What Faculty Want Librarians to Know

Christine Fair
Georgetown University

Timothy Johnson
College of Charleston

Phil Richerme
Joint Quantum Institute

Jim O'Donnell
Georgetown University

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What Faculty Want Librarians to Know

Christine Fair, Assistant Professor of Security Studies, Georgetown University

Timothy Johnson, Chair of Classics, College of Charleston

Phil Richerme, Postdoctoral Researcher, Joint Quantum Institute

Moderated by Jim O'Donnell, University Professor, Georgetown University

The following is a lightly edited transcript of a live presentation at the 2014 Charleston Conference.

Slides and videos are available at

<http://2014charlestonconference.sched.org/>

Jim O'Donnell: Good morning everybody and thank you for coming out at this hour. Regular Charleston goers will know that, for the last several years, we've done a session on "What Provosts Want Librarians to Know." And, at this point in the conversation, I would be saying something like, "You may not realize it, but provosts are the nicest people in the world and we've brought several of them here." When we went to put together this year's panel, after several years of distinguished and very nice provosts, we discovered we kind of run out of nice provosts. So we decided instead that we would go with, "What Faculty Want Librarians to Know," because faculty, you may not realize this, are indeed the nicest people in the world and we have several of those folks. What we want to do today is have three colleagues do a kind of autoethnography of scholarship in libraries. I've asked these folks to come together, all of whom are scholars closer to the beginning of their career than to the end. The one who chuckled is my former student and, for that reason, he is young and he will always be young, and he should enjoy the luxury of that. But to describe a little bit of what they are and what they do and how they actually use libraries, what their access to library-like information resource is and, where appropriate to talk about, what they're not getting that they'd like to get, and to describe a little bit some of the ways they get things that don't come about simply by going down to their local library. We have one from each of the three traditional domains of scholarship, though each is untraditional in their own way. Phil Richerme, from the University of Maryland, is a Physicist; Tim Johnson, from here, the College of

Charleston, is a classicist; and Chris Fair, my colleague at Georgetown, is a "Social Scientist." I think that's the way we, uh, we put that. She can explain a bit more why. We'll start with Phil. Phil is a high energy physicist at the Quantum Institute at the University of Maryland, and works on simulation of quantum systems at a level that my high school physics would not be able, I'm sorry, to keep up with. I've asked them to hold it to 15 to 20 minutes maximum and I've promised to put snotty notes next to them if they run long so that we can have some time for you to continue the ethnography by interrogation. So let's start with Phil and the world of high energy physics. Phil? Why don't you come on up to the podium.

Phil Richerme: All right. Well, thank you so much, Jim. It's a real pleasure to be invited here and to speak in such a wonderful city. It's such a pleasant time of year. And so, I'll spend a few minutes talking about, "What Physicists Want Librarians to Know." The talk will be in two parts. I'll start with a little bit about who I am and what I do, and then I'll move on to the meat of the talk, as to how I interact with libraries and how I actually go about my daily research, finding information and communicating the information that I find. So, let's start right off with my younger years. So, in graduate school, this was home for me. This is an accelerator hall at CERN over in Geneva, Switzerland. At this building, we were taking in anti-matter particles, which are real and exist. We were taking them in from CERN, we were slowing them down and we were building atoms made entirely out of anti-matter. The goal there was that if you can build an atom made out of anti-matter and study its properties, then you can compare those properties to the properties of ordinary matter and, due to some very deep symmetries in nature and some very deep physical ideas, everything that you measure in anti-matter should be the same as in matter. This

would give us a really sensitive test of whether or not these deep theories in physics are correct or not. Now, unlike some of the big collaborations at CERN, which had many thousands of people and find things like the Higgs boson, our experiment is somewhat more human sized and human manageable. So, in, in general, it took about 15 to 20 of us to design and build and operate an apparatus that looked something like this. And, of course, when we found results, we like to communicate those with the community and so we would generally publish. And typically we would publish in journals that are known as being in the top in the physics field, so this would be *Physical Review Letters*. Over the course of this experiment, there would be something like 50 or so articles to come out, two review articles. No books, though, really all journal publications.

Now recently, after graduate school, I've gone onto an atomic physics lab, and in an atomic physics lab, you typically are doing experiments

that fit within a room rather than a warehouse. Everything is done on a table-top experiment. The center of a table, you have, generally, some sort of a chamber into which you load a micro fabricated trap. This is very micro engineered and micro machined, so that you can apply very specific voltages to trap individual atoms within. So, here is a picture of 16 individual atoms (Figure 1). We've adjusted voltages in that trap so that all of them lie just along a row and then you can see each individual atom there glowing like stars. Each individual atom there, we can actually program it with lasers and very, very good control to perform computations on very hard problems and, just with that chain of ions right there, we can do a computation that takes a super computer many, many days to figure out. It's a really brand new way of looking at quantum computation, to really solve some of the world's hardest problems. This is a current area of research that I'm interested in.

Bohr and Peace

Figure 1.

As before, we like to publish when we find something novel or, or new and, as before, we'll also publish in *Physical Review Letters* but now some of the journals that we'll publish in have somewhat of a broader reach to not just physicists but also the larger scientific communities, so journals like *Nature* and *Science* as well. Still no books.

That's a little bit about where I've been, but I want to talk now about what it is that I do in a kind of daily basis and how I interact with libraries in the course of a current day. So, in some hypothetical day, we'll start with the physicist's version of reading the paper and having your morning coffee and bagel. The first thing that I do in the morning is to ask, "What's new in the world?" And to do this, my first stop is a website called *The ArXiv*. This is an e-print server. And I need to say straight off that if you or your libraries in any way have developed or supported *The ArXiv* over the years, really from every physicist out there, "Thank you."

