17 Interviews with Virginia Tech CALS Faculty: State of Research and How Information Professionals Can Help

By: Inga Haugen

Background

In the early months of 2016, Ithaka S+R, a not-for-profit service that helps the academic community navigate economic and technological change, asked various land grant universities to be a part of a national project examining the current state of research and how information professionals can support agricultural researchers. Eighteen institutions and the National Agriculture Library (NAL) chose to participate; Virginia Tech (VT) is one of the participating entities. There were two main aspects of participation, the interview stage and then reporting. Each of the institutions were tasked with identifying appropriate faculty to interview, and then conducting the interviews, transcribing and anonymizing the transcripts, and only then sharing information with Ithaka S+R.

The national report was created by Ithaka S+R staff Danielle Cooper and Roger Schonfeld from 5 anonymized transcripts made available from the interviewing process at every participating campus, resulting in n=95 interviews for the national report[1]. This report herein is created from only the local responses at Virginia Tech (n=17 faculty). The project we report here was designed with this combined nature, therefor some of the variables of the study design accommodate the scope of the national report better. However, analyzing the 17 results from Virginia Tech reveals a vision of what researchers at Virginia are doing as they seek information.

Study Design

The national study parameters included Agriculture Faculty, and given the various structures of departments at various campuses, library professionals needed a tighter scope so the results would be manageable and more cohesive, allowing for trends in the agriculture community to come forward. For this study, Ithaca S+R limited the study's mission as follows:

> "This project seeks to explore the research practices associated with agriculture studies in all of its aspects, including food, the environment, natural resources, and international issues. We recognize that the field of agriculture is broad and that researchers fall on a disciplinary spectrum that encompasses the sciences, social sciences, economics and business. These researchers explore a wide variety of topics such as but not limited to: agronomy, molecular biology, informatics, remediation of soils for production on earth, cellulosic research for biofuels, nutrient enhancements in food, and the human dimensions of working with youth, rural and urban populations. Agriculture is an important mission of many public universities and research in the field can be conducted in partnership with

[1] The national report can be found at Cooper, D. and Schonfeld, R., et al. "Supporting the Changing Research Practices of Agriculture Scholars." Ithaka S+R, forthcoming 2017, sr.ithaka.org/publications.

> industry, NGOs and/or various levels of government. We recognize that Agriculture has important connections with veterinary medicine and other adjacent fields. For the purposes of this project, scholars more strongly aligned with these fields, and less focused on agriculture, will be held out of scope."

Given that definition, all the departments from the Virginia Tech College of Agriculture and Life Sciences (CALS) were appropriate to approach for this study, and the College of Natural Resources and Environment (CNRE) was held out of scope. The interview process was guided by IRB protocol, and the protocol consent form and the interview questions are attached as appendices. The primary investigator (Haugen) set a goal for the interviews to be across the spectrum of CALS, to represent as much of the diversity possible. To that end, there is at least one person from each department; early-career through now retired (though at the time still active) faculty; on campus and AREC (Agricultural Research and Extension Center) faculty; directors, leadership team members, boots-on-the-ground researchers; ranges of appointments, split between teaching, research and extension, some 30-30-30 to 100%. The incredibly VAST range of faculty researchers, in addition to the type and kinds of research means there is no way of taking a mathematically, statistically backed "representative" sample. However, Haugen did try to include as many of the voices as possible.

A bias to consider, is that the people who responded are relatively positive, ie "library friendly". The people who are not library-friendly did not respond to the requests through various channels for an interview. To that end, however, the information collected can be extrapolated to cover most agricultural researchers, particularly at land grant institutions, and will absolutely reflect concerns of people who would be willing to receive support from information professionals.

This local report focuses on the findings that will be of most relevance to Virginia Tech as a baseline of what is working well now, and opportunities for future planning.

