obtaining responses from many of the faculty contacted. Conducting the interviews in March or April might have seen a better response if allowed by the project timeline. As it was, the earliest invitations were sent just prior to finals. While some faculty responded immediately, there were a number that did not respond at all. Several who responded would be unavailable until mid-June or until the beginning of the fall semester in late August. Eight additional faculty were contacted in mid-June as a result. In total, eleven faculty agreed to participate of the twenty-four contacted.

The timing of this project was not ideal for faculty participation. Many agriculture faculty are on nine-month appointments and spend their summers doing research in the field or traveling internationally. This took them away from campus during the time period allotted for the interviews. Even faculty on twelve-month appointments spend the summers conducting research because it is the growing season. Some faculty responded that they would like to participate but could not do so during the time frame given or had very few days in which they would be available to interview. Those who did respond were more likely to already be in active communication with librarians which meant that this project did not gather many responses from researchers who had little or sporadic contact with the library. This latter group of faculty is always of interest to library leadership as it could represent an area for growth and an opportunity to better understand library users who don't regularly communicate with librarians.

The first interview was conducted in mid-May and the last conducted in early July. Ithaka S+R scripted eleven questions for the interview. We were instructed to ask the questions in order and to not skip a question. We were allowed to rephrase the questions if necessary and ask follow-up questions for clarification. The scripted questions were open ended and the participants could expand on and qualify their answers as they wished. The questions focused on the individual's specific research, their research methods, publication/dissemination practices and the current state and future of agriculture. In addition to the questions, we were told that, if we obtained permission, we should consider photographing some of the collections and/or research spaces to include in our report. These photographs would aid in illustrating the broad similarities and differences between agricultural research and research in other branches of science.

Each interview was digitally recorded. The recordings were sent off-site to be transcribed by a company called Transcript Divas, Inc. Each researcher coded all eleven of the transcripts. Both sets of codes were input into a spreadsheet for an initial analysis. The codes were then revised and refined before being used in the final analysis of the faculty responses to the questions.

Findings

Scholarly Domain of Agriculture

Kansas State University was the first land grant institution created after the Morrill Act passed and was signed into law in 1862. Bluemont Central College became the Kansas State Agricultural College in 1863. There were several other name changes over the years with the latest being Kansas State University (referred to as K-State in the remainder of this report). The overarching research, teaching, and extension foci of the K-State College of Agriculture are animals and animal systems; food science; food and feed safety; grain science; and plants and plant systems. (K-State College of Agriculture, 2016)

Current curricula and research at K-State emphasize species of economic importance to the state such as cattle, swine, wheat, and grain sorghum. Additionally, plant pathology, plant and animal breeding and genetics, and food science and food safety (from field to table) are also foci for K-State researchers. The university is internationally known for its grain science and milling department, the only one in the

United States to offer a degree program in milling science and management. (NAMA, n.d.) Connected to this area of strength are cereal chemistry, baking, animal feed, and stored product entomology.

K-State is located in the Flint Hills, the last large swath of tallgrass prairie in the country, and research about the prairie, rangelands, grazing, invasive species, and prescribed burning for managing grassland ecosystems are unique, economically important, and influences research interests at the university. While the foci of research are topics of economic importance to the state of Kansas, much international collaboration takes place in these areas. For example, K-State is now home to five USAID Feed the Future Innovation Labs which are designed to “draw on the expertise of top U.S. universities and developing country research institutions to tackle some of the world’s greatest challenges in agriculture and food security”. (USAID Feed the Future, 2016)

Agricultural science is often stereotyped as an applied science. While much research conducted at K-State is directly applicable to agricultural producers and processors and is used for the creation of extension publications; many K-State researchers’ applied research interests also provide them with a more ‘basic’ research focus that complements their applied research. This ‘basic’ research focus ranges from genetics and molecular biology to biochemistry. For instance, one researcher studies the biology of biological controls in addition to “the broader pest management realm within agriculture”. Additionally, some faculty research interests do not fit within a strict definition of either of these ill-defined terms. Regardless, the type of research drives the publishing habits of a researcher.