Because this is really been a transformative thing in the physics community. As you can see that there, there are really, just tons of different subfields of physics that are represented on *The ArXiv*. The idea is that, whenever there's some new result out there from some group, they will write a manuscript and, at the same time that they submit it to a journal, they'll also upload it to *The ArXiv* and, depending on the size of the field, there could be anywhere from 10 to a 100 new papers per day in each of the subfields. And so that's quite a lot to browse through. Being a quantum physicist myself, I might click on the quantum physics subsection of *The ArXiv* and that'll bring you to a page that looks something like this (Figure 2). You can very easily scroll through all of the day's new news. You can look at all of the titles of the new papers that have come out, see what groups they've been coming from, read all of the abstracts and, if there's a particular paper that catches your interest, you can zero in even further.

The Arxiv-ology of Knowledge

[1] [arXiv:1410.4195 \[pdf\]](#)

High visibility two photon interference of frequency time entangled photons generated in a quasi phase matched AlGaAs waveguide

Peyman Sarrafi, Eric Y. Zhu, Barry M. Holmes, David C. Hutchings, Stewart Aitchison, Li Qian

Journal-ref: Optics Letters, Vol. 39, No. 17, September 1, 2014
Subjects: Quantum Physics (quant-ph), Optics (physics.optics)

We demonstrate experimentally the frequency time entanglement of photon pairs produced in a CW pumped quasi phased matched AlGaAs superlattice waveguide. A visibility of $96.0 \pm 0.7\%$ without background subtraction by 52 standard deviations.

[2] [arXiv:1410.4257 \[pdf, other\]](#)

Magneto-optical properties of paramagnetic superrotors

A. A. Milner, A. Korobenko, J. Floß, I. Sh. Averbukh, V. Milner

Subjects: Quantum Physics (quant-ph), Atomic Physics (physics.atom-ph)

We study the dynamics of paramagnetic molecular superrotors in an external magnetic field. Optical centrifuge is used to create dense ensembles of oxygen molecules in ultra-high rotational states. In the presence of a birefringent, which indicates preferential alignment of molecular axes along the field direction. The experimental observations are supported by numerical calculations and explained by means of an intuitive qualitative molecular axes is mediated by the spin-rotation coupling. We show that the induced magneto-rotational birefringence is more robust with respect to collisions than the rotational coherence, and that this robustness increases

[3] [arXiv:1410.4285 \[pdf, ps, other\]](#)

Negativity of quantumness and non-Markovianity in a qubit coupled to a thermal Ising spin bath system

Zheng-Da Hu, Yixin Zhang, Ye-Qi Zhang

Comments: 7 pages, 5 figures

Journal-ref: Commun. Theor. Phys. 62 (2014) 634

Subjects: Quantum Physics (quant-ph)

We propose a scheme to characterize the non-Markovian dynamics and quantify the non-Markovianity via the non-classically measured by the negativity of quantumness. By considering a qubit in contact with a critical negativity of quantumness indicate the non-Markovian dynamics. Furthermore, a normalized measure of non-Markovianity based on the negativity of quantumness is introduced and the influences of bath criticality, bath shown that, at the critical point, the decay of non-Markovianity versus the size of spin bath is fastest and the non-Markovianity is exactly zero only in the thermodynamic limit. Besides, non-trivial behaviours of negativity keeping constant are found for different relations between parameters of the initial state. Finally, how the non-classicality of the system is affected by a series of bang-bang pulses is also examined.

[4] [arXiv:1410.4297 \[pdf, ps, other\]](#)

Quantum Bit Commitment Combining with BB84 Protocol

Linxi Zhang, Changhua Zhu, Nan Zhao, Changxing Pei

Comments: 4 pages, 2 figures

Subjects: Quantum Physics (quant-ph)

We proposed a new quantum bit commitment scheme in which secret key need not to be provided by other quantum key distribution system. We can get the bit commitment with probability p by adding a waiting time in outcomes can be encrypted by one-time pad with the key generated by BB84 protocol. We can also obtain the redundant secret keys to encrypt other information in this quantum key distribution system.

[5] [arXiv:1410.4318 \[pdf, other\]](#)

Experimental implementation of optimal linear-optical controlled-unitary gates

Karel Lemr, Karol Bartkiewicz, Antonín Černoch, Milošlav Dušek, Jan Soubusta

Comments: 7 pages, 5 figures

Subjects: Quantum Physics (quant-ph)

We show that it is possible to reduce the number of two-qubit gates needed for the construction of an arbitrary controlled-unitary transformation by up to two times using a tunable controlled-phase gate. On the platform probabilistically, our method significantly reduces the amount of components and increases success probability of a two-qubit gate. The experimental implementation of our technique presented in this paper for a controlled-phase gate is needed instead of two standard controlled-NOT gates. Thus, not only do we increase success probability by about one order of magnitude (with the same resources), but also avoid the need for

Figure 2.

It'll take you to a page where you can, again, see the title in the abstract, click on some of the authors' names to see what else has been published by them in the past and also, on the right, you can see that there's a link to download a PDF so that you can read it immediately, you can save it for later, take it on the plane, do whatever you need to do with that PDF. If it's been some later time and this preprint version of the paper comes out in some journal, then you can see at the bottom there's a journal reference. You can click on the journal reference and that'll take you immediately to the so-called version of record. I should also say at this point that *The ArXiv* allows you to update based on referee comments or any other changes that you've made in the paper, and a lot of the journals that are popular to publish in in physics will allow you to upload the final version of record to *The ArXiv*, so long as it doesn't have the publisher's letterhead on the top.