Composition and brief history of the Virginia Tech College of Agriculture and Life Sciences

On the College of Agriculture and Life Science's "About" page, the college has this to say for itself: "The College of Agriculture and Life Sciences is the center of the land-grant tradition at Virginia Tech. Closely associated with the college -- in fact, nearly seamlessly integrated with it - are the Virginia Agricultural Experiment Station, established in 1886, and Virginia Cooperative Extension, established in 1914[2]." Over half of the first degrees awarded in 1875 at Virginia Agricultural and Mechanical College were in agriculture, or ag mechanics. Today, Virginia Polytechnic Institute and State University has 8 colleges, in addition to CALS. Within CALS it "is nearly impossible for students not to study under professors who have research responsibilities with the Experiment Station or who have responsibility for spreading knowledge to all Virginians through Extension. The interplay of education, research, and Extension give students a perspective on today's world rarely available anywhere else in Virginia.[3]" The integrated nature of applied and "pure" research, and the interplay between research, Extension,

[2] http://cals.vt.edu/about/history.html on 4 Dec 2016
[3] ibid

and teaching makes for good science, recommendations for producers, and fantastic opportunities for students, but incredible challenges to navigate as a faculty researcher. Supporting that vast spectrum can be even more challenging. The librarians have a duty to their respective liaison groups to have information resources available and accessible, and have it before point of need, if at all possible.

The College has the following departments:

Agricultural and Applied Economics
Agricultural, Leadership, and Community Education
Agricultural Technology
Animal and Poultry Sciences
Biochemistry
Biological Systems Engineering
Crop and Soil Environmental Sciences
Dairy Science
Entomology
Food Science and Technology
Horticulture
Human Nutrition, Foods, and Exercise
Plant Pathology, Physiology, and Weed Science

Although those are the academic "ivory towers", Virginia Tech identified "priority areas" as well. These are: agricultural profitability and environmental sustainability; food, nutrition, and health; biodesign and bioprocessing; the green industry; infectious diseases; and community viability.

Research team

The researcher for this interview and reporting process was Inga Haugen; the Agriculture, Life Sciences, and Scholarly Communication Librarian at Virginia Tech. Haugen included Ginny Pannabecker and Kiri DeBose in the IRB protocol to have their expertise available as a sounding board and personal connections available to reach all of the departments in CALS. Pannabecker is the Health, Life Science and Scholarly Communication Librarian, and DeBose is the College Librarian for Natural Resources & Environment and Animal Sciences. Between the three women, they cover the liaison responsibilities for CALS, roughly divided into Pannabecker taking humans/human health related subjects, DeBose works with animal subjects, and Haugen supports the rest, including the ARECS and Extension.

General Methodology

Interview Logistics

Haugen conducted one on one interviews, when possible, at the interviewees' office. Some, due to distance, were conducted via web-conferencing (WebEx, Google Hangout) or via telephone. Some people with office locations off-campus still had face-to-face interviews because Haugen was able to travel to their off-campus locations. All interviews were recorded with either an app

on a phone or a program on a computer, recordings were transcribed manually into Microsoft Word, and the transcripts anonymized. Transcripts will be deleted, as required per this study's IRB protocol. (Next time, we will submit our IRB approval application with a request to to archive the transcripts in VTechWorks, the institutional repository (IR) for Virginia Tech. Retaining such transcripts allows for re-use, and shows good practices for other researchers.) Ithaka S+R requested 5 of the transcripts for the national report. The methodology for chosing which transcripts is outlined in the national report, but the information available to differentiate the transcripts was percentage appointment between Extension, teaching, and research, in addition to the department the faculty belonged to. The five transcripts sent to Ithaka are also included in this analysis. Content analysis of the transcripts was done solely by the author. No software was utilized for the analysis.

Interview Questions

The questions were crafted by Ithaka S+R, and discussed during the training sessions on running this study. Please refer to the national study for further information about the questions. The questions are attached at the end of this report.

Results: overview

Response categories roughly relate to the questions, and the categories that emerged during the analysis are:

- staying connected,
- information/data,
- academic disciplines and areas,
- challenges,
- opportunities,
- dissemination of research output,
- repositories, and
- the magic wand question.

The themes that emerged were more related to an underlying current that became apparent with each interview. Some were surprising, like each researcher asking for writing help for their students, undergrad, grad and even post-doc peers. Many of the themes are understandable, given the scope of this report, a focus on land use, climate change, and accurate information for decision makers. The nuance of the philosophy of land grants brought forth by the researchers was welcome, and a luxury many times we, as fellow faculty, don't take the time to explore.