Just as the research is varied and often cross-disciplinary, the methods used to conduct the research and collect data vary widely. Sampling, measurements, survey instruments, laboratory analysis, randomized design, control groups, chromatography, various types of photography, replicated experiments, microtomography, consumer sensory panels, and statistical analysis, singly and combined, were among the research methods mentioned. When the research was for producers and/or companies, efforts were made to simulate the conditions that would be present in the field. As research becomes more interdisciplinary or as it relates more to human behaviors regarding consumption of products the focus of the methodology and the methods themselves broaden and become more interdisciplinary.

Among the frequently mentioned concerns regarding the data collected were concerns about the documentation that needs to accompany or be included with the data. SAS and Excel were the most frequently mentioned programs used in data analysis. Other concerns were malfunctions in the statistical analysis or in the software, mistakes in entering or reading the data, sufficient data, statisticians who don’t understand agricultural experiments, and whether or not the data makes sense.

Serving industry and agricultural producers, large and small, is one of the missions of any land grant university. While this often results in extension specialists synthesizing research-based information for the public, researchers also collaborate with producers and industry on research. This can take several forms. A researcher might test a new product, such as a pesticide or feed additive, for a company in order to supply additional data about that product’s efficacy. Some researchers work quite closely with industry and/or commodity trade groups to research topics that are of the most current interest to producers and processors, the results of which serve all groups. One faculty member noted that “in our field probably being the applied world to work with industry, which is what all, everyone in my world does, you have to be pretty in touch with what industries are actually doing and what they care about . . . which is not necessarily funded by USDA or NSF or NIH, so I have to get a lot of dollars (for research funding) from other areas.” Some researchers work with land owners to conduct research on their

property when access to a certain type of landscape is required for a project. Other researchers work with livestock owners using privately owned stock to research specific concerns of the owners. An example of this is research conducted on feeder calves evaluating the best conditions for weight gain after transport.

While working with industry and producers is mutually beneficial, these relationships are not without problems. A landowner might back out in the middle of a long-term experiment or make management changes that are not within the approved protocol for a project. One researcher noted that this presents a challenge because landowners “want 100 percent flexibility and you (the researcher) want 100 percent control. And basically you end up throwing out data because you can’t use it because they’ve (the landowner) changed something in the middle of a project.” When working with industry, a company might not want the results published. These result in unfinished projects and limit the researchers’ options for publication. Either of which can be extremely harmful to pre-tenured faculty in the tenure and promotion process. Then there is the problem of ensuring that the process used is practical and economical, not too complicated for the producer, and can be scaled for large-scale production. If the research results can’t be used, or won’t be used as a result of these considerations, the producer/company is less likely to partner with the university on further research.

Finding Sources and Research Needs

When asked about their information seeking habits, nearly every researcher interviewed replied that Google Scholar was one of their “go to” databases. Those that mentioned more than one preferred database would either choose Web of Science™ or Scopus®. Researchers working in areas with significant overlap with veterinary medicine also used PubMed. On K-State Libraries list of databases, access to over 300 databases is provided. While some of the databases listed are freely available, many are not and the preference for such a limited number of databases in the sciences is backed up by the statistics collected by librarians in K-State Libraries Content Development and Acquisitions Department. Researchers seem to prefer larger, multidisciplinary databases over smaller, focused databases. Very few detailed their search strategy when doing literature searches. Many indicated that this was something that their graduate students did and then the researcher reviewed results.

Some researchers said that they would search or contact a specific author when beginning their research plans. This was both to acquaint themselves with a newer area of interest or to see if there was overlap that could lead to a collaboration.

Several researchers mentioned the value of older literature to their research. For some this is because technology has caught up to theory posited in the fifties, sixties, or seventies. For others, the growing desire to offer more ‘green’ solutions to problems has led to researching the literature done in the early 20th century.

After gathering articles during a literature review, some faculty still maintain paper files of those articles. Most have extensive paper files of articles from early in their career. Those who organize their information in this way have a “system” that works well for them though to an outside observer, these systems are very messy. They are able to find what they need, when they need it. One interviewee articulated their paper filing system in this way: “So I still use a paper system and I use it every day, many times a day. And I have it by author. So I just remember an author and I say what this author is. I

go to my reference card for him and then I can pull up the reference that I want.” Some faculty are in a transitional phase. They keep paper files that they use less and less but most of the information they gather is on their computers, in the form of digital PDF files. These faculty, in particular, struggle with organizing their digital files and keeping up with the volume of research produced. “There’s just so much more information. You look at the papers from the mid-century and they were so much shorter or they were an entire life’s research into one 30-page pamphlet, you know. But now there’s just so many papers on everything and they’re longer papers. And it just gets really hard to get through it all. So I don’t know what the answer is.” They also download the same article multiple times because they don’t have a system on their computer for organizing these files.