And so really, this is a great source for getting kind of the most up-to-date information that's out there in the physics community. And I mentioned before that this is a really transformative new technology for physics and I'd say that there's really two reasons for this. The first reason has to do with accessibility. *The ArXiv*, at least from the point of view of physicists, it has been free and it has always been free and it will continue to be free for us, so that people from pretty much any country can upload their information to *The ArXiv* and read what others around the world have done. Now, certainly the publishing community has taken note of this. There are a couple of new open access journals in the past few years to spring up in physics. These are really going in the right direction but even still to date, these journals cost about \$2,000 per article for the author to publish in, and there's certainly some initiatives and consortia to try and reduce that costs for publishing groups but these consortia are not really universal quite yet and there's still some room to go. I would say that *The ArXiv* at least has been, for 15 years or so, making it free to physicists and will continue to be free.

All right, so, the other big reason that *The ArXiv* has been so transformative is it's really the large

amount of time that's saved and the up-to-date information that you get right away by reading it. Just for sake of example, this is a paper that we published in *Physical Review Letters*. You can see right in the byline here that this paper was received in March. It had to go through peer review and publishing and then it came out in September. So, that's five months from submission to it actually appearing in a journal. And it's not just *Physical Review Letters*. You can look at other journals like *Nature*, where a paper is submitted in January and it doesn't appear until July, five-and-a-half months later. Now, on *The ArXiv*, of course, this is submitted at the same time that they go to the journals and so that information is out there now half a year before it comes out in print. And so if I were to kind of look at the hierarchy of how information is communicated in physics, I would say if you want the most leading edge, up-to-date information that's out there, you have to go to conferences. You have to talk to people and often you'll actually see plots or, new ideas from those conferences that haven't made it into publication and, in fact, it's somewhat of a bragging right if you can show a plot in your talk that is only hours old data rather than something that, you know, is weeks old or months old. That's where you really get to that bleeding edge, but when the group's actually make a sellable story, when they have all their error analysis really down and well characterized, then you publish something on *The ArXiv*. And that's immediately how the wider community gets access to what you've done, and then maybe about half a year later or so, that paper will eventually land in some journal; but, by that point, people aren't really reading the journals to figure out what's new. Maybe every so often to figure out what has fallen through the cracks, what you've missed on *The ArXiv*, but, ironically, *The ArXiv* has really now become the medium of communication and the journals have now become the archive.

Okay. So that's, that's how I start my day, is seeing what's new in the world. But now we actually have to go to work and start doing experiments. If we already have an experiment planned, then that's great. We go ahead, we run our apparatus, we take data and life is great. But half of

experimental physics is trying to figure out what experiments are we really looking to perform. And for that, just like other fields, we need to start doing some sort of a literature search. And to do a literature search, we start in maybe a number of the interesting places. I've already mentioned *The ArXiv*. Google Scholar is probably the most widely used broad-based search tool that I know about and, and my colleagues also use. Some also use Web of Science. These are really powerful tools for us to use. We can search by author or date or journal or paper title or anything. It'll give us a large list with possible other related papers, and these are all very useful tools. The American Physical Society also has a very broad-based search tool. One of the things that I've notably left out here is the university library site, which I'd say, in some sense, I would say it suffers because it's

too comprehensive, and the number of different resources that it pulls up, many, many books included, are usually not the place that we'll first be looking for that sort of information we're interested in. And so if we find a paper of interest, we can read through it, and papers have references and we can follow reference lists all the way through until we're fully exhausted. I pull up this particular reference list (Figure 3) because, as you look through it, you'll notice that most of the references that are in this paper that I pulled out are to journals. But every so often in a reference list, you'll come across something like this entry here, number 24. And this, I believe, is called a book. I had to dig through a number of different papers to find even this one example in a reference list of this book.

Things Fall Apart

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← “Book”

Figure 3.

Now, unlike a lot of the fields in the humanities, or others, typically when a book is cited in physics, it's because there's a particular equation of interest or maybe a very well worded paragraph or something, but I would say that books, in general, aren't really the medium for breaking new ground in physics. And so, as such, books are really kind of a, an extended review paper. They're a collection of really good references with maybe some more pedagogical explanations of how things work that aren't really condensed in journals, but in general, they're not breaking new ground, which means that the information that we're pulling out of this book, generally, it can be found in about a minute or so and then we're done with it and we're ready to continue on with our literature search. As a result, if we want to look at what's going on in this book and whether or not it'll be of interest of us, probably the first thing that we'll do, rather than go to the library, is to go to Google Books, okay? You have all of these

online scanned versions of books and, if you get lucky, then the pages that you want, explaining the equation that you're interested in, won't be blocked by Google Books and you can find it. Sometimes, you're not that lucky and so, of course, then the natural choice is to go to Amazon, look, go to the "Look Inside" feature and try and see what you're interested in. Sometimes that doesn't work either, in which case, probably the next step is to continue searching on the Internet for the particular equation of interest.

Notice here, we have not yet gone to the library to look for this book. And, in fact, it's not just me. I took a poll of the lab in this extraordinarily scientific study, asked them, "Do you know how to get to the physics library?" And these are the results (Figure 4). Okay. That's right. You'll notice there's no error bars, but okay. This is what I found as an informal poll at the lab.