One category and theme deliberately omitted from this report are research methods. Given that the subtitle of the report is "State of Research and How Information Professionals Can Help" this seems a poor choice- however, the range was so broad, the detail so specific, it was hard to comment on research methods in a way that preserved anonymity and gave more information than "qualitative and quantitative data and analysis were used on field, lab, and found data". Potentially a report on research methods could be created, and may be forthcoming. The researchers generally spoke of either hands-on data, or computer models before speaking about searching the literature. Literature searches were conceived of being very important, with

"important", "cornerstone of research" and "pivotal" words used to describe it. Researchers used alerts, word of mouth, planned searches, and reading literature reviews from students' work to inform their research. The research within literature was conducted in the discovery layer Summon, Google Scholar, Web of Science, individual society associations, and every major database VT subscribes to, in addition to public resources, like USGS and USDA. When pushed to describe how the researchers found places to look for information, one participant said "I have been using it for some time, so I should say that, based on experience, I can locate them. I should also mention that, of course, these data sets are constantly revised and recreated, so they normally send me, through newsletters, announcements that the new data set is available." Sometimes researchers don't shift to VT access points unless and until their other access is cut off; one researcher said he would move his alerts and access to our systems because I asked him to; "I have all my privileges at [redacted] because I retired from there, but yes, I'll shift them all to you".

Results: Staying Connected: how researchers stay current, and up to date

When asked about how they stay up to date with current trends, the researchers had some fairly standard answers, "e-newsletters from the different organizations that are leaders in my field", "going to meetings, conferences; making presentations", "going to national meetings first", "smaller, discipline specific conference", "talking to colleagues on campus" and "try to keep up with the journals, but that's really, really hard these days". It was expected that the peer review process would be mentioned, but it came up in the context of staying current more than in any other portion of the interview and questions. "I try to accept every invitation I get to review papers" and "serving on editorial boards and serving as reviewers". An additional way to stay current was "writing grant applications", in that the literature review needed for the application was high incentive to be thorough and accurate.

Results: Info/Data: What information and data they are working with, how they are working with it

Most researchers differentiated between source information exterior to collected or generated by their own labs and information found in literature. "I mean we draw on our own research, but we also draw on what other people are doing". They wanted more data and "access to the data behind an article/analysis", because it was "not enough just to have a graph".

The researchers talked about their research methods, which runs the spectrum from collecting field data, to passive measurements from instruments, to linking field observations/data to computer models. The sheer number of variables to account for, and data to collect was a common lament, "just a matter of space and giving them a growing environment that we can control, keep the cover on just because we've taken the rain off. It just reduces the complications in our studies."

Through all the conversation about data, one theme became clear; "cross-area collaborations are really important", although the ways to accomplish that collaboration, or even data sharing were as broad as the field of agriculture. "We need to say, okay, where are we going to deposit our spreadsheets; how are we going to encrypt our data to where it's safe but it's still in that digital

cloud, I guess; where people can get access to it if they want. Everything is all about transparency now. So with those types of questions, as a researcher, I was not taught to do that."

Results: Academic Disciplines and Areas

Academic disciplines and areas spoke to the academic categories, ie Agricultural Economics, but also to program teams and areas of research. "water is the core of the disciplines that you can link with agriculture, civil engineering, geosciences, earth sciences, atmospheric sciences. So it's all combined". The researchers clearly saw themselves as part of a bigger picture.

> "I'm probably not the expert or even the top ten or hundred on one specific topic. I do think that my research as a whole is unique because we use so many different tools. It's how do you integrate those tools to answer unique questions that maybe somebody else is answering one part but not the other? We integrate those together and do these studies where we go all the way from plants. We analyze it. We maybe make some unique fraction of compounds that nobody else has ever produced.
>
> Then, we show that has some unique activity in an animal study or a cell assay. We're putting things together that other people can't put all those pieces together because they've chosen to specialize in one area. Again, the work that they do in that one area, the quality may be ten times better than what we're doing in that one area, but it's the integrated aspect of the research that I think makes me a little bit unique. Obviously, there's people that are doing integrated transdisciplinary, interdisciplinary research."

Connected to the idea of a bigger picture, the researchers also talked about the time aspect: "longer term research projects" and "a lot of times, it's not a matter of money and funding. It's just a matter of having enough time and enough effort and enough trials and plots and observations out there". And the aspect of training the next generation of students wasn't left out, either. "I think one of the things that is short sighted of us when we focus, we train graduate students – and I'm certainly trained on a very specific piece of the puzzle, but really what we need to be looking at is people that are going to put those pieces together into a system. I think that's a real shortcoming of how we train students." "Grant programs you know it's for a three-year cycle. Say you wanted to do some type of a systems research … change is going to come over probably a five to ten-year period you start to see maybe at year four of the study." "getting things funded that don't have immediate application can be difficult. You know, industry does a lot of research but really their goal is to make a profit in the short term or relatively short term. And that can be a challenge in the big picture – you know, long-term systems wide picture." It even came out in the magic wand question, they wanted a "magic wand that would be to build these types of interdisciplinary groups that can work together on projects that may have a greater application than either [personal part]".