When asked how they kept current with the trends in their research areas and with agriculture more broadly, most responded that they networked with colleagues or looked for published research by specific authors. All agreed that there was too much being published to keep up with all that may be relevant. As one researcher noted, keeping current is “talking to peers, going to professional meetings, keeping up on market conditions and things that may not make sense today might be more relevant when conditions change in the future” not reading all the published research in an area. Attendance at society and industry meetings was also mentioned frequently. This served a dual purpose – allowed them to keep up with current interests in their fields and aided in building and retaining their reputation. “It’s absolutely essential that one has to go to meetings regularly and not only national meetings but international meetings.” As local budgetary conditions worsen, attendance at international meetings has shifted from yearly to once every two or three years for some of the researchers. Those with a greater extension responsibility emphasized the importance of field days for producers, local producer meetings, commodity group meetings to keep current with current concerns and potential research areas. Societal newsletters and publications also play an important role in keeping current.

Dissemination Practices

As a land-grant institution the dissemination of research results has never been focused solely on scholarly venues. The initial charge of the Morrill Act of 1862 was to focus on the teaching of practical agriculture. This was modified in 1887 by the Hatch Act which resulted in the creation of agricultural experiment stations. An outreach mission was added in 1914 with enactment of the Smith-Lever Act and the inclusion of cooperative extension to the mission statement.

As an applied discipline, dissemination of agriculture research has always had a focus on more popular and practical publication outlets. For those researchers/faculty with a joint appointment (University and Extension) dissemination is a balancing act. They need to publish in peer reviewed journals, preferably in those with a high impact factor, to meet the requirements for tenure and promotion. Yet they also have a charge to understand “how it affects people’s lives and then letting them know”. They write and publish various extension publication, written in the language of a lay person. Some mentioned requiring their graduate student assistants to write extension pamphlets. Some also use social media (Twitter accounts, blogs, You Tube, etc.), web pages, and videos to distribute the results of their research in a more easily accessed, in a timely manner. As more research is funded by commercial entities, their more research findings are published in reports that go to the funding agencies which can be a private business. Many times these reports include proprietary information or the funding source

limits how much, if any, of the results can be released through scholarly journals or extension publications.

For the scholarly publications, many of those interviewed indicated that they try to publish in journals related to their discipline or subdiscipline. As research in agriculture has become more interdisciplinary it has also become more collaborative. A common response was that selection of a publication outlet “depends on topic, I publish in many different journals”. Collaboration has expanded the selection of sources for publishing research. Several interviewees mentioned publishing in subject areas other than their own as a result of collaboration. As one researcher stated, when “collaborating with colleagues outside of horticulture and the project is a better fit for their area then we publish in the journal associated with their expertise”.

Most of the faculty interviewed listed specific titles or their societies publications as the prime targets for their publications. Several of those well established in their career stated that they were more interested in getting the information to those who needed it than they were in selecting a prestigious journal that did not have the correct audience. As one researcher put it, “when we publish, we look for who’s the right audience”. This was especially true of those involved in interdisciplinary research. Several also stated that they were not as interested in being listed as first (primary) author as they were in getting the research published. One researcher noted that publications in scholarly research journals, more than extension publications “helps his research facility maintain relevance in the eyes of administration”.

Extension publications, proceedings, trade publications, reports to funding agencies and monographs were cited as other publication outlets, in addition to the peer reviewed publications. Extension and trade publications were mentioned extensively, especially by those with bigger extension appointments. Publication of a book/monograph was actually the least mentioned publication venue.

Many expressed dissatisfaction with the peer-review process. “Peer review as a whole is pretty archaic and pretty antiquated system.” The tenure clock is not flexible. The length of time between being accepted for publication and the appearance of the publication can be extensive. As the research becomes more interdisciplinary, it becomes more difficult to find true peer reviewers – the reviewer wants it to be about what s/he knows and won’t accept that the research is outside those parameters which may not align with the research focus of the article submitted for review.