Figure 4.

In my final few minutes, I just want to talk a little bit about analysis. After we've done our literature search, after we've taken our data, we want to analyze it. We want to store that data long term and I often get the question from some librarians as to whether or not archival of this data is something that's interesting to us, something that's wanted by physicists. I'd say the short answer to that is no. Here is a screenshot of all of the data in our folder from the year 2013 (Figure 5). You'll see that all of the data takes up about 100 gigabytes. So, unlike the LHC, and I think they have in-house librarians to deal with archival and all that, a typical experimental group will take about a hundred gigabytes of data per year and if you look at all of the data that we take in our experiment, all the way back to 2008, including every image, every paper that we've written, every everything, it takes about one terabyte on a two terabyte hard drive, something that you can purchase for a hundred to two hundred dollars.

Clearly, this sort of thing is backed up in many places. We have our own on-site backups, we contract with physics IT departments to back it up for us as well. If libraries want to start filling in that role, that's probably fine with us, but we don't necessarily have a need for it right now. I'd also point out that just raw data without any context is not very useful to a broader community. It's a very specialized thing of how to take data and the data that we get is really strings of ones and zeros that we're measuring and, without knowing exactly what experiments you're doing, exactly what apparatus it's coming from, all of that kind of documentation that needs to go hand-in-hand with the data, I think that would really put an undue burden on the physicists themselves to try and make this available to a broader community so that it could be achieved in a library. I think that the burden of that is pretty high in general.

Lord of the Files

Figure 5.

Just to wrap up with a couple of my key points: if you haven't been able to tell in general, I love books, personally, okay. I think books are great, but the honest truth is that, for physics research, in our day-to-day, they're really no longer a critical resource for how we actually do our work. There would be some better utilization, I'd say, of books if text were available online, but maybe that's not also the best way for librarians and libraries themselves to be using their resources. I would say, by far, journals are the dominant method for communication, both for learning about what's going on in the world in physics and also for communicating with the world what you have done in physics. And I would say to librarians, particularly for things like *The ArXiv*, we need continued access and we need continued support for this tools because these are really how the medium of communication has really turned in the last ten years, and the physics world would be completely different if these tools were to not persist.

And finally I just touched on this point that data archiving, it's not necessarily the realm of libraries for physical data. We only need very modest storage requirements. We can take care of that in-house, or with other IT departments at universities, and the data itself will be useless without context. With that, I'd like to wrap up. So, thank you for your attention.

Jim O'Donnell: Thank you, Phil. Tim Johnson will speak next from the College of Charleston. He's been here in his third year now as chair of the largest department of classics in South Carolina. Before that, Tim was indeed my student a long time ago. He holds his PhD from the University of Illinois, and made his bones in the scholarly world at Baylor and at the University of Florida. He's a recognized and widely published scholar in the field of Latin lyric poetry. He also has the experience of having been involved at the University of Florida in creating and running the first and still the only online PhD program in classics, which had a particular niche. So, I've asked him. You may be able to predict or you think you can predict some of what his needs and experiences would be, but that online experience suggests that he's had to push some envelopes as well. So, please welcome Tim.

Tim Johnson: I must admit that I still cringe to call my professor Jim, because 30 years ago, when he called me on the phone and said, "I don't see any Latin on your transcripts. If you can tell us just a little bit of Latin, I'll be willing to take you into our new post-doc program." And I thought that none qualified for little. So, I answered that question, "Yes." And without that fortune, I would not have the career that I have today. That's one facet of my experience, is starting from behind and learning how to run fast as I could.

The other part of my experience is that I've been fortunate in my career that I've been able to move and, as you can tell by the gray now in my beard, I've been able to move quite a bit. From, in fact, Luther College, a small private institution, to Truman State, a small public institution, to Baylor University, a large private institution, to the University of Florida, a large public institution, to now the College of Charleston, a small public institution. After navigating these moves, I'm now appreciative of the different perspectives that they have offered me. So, I title this reflection, "Books, Databases, and Bodies."

Last week when I was driving home on Savannah Highway in Charleston, once again sitting in traffic, I saw a bumper sticker and it said simply, "I love libraries." Short, pointed, like most bumper stickers, but, unlike most bumper stickers, actually true. I do love libraries, and now that we live and work in a digital world, we can put libraries in places where they never before existed. That's fantastic and exciting. But in 1966, when I first learned to use libraries, access was nothing about logging in, clicking and downloading. At the old Carnegie Library in Paris, Illinois, two blocks down from the town square, a librarian, priceless, took the time to teach this six-year-old to sort through the card catalog and browse the stacks so that I could discover and expand my own interests. Another voracious reader was born that day and the entire act was physical. Walking to the library, hearing its echo, smelling its polish, fingering indexed cards, pulling books off shelves. I work best when my entire person is active. Research, in its fullest experience, is, for me, a collaborative act among my senses and, as such, encompasses

my whole being, I hope, mind and body, sight, sound, smell, taste, and touch.

But I hope my learning is not egocentric, my mind and my body. If I remain sole sovereign of my work, then I am most isolated, trapped within my own senses and my own experience, and therefore bound to my own limitations, which I admit, are severe. This, in fact, is what I want most from libraries, to provide me with the others I need and the others I desire who will save me from the disaster of a solitary self. Others research not only touches me but I need to touch their work, to lay my hands on it and feel it, like I would embrace a body. So it is that research begs to be handled in some form. It is tactile. And I must admit that I want it to remain touchy-feely, hands-on. Horace, the first century BC Roman lyricist, when defending his own work against critics, assumes the voice of his poems and books and says, as if he were his own poetry, this, "I, presenting what is new, love to be read and handled by the eyes and hands of those who know what they are doing." And maybe this has something to say about patron driven acquisition. It's fine to be handled, but I prefer it to be handled by those who know what they are doing. I've been touching books and articles all my life and I do not want to stop. I'm far too addicted.