Results: Challenges

Following are some aspects that the researchers themselves identified as challenges: An aspect of hardware, “an IT challenge that we’ll research because of the complex nature now, it's so dependent on infrastructure and technology but the mouse doesn't work on the computer that I need. On a third of a million-dollar instrument that I have, a $15 mouse isn't working”. A challenge with the software “understanding how to do a computation analysis and simulation”. The connections are a challenge “bandwidth for downloading and uploading”. Even when the technology isn’t a challenge, there is a concern about using the tools appropriately. If a researcher doesn’t know how the software works, how can they use it correctly? And when the research model chosen is dependent on the software, how can you verify work? Many interviewees said “gaining expertise with the research models” was a challenge, because you want to have the fewest variables possible, and learning a new technique can be valuable, but when do you have the time and repetition to become an expert with that technique/tool/method/model without compromising an experiment that has other researchers depending on your results to craft the final report? Which brought up another challenge, how to “take data that's going to be applicable across the board to be able to take it from one stage of research to the next stage of research to make it workable”.

Researchers also were concerned about communications channels, reporters, consumers, and students having trouble distinguishing between fact and fiction. “ I've done interviews with media outlets where they will fight me on the facts”. “The lack of critical-thinking skills, I think too sometimes and lack of correct information.”

Even though the researchers were speaking to the larger picture, concern for how limited and limiting the current environment is came through clearly. The researchers said to “publish within our discipline may be a mistake” and “generally we segregate ourselves”. We “really we need to be in that [integrated] interface to be – to have the maximum impact.” and “faculty review is largely based on research publications and grant funding. You know, you tend to gravitate towards those if you want to be successful within the system and that kind of leaves extension out.”

Results: Opportunities

These are the answers researchers gave when asked how they would mitigate the challenges. “I try to design my experiments as simply as possible to make them a little bit more elegant and simple and easy to understand.” The underlying idea with making experiments simple and easy to understand was to allow more people to have access to the results. Not only the aspect of having “physical” access to information, as in both physical and electronic access “the Cloud has enhanced research productivity”, but also the idea of literacy- of writing in a way people will be able to understand the experiment and the results.

Some of this comes from their own frustration in trying to understand information they need. As the researchers were talking about what they are doing moving forward, they said “I guess I'm coming into a lot of unknowns as far as different kinds of data, how we're going to collect it and how we're going to make any sense out of it after we get it.”

One thought was support "would mean that you'd have somebody to be able to help you with the analysis aspect and the methods aspect to be able to make sure that you've got a study that you're comfortable with before you start administering it, to be able to help with the startup costs [of designing a study]". In a related way that seems a natural fit to consider for information professionals, researchers also asked for "help with paperwork for grants". Other support opportunities also emerged. One researcher stated "I did not learn how to do a systematic review. I didn't learn how to manage or curate a model to go through something electronically and sift through hundreds of thousands, millions, of pieces of data." but was glad for the librarians that "teach you how to curate your digital footprint to where it's getting the biggest bang for your buck."

In a frustrating answer, one researcher said he wants all "kinds of data sets developed; quality controlled and quality checked by my own research group", because he doesn't necessarily trust the metadata or the overall data sets available. This is absolutely a place where outreach from the information professionals to teach the researcher about metadata may be helpful, but the underlying, unvoiced aspect was the researcher did not prefer to trust other people's data without verifying it first, so it was less about one teachable moment than a sea-change within the culture of trusting data that are published. Happily, more researchers actually were very pleased with the data they have access to, and reported that agencies like NOAA, USGS, USDA were highly trusted and useful data providers.