Finding the time to write was another theme. As budgets are reduced and as more retirees are not replaced, there is less time for writing let alone for all the edits and rewriting often required in the peer reviewed process. One concern that was repeated by several of the researchers who were nearing retirement was the fate of their unpublished data or articles that were never published but might still have value to the scientific community.

Many of those interviewed were not only familiar with institutional repositories but actually knew the name of K-State’s repository. Only a few indicated that they were actively contributing their publications to the repository. Most indicated that they knew that the library had a process in place to identify and ingest much of their current published work. Unpublished papers, data from past research and retention of this information outside of their file cabinets and computers concerned many. As one stated “And as I get older and as I get a bigger backlog of things that I’ve got data that I need to publish but I haven’t gotten around to it yet, I realized that probably almost everybody has that (type of) data.”

Not one interviewee had heard of PubAg, a repository for agricultural research similar to PubMed, being offered by the National Agricultural Library of the U.S. Dept. of Agriculture. While a few had heard of data repositories and thought they could be useful, none knew of a depository for their areas of interest. Lack of time was given as the most frequent reason for not more actively depositing their data or publications in a repository.

Challenges for Agriculture and the Future

The most common theme seen as a challenge for agriculture and for the future is the lack of trust held by the public for science or agriculture. Part of this is not understanding agriculture or the scientific process. If you don't understand the what, how or why, you can't understand or trust the result. There is more and more of a disconnect between consumer perception and reality. "Special interest groups and consumers want to know more about how their food is produced so it must be backed up with good research." There is less understanding among the public that all land is not created equal as far as agriculture is concerned. Some land is more suitable to grazing livestock than it is to raising crops. There is also an increasing generational divide as fewer individuals have actual experience on a working farm. More individuals "don't understand the daily grind, the daily activities associated with it". These individuals not only don't understand the economics but they don't care about the economics of agriculture.

In general, the public has (and wants to retain) an image of food production as it was in the 1920's when small farms were operated by families and all the animals roamed freely outside. At present, the public's view of agriculture is founded on a belief based system. They don't realize that for the most part the larger feedlot operations have resulted in safer and more affordable products while improving the quality of animal care. Organic food production and consumption is another belief based area for the public. Some people believe that organically raised food is healthier for you though there is not currently enough completed research to verify or negate this claim. While the majority of the public has neither the desire to raise their own food nor to change their perception of how it should be produced, they still don't want 'technology', based on science, as a part of their food production. Complicating consumers desire for old-fashioned agriculture is the need to feed a planet with a growing population. Does it have the capability to do that or is modern technology required? There is a disconnect between romantic notions about food production and the reality of feeding nine billion people.

Part of this distrust of science by the public is a result of poor communication to the public. Researchers have not been trained, nor expected in the past, to communicate with those who are not professionals in their discipline. One researcher noted that "we come on as scientists, not as communicators". Scientists are trained to write so that they will not be misunderstood. They are not trained in writing to be understood so communication with the public lacks the clarity necessary for the general public to truly understand the science being presented. Without out training to communicate to the general public, the majority of scientists are not the best people to overcome this distrust. However, researchers with extension tenths or who work extensively with industry are generally more effective communicators with the public because it is a part of their job expectations.

Included in the above theme was the lack of writing skills found in some of the students at both the undergraduate and the graduate level. "Writers need to remember when you're writing research you need to start telling a good story." In addition to poor grammar, incorrect punctuation and spelling, inability to cite references correctly and limited vocabulary, several of those interviewed noted the inability of students to present a narrative outlining their research, describing their methodologies, analyzing their results and then presenting the outcomes and their conclusions. "Undergraduates and graduates, they are losing the ability to write coherently in a long form." These faculty also stated that they spent as much and sometimes more time on the helping students' with their writing as they did on their own publications. One observed the "tendency of students to just put up a jumble here and there". More students were entering the programs without an understanding of academic scholarship and with "this entitlement attitude that the professor should do everything for them now". "They don't think it's important to publish their work and get their name out there. That's why I have all of this backlogged papers from my students that I have to go find time to do it."