Now, I must say I'm glad that research feels different in my hand now than it used to and is much easier to share in all forms, Kindles, iPads, e-books, JSTOR, Google Books and on and on it goes. And less often now, as given my schedule, just like Phil, I have little chance to walk to the library campus, which is only five minutes from my office. The stacks I browse most often, and I believe most of my students, as the data would suggest, are digital, access driven by search engines. This high speed power is, I would say, part of our challenge. As sophisticated as my students are in handling technological gadgetry, they are surprisingly unsophisticated in constructing meaningful and effective search rubrics. Too often, we do not have the personnel or do not take the time, in this digital age, to do the equivalent of what that mid-western Parisian librarian did for me, teaching learners to search the digital stacks. Consequently, for these

simplistic searchers, conducting a digital browse, arrangement matters more than it ever did. It is not just about finding a particular book or article. It is about what they can find around that particular item on the digital page without their searches instantly becoming too diffuse. Too often still, students come to my office after running a keyword search, and I'm sure you've been there too, with a list of 2,500 entries printed out on 25 pages. It is impossible for them to tell which libraries have which book or if it's just available on Amazon. As a default then, they tend to use only e-books or JSTOR sources and let all others go. So, books are losing out progressively to articles. We do need better and coordinated strategies for once again making our students and ourselves constantly more search literate.

Returning to my first tenure-track position, which I refer to as NPCC, Nearly Post Card Catalog, at Baylor at 1994 to 1999, it was the world now of the private university. Baylor became a first-rate undergraduate classics program, but their library resources in the area, like many, were and are limited. While there then, my research was supported mostly through a visiting courtesy appointment at the University of Texas, Austin, still built on the model of departmental libraries supported by the larger main library, but public, not private, and, therefore, not in the consortium with Baylor. When links between institutions are nonexistent or broken, public versus private, in state versus out of state, fee paying versus non-fee paying client, then researchers are focused or forced to find their own connections. Interlibrary loan, no matter how large the consortium, I have found not to be a workable solution. True enough, my library here, within weeks, can place in my hands almost any needed resource but then, within only weeks, I have to ship it back. And so when I'm working on a long term project, I start to have visions of standing, like we used to, at the Xerox machine. And what saves me mostly are kind librarians at the University of North Carolina Chapel Hill and still the University of Illinois, who are willing to take time and bend some of the rules in order to send me a PDF by email. My experience teaches me that the push that we are undertaking for access, with all of its budgetary implications,

security challenges and concern for quality control, is a fight worth picking and winning.

My years at the University of Florida in 1999 to 2011 taught me just how acute the problem of access is. I was privileged then to be a part of a team that created an online PhD program in Roman studies, 2005. We underestimated the demand for this. When we launched this, we anticipated, at most, 25 enrolled and that was immediately at 100. Since then, the program has been tailored back, has learned better parameters and is, I think, of a better quality, but the basic structure of that program has not changed. Students, during their academic year, take two courses online with real-time interaction with the professor and their peers. Then, during the summer, students come to the university and take intensive summer institutes. This structure is very intentional. It creates the face-to-face time needed for directing advanced research and allows the remote students to comply with the same minimum in-resident requirements that every traditional student at the university has to meet. This satisfied the university, which was still, at that time, nervous about distance education, nervous that the quality of the program would meet their standards and that the integrity of their brand would be maintained. But this, however, was not the problem that confronted the students on a practical level. They would be located off campus for most of the year and neither their high school libraries nor their public libraries were even close to providing the resources they needed for their research. If they just happened to be located near a university library, they more often than not could not gain access because they were not enrolled as students. We basically were entirely and dependent on online sources, which is when the real frustration began. Since these students were labeled remote and were technically classified as continuing education, their own university was reluctant to grant them full access for security reasons and the cost of server space. Basically, the students were shut down because of institutional technology. Now, before I turn institutional technology into the outlaws, which is always a favorite sport, the problem was essentially one of coordination and was essentially and eventually

resolved. I'm afraid, however, that this problem still remains, that there are no or few too links between local public libraries, the secondary school library system, and the private and public universities. We and our students too often become stuck when trying to navigate such territorial boundaries when we are utilizing instruments and tools that recognize no such distinct territories. The artificial boundaries that we keep set up between types and stages of students and learning and research, we must question, challenge and continue to breach. We could say that, in spite of the rapid and constant technology driven change in which we now work and play, the end game of our field remains constant. From the time of Horus in 10 BC, from the time he hoped that the books he published would be available for all the hands and eyes who would know what to do with them, we want to put books, resources in contact with human bodies. In that hope, Ovid in 10 AD, an exile from Rome, himself now a remote scholar, used the technology available to him and mailed his book off to Rome, telling it, "My little book, you will go to the city without me. It pains me that I, your author, am not able to go but, my book, greet with my words my favorite places because, through your footprint especially, I am able to touch them."