The interviewees "have tons of information in spreadsheets but most producers or agricultural professionals aren't going to wade through that information." The visualization of data is a highly valued skill, the researchers wanted the data to be available, clearly and accurately, for people to be able to base decisions; "policy-makers can see the implications the research or of censuses of research that will help policy-makers." These decision makers were listed as producers, consumers, policy makers, industry representatives, and other researchers. The size of the decision to be made, and whether or not it would impact other people didn't seem to be a limiting factor, even for as something as simple as a choice of one person choosing breakfast cereal, to international NGO's taking this data to decide how to spend billions of dollars of money.

Results: Disseminating the information

While all the researchers wanted their research to be available, accessible, and published, there was a vast spectrum of willingness to interface with the publishing aspects of scholarly communication: "maybe it's a mistake on my part professionally but I don't get so excited about impacts scores and things like that", "I'm a publishing fiend", and "You want your information to be accessible but you also want it to have some kind of a standard – peer reviewed standard" were some of the opinions that came out which the researchers themselves tagged as connected to publishing. During the interviews, the word choice was "dissemination practices".

Results: Repository

Only a few researchers had used a repository, although most were aware of VTechWorks, the IR at VT. Many researchers commented on the upcoming need to have access to a repository due to funder requirements, and as an aspect of meeting the historic mandate of land grant institutions. Some researchers did not differentiate between storing and disseminating research.

Results: responses that came forward with the magic wand question

There were the expected concerns, more time, more money, more "hands on deck" to do work, in the lab, in the field, writing process.

"In some cases, money keeps us focused on the important problems. In some cases, that really limits creativity", "generate funds for long-term research projects", "With more time I – and in some ways it can be pulled in two different directions I think with the extension. But there's a lot of questions that pop up that require time into them. And that time when it's spent answering questions it's not being spent summarizing information or putting together information to be published. And so just having a little bit more time would help allow me to do both very well rather than getting – having to decide how to use time.". "Well if it was truly magic I suppose the first that jumps to mind is to have a way of inflating the amount of time in a particular day because there are times of the year when the biggest thing that – the biggest constraint that I have is the amount of time that I can put into something." "I would say, to help with the research process, to have a dedicated laboratory technician that could sit inside the lab and at the animal facility and watch over those places for me every day;"

"You know, time is a big factor. Team building. You know, team building is really important. You can have a great idea, but you've got to have a team that you can sell as being able to deliver the product. More and more, the single researcher types of projects where a researcher applies for money and gets it – it seems to me that's becoming less important. More, more, more, and more and more of the money is going to these large projects that have many members or team members that are carrying out the research. Magic wand for me to be able to form a good team around a topic or around a project or around a problem that you can sell."

"On some extent, it would be additional people because I think there's sufficient questions, but there are fewer people to help address those, especially in the kind of work that I, you know, the farm level and decision-making tolls that are targeted at, you know, the agricultural community and that interface between, you know, the production economics, the decision-making, and then the environmental side, so someone that can work or groups of people that can work in that interdisciplinary area, I would say, would be our biggest concern or my biggest concern longterm."

The writing process came through in other ways, too. "Make graduate students and post-docs better writers and make them want to write", "whole publication process, it's really a matter – I don't have enough time myself to do nearly as much primary writing as I would like to", and the counterpoint, "To write my papers for me so I wouldn't have to write. That wasn't the answer you wanted I'm sure."

There were some requests that could immediately be granted by informing the researcher about services the library already offered of which they were unaware, "assistance with the data management and analysis. That's always the hardest part. It's very painstaking, particularly when you're doing qualitative, policy relevant research".

There were some larger scale thoughts: "So, this unit, this department, just like mine was where they created their own internal data analysis course to make up for what they weren't getting in the required stats course. Get your magic wand on that, that's a hot area." "So, reflecting on that, the question for me is how would I change the conditions in which I work; and the conditions, I

think, would be very different. We would have more people in leadership positions who are engaged in the critical political questions. First of all, we would have more women and people of color in leadership positions."

"I would love for us as scientists to be able to think in the big picture, in a multidisciplinary way, so we can develop synergies and pursue those particular research things that are going to have great scientific foundation to lead to applied research in a more rapid way. So, rather than that I created a single idea and pursue it, only to find that that's actually a project where we made minor, little pieces, but we've never really been able to bring it together, we can look at our puzzles – okay. Here's our big, blank puzzle, with no picture to work on. We have a collective group that working on each region of the puzzle, and they're starting to put those things in. We have also the relationship of finding where those areas fit together. So rather than one small piece of this whole puzzle getting lots of funding, and we end up putting together a big white space because that's all the puzzle is at that area – we didn't really get any forward motion – that we have several pieces of this going in at different areas, and we're looking at this increase. Now I can see the gaps. I can see where my gap analysis is. Maybe I'll see the big picture sooner, because I'll have filled in all those questions."