Within the realm of research at the university, two key challenges emerged from our interviews. The first is finding funds to conduct research which is becoming more difficult. There are grants but in the calls for proposals from grant funding agencies the topics are only occasionally related to specific issues/needs of producers/farmers in Kansas or even to the broader issues facing agriculture with the exception of the USDA. However, the funding from the USDA to land-grant universities is decreasing as is the amount of grant funding for USDA-sponsored research. Grant requirements are becoming more difficult. According to one researcher, you "go through all the gyrations of generating money, trying to, through the federal scheme, and having the odds of less than 10 percent, 5 percent, to get it, and then when you get it you're so encumbered by their restrictions and who you got to work with and how you got to do it, and all this." State of Kansas funding for agricultural research is also decreasing. As funding from state and federal governments decreases, more research funding is coming from industry. Companies now want contracted research to document the effectiveness of their products not just conduct the initial testing on the product. Researchers have had to learn to leverage funding from commodity groups, local companies, and large corporations to support their research. Complicating the already difficult funding environment, the cost of doing research (maintenance, repair, depreciation of equipment/materials, labor, etc.) is increasing.

The second key challenge is the lack of time as teaching loads increase while decreases in funding (base budgets, grants, etc.) have led to a reduction in support staff and an increasing the amount of time that faculty spend on the day-to-day management of projects. This also translates into less time working with the graduate students, less time for reviewing the literature, less time for writing proposals or articles, and less time planning for and doing the actual research. One researcher commented that "as a faculty member I've been responsible for the fund raising, working with the design companies on the blueprints, checking concrete specs . . . again back to diverting time to things that I don't have expertise in but have to do because there's not funds, not people available from an infrastructure standpoint."

Isolation within their respective areas of research was a lesser mentioned but important theme. Retirements have resulted in some researchers having a peer group of one or none. These researchers also "don't find a group of students showing interest in this area" and they do not see any PhD programs for their areas compared to other areas in their fields. There was concern for the knowledge being lost as the data and files of the retirees were discarded.

Implications for K-State Libraries

Library Databases

K-State is already in a challenging budget situation and knowing what databases researchers can name as their favorites is useful information when trying to make difficult economic decisions. Information directly from researchers can be used to supplement the usage statistics currently used for decision making. Google Scholar, Web of Science™, and Scopus® are the most popular databases with the faculty interviewed. All are interdisciplinary databases rather than narrow subject databases and communicating more with faculty about K-State Libraries processes for making selections for selection and de-selection of resources will help researchers understand the impact of their search choices.

Google Scholar is, by far, the most popular database used by faculty and students. While Google Scholar is a powerful tool and very popular our questions did not discern whether faculty members' search skills were effective in gathering all of the information on a particular topic. While K-State Libraries currently offers a workshop on effective searching in Google Scholar for graduate students, organizing more workshops aimed specifically at faculty members on effective searching in high-use databases would be useful considering that some faculty said that they "searched the library web site" and were not necessarily aware of the different tools available to them for searching the literature. Since Google Scholar is so popular perhaps we should divert more of our instruction focus from library databases and tools to teaching faculty and students to be excellent Google Scholar users.

Organizing the Results of a Literature Review

While K-State Libraries provides access to RefWorks to all faculty, staff, and students, most faculty we interviewed do not currently use it. If they used it at one point, they were unaware that we still provide access to it. They want a way to organize their digital files in a way that works as well as paper files once worked when paper was the only option. One researcher explained that "I'm really trying to figure out how to more or less digitize my files and get rid of my file cabinets. It's just so slow compared to the other ways I do things. And the other thing that's an increasing problem is organizing this huge mass now of papers that I have." The new RefWorks provides tools to do this in a more effective and efficient manner than the old RefWorks and needs to be heavily promoted to faculty as tool to solve this problem of many identical digital files that are not organized in a computer hard drive. The organization of information is a library strength and we should be promoting this strength to help our faculty organize the information they use in their research.