Like Horus and Ovid and I suppose all other learners, I do have some wishes for bringing my body of work in contact with others and I'll keep these short and end with these because we are busy and my attention span is short. So, here are three of the proverbial wishes that I would have. One, I want versatile space in my libraries. My office is crowded with people and stuffed with administrative paper work and, for my writing, I need space, sometimes to be able to collaborate with others, but oftentimes to be alone and uninterrupted. I find it very hard to find any space to be alone where the conversations of others do not suffocate my creative self. While I was at Florida, they renovated the library and they replaced all cubicles with the equivalent of an open concept house plan and larger rooms for groups.

Two, I want more database projects specifically designed for my research interest. Now, I understand databases can cause problems. They do for my students. I can instantly sit them in front of a computer with, with a TLG and PHIM and give them immediately a searchable database of most all of Latin and Greek literature. The problem with that database, of course, is it assumes too stable a field in the amount of additions at or in, that it takes into account and therefore, the student's perspective is limited, even though they think, "This is so great. It's covering everything." Right? There's a problem with databases but still, I want more. As a model, we can consult the Homer Multitext project, which is an open source data collection giving, if you will, access to the textual tradition of the Iliad and Odyssey within its historical context or the Palace of Nestor project, which is here at the College of Charleston, which is developing 3D images of these tablets which were previously accessible only to a few and then only in Greece.

My third wish, if wishes one and two are going to take a while, and I imagine that they will, for right now, I would simply like more money. Just send cash, because nothing makes collaborative partners become defensive and fight quicker than a poor funding supply. We need more efficiency in the grant cycle and better strategies for convincing funding sources that libraries are not just a heartbeat of our colleges, universities, businesses, research, but the very life source of our culture. And so, at the end, I'm looking back at that bumper sticker, "I love libraries." And I appreciate all its professionals, their dedication and hard work, which do make my work easier and better. Thank you.

Jim O'Donnell: Third and last speaker is Professor Christine Fair from the School of Foreign Service of Georgetown University. I said she's a social scientist in quotation marks because she started life with a PhD in South Asian studies at the University of Chicago, which is probably the best place in the world to do that, but she's had an interesting employment career, working as an analyst for the RAND Corporation for the Institute, US Institute of Peace and as a political officer with the United Nation Assistance Project in Kabul. She

has picked up some frequent flyer miles. Her most recent book, highly controversial in some parts of the world, if not Charleston, South Carolina, is called, *Fighting to the End: The Pakistan Army's Way of War*, for which, among other things, she has to collect information from official Pakistan military, journals not held, I think, in all of your libraries. So, Chris represents the sometime scholar, the sometime political officer, the full-time scholar and social scientist with a significant impact on policy debates and a significant need for good current information of many kinds. Chris.

Christine Fair: Thank you. So, he spared me the indignity of describing myself, but let me say that I actually do need this thing called a physical book. I get a lot of information from journals but, actually, what I often need are these things that are actually published and bound and typically housed in libraries. Unfortunately, they're often housed in libraries that I do not have immediate access to. So, let me explain how I had previously used libraries and how spoiled I became and now how I have to sort of MacGyver my research based out of Georgetown. I have done everything at the University of Chicago. I started out as a scientist, where I lived in the Crerar Library. If there's any Crerar librarians out there from the USC, I love you. Regenstein librarians, anyone in the house from the Regenstein? Anyone? Oh, my heart is breaking. Yay, Regenstein. Yay! I bet your aunt hooked up at the Regenstein, because we USC people love the stack so much that that's where we dated, because we were so busy studying we didn't have time to leave the library to have a social life. So I'm, I love libraries. I love librarians. I love reference librarians. I have been spoiled. When I am sitting there at the coffee shop doing work online, using whatever access materials I have online that I have personally scanned from the Regenstein, I think back to the time when I would actually wander the stacks because, even in the process of looking for a book that I actually wanted, I would find books that were actually more interesting.

Obviously, as someone who works in South Asia, I have been an enormous beneficiary of the PL 480 program. So again, all of you working the entire supply chain from picking books out in Delhi, out

in Islamabad, out in Dhaka, Colombo, let me also thank you because my research would not be possible without the PL 480 program. Let me also say very briefly that, even though I primarily work on South Asia materials, many of the countries that I work in Pakistan, well I can't work there now because I'm blacklisted, but when I did, they don't understand libraries. The collections are disastrously organized, they're poorly kept. Ironically, some of the best resources for doing this kind of work is actually here in the United States, at places like the University of Chicago, UC Berkley. In other words, in any school where you have a PL 480 program. This is where these kinds of resources are privileged and they're valued, not only by the people who lovingly cultivate them, i.e., you, but also the users of them, i.e., me.

Also, when I was at the RAND Corporation, I want to say I really, I worked with a lot of economists, so I have an acute appreciation of the value of librarian's times. One thing that really frustrates me when I go to academic environments is that academics have no sense of the value of their time. I can't tell you how many meetings I've been in and people sort of take the opportunity to, I don't know, go on for 40 minutes for no apparent reason. I'm just thinking, "My consulting rate ranges from \$350 an hour to \$1,250 and I just add up all the money that we've just wasted for no good purpose and it drives me nuts." RAND had a very good way, of course, when I was at RAND, sometimes it bothered me, but RAND had a very good way of monetizing the value of librarians and their contributions to the projects because we had to basically pay for their service, and we would do this, especially at RAND, because, for better or for worse, we had to become masters of multiple literature. When I did a lot of work on military manpower, i.e., how do we recruit, train, retain, a military, which by the way completely transfers to my work on Islamist militants because they're also manning a force, I would have to know the advertisement literature, so, in other words, how much bang for buck do you get out of certain advertisements, how do you instrument bang for bucks. So, I know the advertisement literature. I had to know the labor economics literature and I also had to know the very specialized military manpower literature. And obviously, there's no