And the author's personal favorite, "Have an Inga[dedicated personal librarian]."

Results: themes that emerged

Researchers use grant proposals and peer review process as a way of staying up to date, and mentioned it more in the staying current area of questions than in reference to any other part of their research ecosystem.

All the researchers mentioned the bigger picture, the research ecosystem, and or the system wide scale, with the understanding they were talking about the real world wicked challenges. "For instance, water, land, humans, economy – all of those things are combined together", "real science issues and dealing with real people who need this information real time, and all of these things are real right now. So we want information and resources in real time". "[I]ndividuals that have scientific knowledge and training to be able to say this is what we know at the current time and those are not always funded nor the individuals that work on different parts of it able to put it all together or attempt to put it together in a framework that policy-makers and decision-makers can use". "[W]icked problems; but I think wicked challenge is probably a little more politically correct. Another one, I think, in our field, which has been circulating, is that of one health, or planetary health. We're talking about the health of the soil, the health of the animals, the health of the environment, the health of human beings; that we need to be talking about health in that larger, interconnected way around sustainability".

Land grant institution and the philosophy of what a land grant is, and the responsibilities of making their research available bubbled up through the interviews. For instance, when speaking about annual reports for funders "A lot of times, though, those aren't in a public domain", and how that was a problem because the research, both data and analysis should be available to the public. "If it's publicly paid for through one of our federal agencies, that becomes valuable information, theoretically. We want to make sure people can move forward on it. But I also need to be able to compete for the next grant." Researchers were asking when funders requirements do

not allow public dissemination of research, should that funding be utilized? But “funding sources are going away” so “research gets more and more focused on areas that are fundable or on the interest of the specific company or group with a narrow set of interests.” “other, more basic work in broader areas that historically would have been funded by USDA or NSF or other areas like that, particularly the large block funding is really becoming limited as is the level of overall salary and operations support that agricultural has greatly benefited from at the land-grant system over time”. One researcher wanted her magic want to “create teams around issues and ideas and make us able to work more fluidly across our topical areas; so it would be easier to collaborate with people and create meaning, so you would be asking different questions than the ones that we’re always asking and just apply it in different ways instead of, like, creating new ideas all entirely. I would also really encourage us to work that way across the campus, so we would have philosophical conversations.”

The Report Author’s Future Plans

With these interviews, the author has proof of concerns that were thought to be problems, avenues to explore to address those concerns, bunches of “ya done good already, keep it up” comments, and concerns that were unknown previously. Haugen created a running list of “get back to this person” as she was going through the interviews, to make sure she addressed their concerns, but allowed for anonymity. Many times she was able to address some concerns and correct misconceptions after the recording was turned off. Haugen has lists of “to do” from the trends that emerged from the analysis.

- Helping students with writing was already a focus Haugen has, and she hosts, with assistance from other CALS faculty, a Scientific Writing Workshop once a year in January. Additional offerings of teaching a class within a semester course, or personalized workshops for lab groups are already on offer, and some researchers were glad to know of the options available. However, Haugen has contacted the Writing Center, and is working to increase visibility of the offerings of both the Center and the Libraries in this area of concern.
- Pre-tenured faculty jitters/fears were totally unexpected at the level that was found. “As a young faculty, I don't really have time to mess around with trying to experiment with different journals.” “Maybe when I get tenure I'll be like, "Sure. Let's try to expand." Right now, I'm like I know it will get published”. This topic is a new consideration and conversation is happening on how to best support these early-career researchers and the different needs they have/perceive they have.

Conclusions

Library and information professionals have always been closely linked with the communities they serve- and the historical closeness of CALS with the previous college librarian, Margaret Merrill, has given the current serving liaison librarians an excellent base from which to work.

Haugen, DeBose, and Pannebecker plan to continue the outreach efforts currently in place, such as teaching at Extension's Winter Conference, visiting the ARECs for "in the field" conditions and concerns to be addressed, working with the First Year Experience classes and then continuing on through all of the types of patrons we serve with a plan to eventually have in place a scaffold we can build on. Please see *Library Trends* Feb 2017 issue for more specifics[4]. In addition to the plans we have in place and have been enacted over the last three years, this report will allow us to do some course correction, and add support services to counteract the problems outlined we hadn't know about.