Student Writing

While there are students who are excellent writers, several faculty members lamented the writing skills of some of their graduate students, in particular. The library may not be able to directly change student writing skills but there is a link between good writing and good information literacy (Shao and Purpur, 2016) which is a focus of library instruction sessions and tutorials. The library can work to integrate information literacy training into more classes across campus either through class visits and/or using

New Literacies Alliance (NLA) lessons. K-State Libraries is a founding member of the New Literacies Alliance which was “formed to address the need for students to become critical creators and consumers of information in a variety of formats and contexts”. (New Literacies Alliance, 2016)

Communication from the Library

There was a consistent desire for more communication from the library and a better understanding of the services provided by the library from the faculty we interviewed. While there was interest in more communication, there were also areas of notable communication success.

Successes

K-State Libraries maintains a robust, free interlibrary loan system. Not surprisingly, faculty are very aware of this service, use it frequently, and are appreciative of information it provides. One researcher commented that “years ago, if you found something that you wanted to read and it was some obscure journal you put an interlibrary loan in, and you waited for two weeks to get it and felt like you had a treasure when you found it. It’s so easy now.” More surprising was faculty members’ awareness of two branded services. The first is K-REx (K-State Research Exchange), the university’s institutional repository. Many faculty identified it by its acronym and are well aware of its existence and purpose, even if they do not use it to deposit their publications. The second is “Get It”, which is the branding used by K-State Libraries for our link resolver. Interviewees also identified it by its branded name and knew that that was what connected them to full-text content. We attribute their familiarity with it to the fact that they are forced to use it frequently, like interlibrary loan.

Room for Growth

Faculty are not aware of all of the services and resources that the library provides to them and their students. Librarians need to do a more effective job of continually articulating all of the services that the library provides. For example, some faculty mentioned that they were aware that we once had RefWorks but didn’t know that we still provided access to this tool. The success in raising awareness about K-State’s institutional repository (K-REx) is due to a strong promotional push to faculty when K-REx was first created and continual communication about it since that time through emailing faculty when they publish an article to ask if they would like to deposit it in addition to other communication about the institutional repository. Faculty would be more aware of library services and resources if everything was promoted in this way. Frequent updates and meeting with faculty will be important in improving communication. Current staffing levels with fewer librarians in public services will make accomplishing increased communication a struggle. One avenue that may be effective is to meet one on one with all new faculty members so that they have a firm understanding of library resources and services from the beginning of their tenure at the university. Finally, librarians often struggle with communicating the value of their work to the communities they serve. Professional development to increase librarian confidence and skillfulness in communicating their work would be useful. In the same way scientists must work to communicate science to the public, librarians must work to communicate with the campus groups they serve.

Conclusion

Our intention in conducting this study with Ithaka S+R was to learn more about faculty research areas, habits, and needs while also developing actionable steps for K-State Libraries to take to better serve K-State researchers and their students. More outreach to early-career faculty is necessary to determine if their needs align with those of tenured faculty. The first step we will take to move forward ideas presented in this report will be to present it to K-State Libraries administration, faculty, and staff for feedback about how the findings might impact the way different library departments serve faculty and students in agriculture.

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Appendix: Structured Interview Guide

Research focus

1. Describe your current research focus and how this focus is situated within the broader agriculture discipline and the academy more broadly. [Probe for whether/not they see themselves as located firmly within agriculture as a discipline or located across/between disciplines]

Research methods

2. What research methods do you currently use to conduct your research?
3. What kinds of data does your research typically elicit?
4. How do you locate the primary and/or secondary source materials you use in your research?
5. Think back to a past or ongoing research project where you faced challenges in the process of conducting the research.
 - a. Describe these challenges.
 - b. What could have been done to mitigate these challenges?
6. How do you keep up with trends in your field more broadly?

Dissemination Practices

7. Where do you typically publish your research in terms of the kinds of publications and disciplines? How do your publishing practices relate to those typical to your discipline?
8. Have you ever deposited your data or final research products in a repository?
 - a. If so, which repositories and what has been your motivations for depositing? (i.e. required, for sharing, investment in open access principles)
 - b. If no, why not?

Future and State of the Field

9. What future challenges and opportunities do you see for the broader field of agriculture?
10. If I gave you a magic wand that could help you with your research and publication process – what would you ask it to do?

Follow-Up

11. Is there anything else about your experiences as a scholar of agriculture and/or the agriculture discipline that you think it is important for me to know that was not covered in the previous questions?