way someone like me could master all of those literature. So, for me, the, the RAND librarians were my collaborators and we paid for them on our projects. Acquisitions would be, if there was a product that they couldn't get through interlibrary loan, for example, there'd be a decision. If this was a general use product, RAND's library funds would pay for it which was, of course, subsidized in part by our overhead, which is usurious, I'll be the first to acknowledge, or it would be paid for by the project funds. But, essentially, projects had to endogenize the value that librarians created. And, as a consequence of that, we actually valued them. So, what I find is, as I've transitioned to the university, there's no way of endogenizing librarian's value and this, this affects everyone. So, when my students, and I'm going to conclude with this at the end of my remarks, when my students approach librarians, there's no way of valuing that transaction.

If the librarian wants to treat my student with disregard, which, believe it or not, actually does happen, and it's very frustrating to me because they pay the librarian's bills and they pay my bills. My students are the customer. So when my students, the customers, don't get value, it pisses me off, to put it very bluntly, and so I think this is in part because librarians think they have different missions. But from my point of view, the big mission is servicing the customer who paid, who pays the bills. This is perhaps an interesting discussion best had over mimosas, since we're still in the morning. But my experience with libraries, I would say, I have been generally very, very spoiled with the one exception of when I was at USIP, but I happened to catch the tail end of the debate that was going on about nonresearch libraries.

Let me tell you how someone, a data MacGyverer, the USIP library sucked so much and that's a technical term. Suck is an acronym. It's early, I forgot what it stands for. It sucked so much that I would stroll up to my Alexandrian Public Library to use the resources there. Why? Because they basically had the things that I needed. They actually had databases that allowed me to do a literature search using whatever tools that the library had and they also had interlibrary loans, something that my employer didn't have. I

remember saying to my boss, "Sorry, I'm not coming in today. I'm going to the Alexander Public Library, because your library sucks." I think these local resources are really, really important. In fact, I've had students who have worked with me over the summer who didn't have an institutional home. They couldn't use the Georgetown library, so I sent them also to the Alexander Public Library. I'm a big fan of these public resources and I, for one, have benefited from them. I had this great experience and then I came to Georgetown and I love Georgetown. The library experience has not been on the top of my, "I love this stuff about Georgetown." And the reasons for it, I think, I'm not exactly sure what the reason is because I've been to a lot of institutions. I think part of it is there's a very big mismatch. And that is what I do, South Asia, is not something that Georgetown has historically specialized in and therefore, as a consequence, its collections are just completely dissonant with the work that I need, but, as I said, you know, I'm aware of economics.

Libraries are, in fact, I would argue, the most expensive things in the world. I mean, think about some of the most important libraries in major cities. They are sitting on huge chunks of real estate. So having this thing called a book on a shelf, if you were just to think about the money per book that you spend to essentially rent the home for that book, these are incredibly expensive. So, I would never suggest that a library should have special collections that reflect the need of its scholars. I think that's incredibly economically inefficient and it makes no sense. I'm not expecting that, but echoing the other comments on this panel, what I do expect is that my university has better relations with those universities that do have the collections that I need, so that when I do an interlibrary loan request, for example, for a very specialized book, I actually have access to it. But let me also make a comment about interlibrary loan. A couple of things that Georgetown does really, really well. I'm very thankful for all of its electronic services, the various databases that allow me to do literature search, document delivery is generally very good for journals, have a pretty good success rate with interlibrary loan. Many of the schools on the east coast do have a PL 480 program. So

generally their hit rate is about 80%, but here's the reality. I'm not the only one that said that this morning. "I'm going to go to Amazon." Right? And no one wants the books I want. No one. So, I can usually buy them for \$3.99 with shipping. So, by the time I hop in my car and I commute through the jackass parade to get to Georgetown and then find parking, I have just taken basically six months off of my life that I can't get back. So, what do I do? I just hit the buy on Amazon and then, of course, that \$3.99 is covered by my research fund. It turns out that I am actually endogenizing my own library. I've had to completely redo my upstairs office with floor-to-ceiling shelves. I've had to spend \$15,000 reclaiming what used to be this wet, disgusting, vermin-infested excuse for a basement. So, I have essentially built my own library. And actually, you know, is that efficient? I'm not sure, but it's what I have had to do, and it's actually the only, I don't have any jewelry, I drive a crappy car, but let me tell you, my South Asia collection, don't come near my books.

But going back to the book that I mentioned, so this, if I were the University of Chicago, this would've been an easy project to execute, because it has all of those journals that I needed. And you obviously, when you're doing a project like this, you're actually trying to collect a universe of every single article that's appeared on a certain topic in every single, traceable Pakistani military publication. So, the first thing you have to do is build, basically build an inventory of every single issue of the key journals that you're looking at, right? You're basically creating your universe and then you're going and you're constructing your sample based upon the things that are available. I have access to University of Chicago because I'm an alum. What I don't have access to, unfortunately, is their consortium of research libraries, which is just like two blocks south of the University of Chicago, because I don't have privileges. I have to buy privileges to get there. So, at one point, this is how ridiculous it was. That collection, four blocks away from the midway, and I was already based in Chicago for several days working in the B level, having lots of memories about when I was younger, when the B level meant different things other than looking at journals, um, I realized that there were something

like 30 volumes that were right across the street, but there was no way I could get them. So, I had to go back to Washington, DC, and I had to go to UC Berkley because I couldn't use that collection. And I couldn't believe it. I got to go to freaking UC Berkley and I hate Berkley. All those tweekers, just homeless tweekers. That's just hell. It's like a gauntlet of homeless tweekers to get to the library. But that's what I ended up doing. And, of course, because UC Berkley is a public school, they also allow me to have access to the overflow, which is also where many of these journals were stored. And then finally, anyone from the NYU Public Library? Well, I love you if you're out there because, believe it or not, the most difficult to acquire journal issues that I needed were actually housed at the NYU Public Library, which was, again, pretty easy access. But all of this really had to do, I mean all, just required just a bunch of MacGyvering.