In any conversation with faculty where there is not a press for time, library professionals should ask the magic wand question. Even at the end of a reference interview, Haugen thinks it is a useful way of helping people "think outside the library box" of what they thought the library could/would/should do.

However, the library must not lose sight of what it should continue to do. One participant said:

> "I really appreciate your innovation. You're looking forward. You're offering to come up with additional things – the additional resources that might be able to help us as researchers. The thing that I would try to drive on though is that I would not want the university or the college – or rather the library that is to lose sight of those things that we use effectively now or that we feel are very effective. The library resources at Virginia Tech I think are wonderful and I don't have much of an opportunity to compare to other institutions. You may be on par with our peer institutions in that regard but there's an awful lot there that works. And in a period of – if a period comes up where the university has the peer resources we – services that the library provides – you know, I'm off-campus and it is so wonderful to be able to get something at our fingertips from [redacted] away without having to be down there at the campus. So just remind your administration that that is the thing that I put at the very top. The ability to access those resources and to be able to do that when I need it whether it's the middle of the night or during the workday, just having access to it and being able to get it in some way is priceless. It's priceless."

Another researcher said:

> "I think it's just continuing where, at least, Virginia Tech is moving towards; which is that librarians are there, but they're not there in a traditional sense, to show you where the book is in the library; but to actually help us do things like a systematic review. I don't even know where to begin with that. I only know on a very surface level. So providing those resources to us, like coming to things like that winter conference or winter school, or showing up to the AREC and meeting with those individual faculty members to go over how to do some of those skills I think is really key."

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[4]Haugen, I. Debose, K., &. Miller, R. (2017). Information Literacy Instruction Programs: Supporting the College of Agriculture and Life Sciences Community at Virginia Tech. *Library Trends.* Forthcoming Feb 2017

Researchers at Virginia Tech are investigating such a broad spectrum of questions that supporting the researcher, the research in progress, and the research output is a complex challenge for information professionals seeking to do so. These questions and answers have mapped out some places for consideration, and some areas where it would be best to keep the same services. Differences in conclusions at the various institutions and in the overarching report reflect the research climate in different areas. Please refer to the Ithaka S+R and other local reports for further aspects for consideration.

INFORMED CONSENT FORM

Informed Consent Form

This consent form asks you to take part in a research study. The study is being conducted by

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Title of the research study: Research Support Services Study for the Field of Agriculture

Reasons for the study: This research study seeks to examine the research practices of academics in agriculture in order to understand the resources and services these faculty members need to be successful in their teaching and research. Ithaka S+R will review interviews and assemble the findings, in combination with findings from the local institutions, into a public report. Ithaka S+R will publish the final report on the Ithaka S+R website, with all participating libraries thanked and all local researchers acknowledged as coauthors. The report will contain recommendations for the development of services based on the combined findings from all participants.

VT will also benefit from the detailed institution-specific findings that can also be further developed into future conference presentations and publications. Ithaka S+R will facilitate follow-up dialogue among interested investigators (local researchers) to consider possible cross-institutional collaborations.

What you will be asked to do: Your participation in the study involves a 60 minute audio-recorded interview about your research practices and support needs as a agriculture scholar. We also may take photographs to document your work space, however, you will not appear in the photographs. Your participation is completely voluntary. You are free to withdraw consent and discontinue participation in the interview at any time for any reason.

Benefits and Risks: There are no known risks associated with participating in this study. Subjects may experience benefits in the form of increased insight and awareness into their own research practices and needs.

How your confidentiality will be maintained: If you choose to participate, your name will not be linked to your interview responses or work space photographs at any time. We do not include your name on any of the interview data and there is no link between this consent form and your responses.

Questions? You may contact the primary researcher (Inga Haugen, contact info at the top of page) at any time if you have additional questions about the study, or, should you have any

questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the VT IRB Chair, Dr. David M. Moore at moored@vt.edu or (540) 231-4991.

I _____ understand and consent to participate in the study as described above including:

___ being interviewed and being audio-recorded during the interview
___ having my work-space documented by photograph

Signature of Research Participant:_____ Date: _____

Signature of Interviewer: _____ Date: _____

Semi-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?