It occurred to me how really lucky I am that I am at Georgetown and the School of Foreign Service has been so supportive and they provided me all sorts of funds to basically go out throughout the country and peruse these journals. And the whole question is, how do you actually, if I had to photocopy all this stuff, there would just be, the entire Amazon forest would be depleted. What I ended up doing, and again, this would've been very different if I had done this project 15 years ago, is I have this very small scanner. It's about the size of my laptop and it just plugs into my laptop. So I scanned thousands of pages in libraries that have internet access. I was just uploading it to the cloud so I had it stored in redundant places, both locally on my laptop as well as in the cloud. And then this, of course, was very easy, in terms of organizing it, but I think about how expensive it is to house these journals. I couldn't help but think, "Boy, I just wish that the money were available to make this stuff digital." Because a person who's not at Georgetown, who's not at a university that has such resources, there's no way they would be able to do the kind of research that I did. Clearly if these journals were digitized, it would make this kind of information accessible to everyone. There was one, boy, there was a moment where I came home and I said to my husband, "Why is that library there?"

Georgetown did have this one book. It was an incredibly rare book. It was very rare, very few libraries had it. World Cat showed me which ones had it. They were generally not in the ILL relationships here with Georgetown, but it was held in their special collections. Okay. All right, y'all are gonna have to explain this to me, how special collection works. I, sometimes, I thought for Georgetown, it's like their own special petting zoo, because you just go there and look at the book, pet the book because we were not allowed to photocopy the book because it might be injured. We couldn't even take a picture of it with a camera or a phone. I was just, what in the world is this book doing here? I wanted to put it on my syllabus for Blackboard, which is a whole other issue about the really crappy copies I get for Blackboard. I have to do all the photocopying myself, which is not, that's another side issue. But I had to go back to interlibrary loan and I had to say, "I know that you have this at special collections but I can't use this book at special collections because I have to do this thing called read this goddamn book." I go and I get the interlibrary loan. I then take it and I scan it, which, yeah, we spend a lot of time, I think my ovaries are completely useless from all the radiation from the scanner. Thank God I don't have kids or they'd have like a tail, or a photocopier leaping out of its head. I just couldn't, I honestly couldn't understand what's the point of special collection? If this book is so fragile that it can't be photographed with an iPhone, why is it not being digitized? I almost used a swear word. So, just anytime I see special collections, I just go back to Amazon and I try to find a copy for sale in London, Delhi, wherever. All right.

So, for me, my wish list, just to be very blunt, um, I don't expect libraries to cater to, to my research interest. I, it's just, economically, that's a silly proposition and it's best that schools specialize, right? So that, that we're not having schools, or libraries duplicate, collections. I believe in specialization, but I also believe that this means that as essentially as one library specializes, they're essentially creating a public good, and it's imperative that libraries understand that they benefit from the public goods that other libraries are providing. And if they forge these

relationships that allow scholars to go and have access to these various public relation, or to these various holdings. Right now, I feel that that's definitely missing. "Do I miss wandering the stacks?" There is no question. My tactileness as a scholar has been very restricted that I can't just visually go and see, "Well there's this book in Hindi. Um, well, crap, that's a more interesting book in Hindi." That, that part of my scholarship, based upon where I am, is absolutely gone. I so value the electronic databases. I cannot emphasize enough how important that is. Let me say very briefly, how Georgetown, however, organizes the databases, again, drives me to drink. They're just alphabetized, alphabetized. You've got thousands of these things and they're organized alphabetically. So, you have to know what it is you're looking for to go and find it. When I first came to Georgetown, they had them helpfully organized by subjects, so that's at least navigable. But for my students, this is an incredibly overwhelming process. They don't know how to extract value because Georgetown has not organized its resources in a way that allows my students to derive value.

I still, I must confess, when I'm really stumped, I will still call the reference librarian at the University of Chicago although, as the staff turns over and they no longer know me from my

graduate student days, that's getting harder to do. "I don't know you and you're that really grouchy person that says Pakistan's military supports terror. Do I want to talk to you? Probably not." So, that personal relationship is getting a little bit harder to, so even I'm finding myself a little bit at a loss because Georgetown can't help me there. But most importantly, it's for my students who are not South Asianist. They're just security study students. They really need to understand how to do things like a literature review. They're not learning this as undergraduates. They think a literature review is a Google search, going to Amazon. Trying to explain to them what social science abstracts is, it's almost like explaining Schrodinger's cat to my dog. When I send them to librarians, because they're supposed to be the people that are most effective at sort of introducing my students to what the university can offer, both physically and electronically, I find they seem to be inconvenienced by my students and I hear this so often that I consistently raise it with my programmatic leadership because I don't know. They might have other jobs like acquiring things, but one of their jobs should be helping students understand the value of a library, even if the value of that library isn't just the physical space, but all the other things, like access to information that libraries provide. Thank you.