

*Informed instruction:
Graduate Students' information
seeking behaviour*

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Research Objectives

- To determine Graduate Students' information seeking behaviours
- To determine the role people have in Graduate Students' information seeking, and
- To identify Graduate Student knowledge/opinion of key information resources/services

These objectives will inform our support to our Graduate Students.

Literature Review

- Investigated information seeking behaviours of Graduate Students in *all* disciplines at Carnegie Mellon University and found that people are important, library is key element in research process

George, C., Bright, A., Hurlbert, T., Linke, E. C., StClair, G., & Stein, J. (2006). Scholarly use of information: Graduate students' information seeking behaviour. *Information Research*, 11(4) [Online].

- Investigated information seeking habits of Graduate Students in the Arts & Humanities at Western and found that librarians' instruction should target the critical zone of intervention

Barrett, A. (2005). The information-seeking habits of graduate student researchers in the humanities. *The Journal of Academic Librarianship*, 31(4), 324-331.

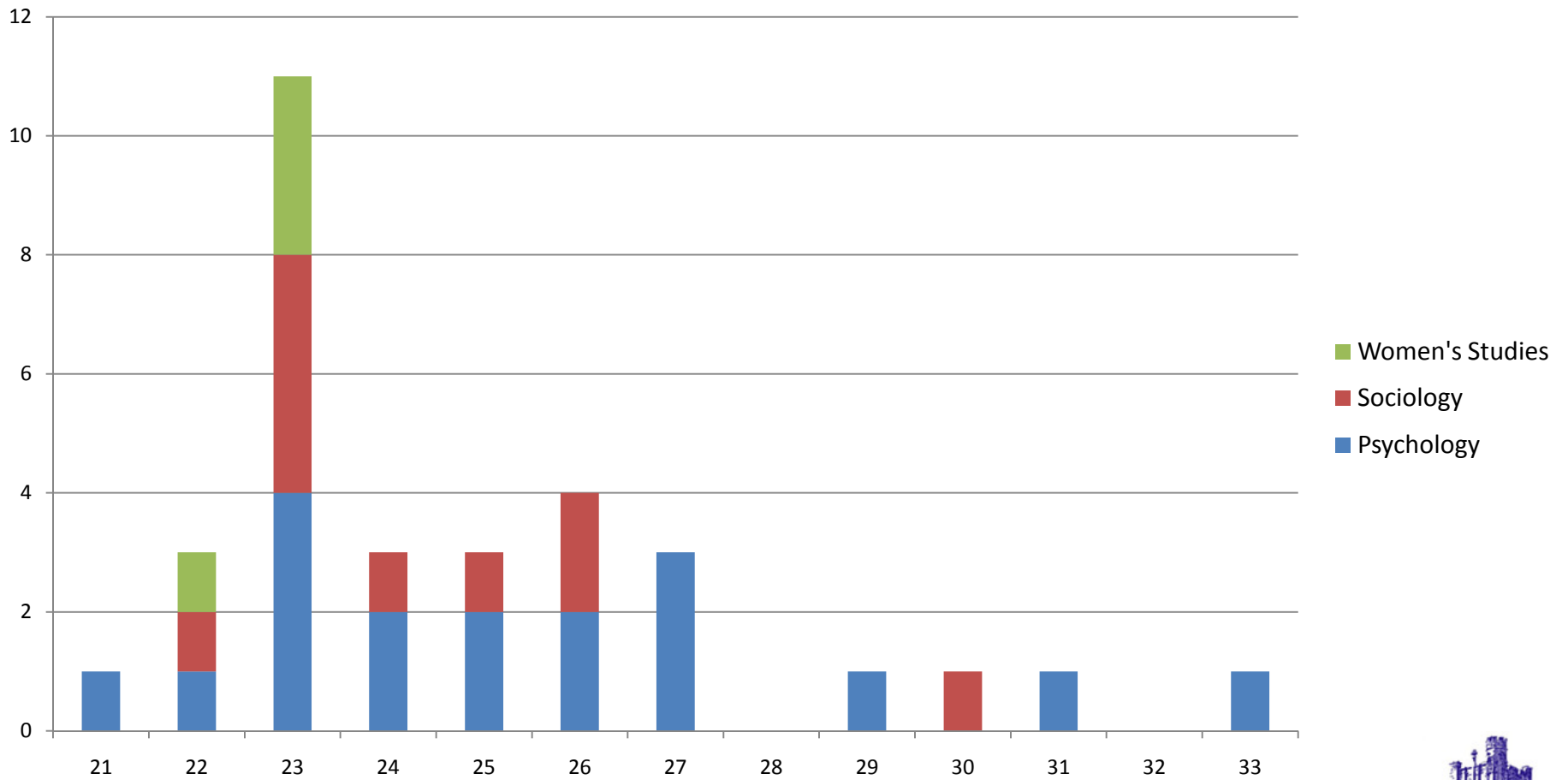
Method

- Non-Medical Research Ethics Board approval
- Conducted 33 semi-structured interviews
 - Dropped 1 participant
- Analyzed transcripts using NVivo8
 - Qualitative – discovered trends in students' information seeking behaviours
 - Quantitative – compiled statistics where meaningful

Participants

	Psychology	Sociology	Women's Studies
Master's	11	6	4
Ph.D.	7	4	n/a
Total	18	10	4

Age Distribution



So, what did we find?

- Wide range of research behaviours
 - Where they start
 - Preference for ebooks
 - How they manage information
- Training – needs and preferences
- Orientation to research
- Approaches to supporting our Graduate Students

Stumbling Blocks

- Expertise in searching
 - Search skills
 - Finding appropriate resources
- Methods of managing information
 - Managing references
 - Staying current
- Time
 - Graduate Students
 - Access to librarians

Range of Search Techniques

	Master's n=21	Ph.D. n=11
Known Database	71%	82%
Help from others	57%	9%
Google Scholar	33%	36%
Catalogue	43%	27%

- Found that students begin with a known database

- Master's students are more likely to ask others for assistance

- Google Scholar is used almost equally by Master's and Ph.D. students

- Master's students use the catalogue more than Ph.D. students

Range of Search Techniques

	Psychology n=18	Sociology n=10	Women's Studies n=4
Known Database	89%	60%	50%
Help from others	39%	40%	50%
Google Scholar	39%	20%	50%
Catalogue	11%	60%	100%

- More Psychology students start with a known database
- Sociology and Women's Studies Students are more likely to use the catalogue

Research is “Hit and Miss”

R: *“I guess what I'm trying to say is I find that my research... my researching is very sporadic and I'm lucky if I come across what I need and... then it's a good day, but if I don't come across what I need then I get really frustrated and...”*

I: *“Sure, yeah.”*

R: *“It just takes up a lot of time. Research is very hit and miss, I find.”*

(Participant 718) 🗣️

Academic Databases and Google Scholar

“I sometimes use the search engines like Soc Abstracts, or SocINDEX. But I sometimes find that I don't get very many relevant resources, like... I... And I try switching my... search words and I change the date and I rank by relevance and... sometimes... sometimes stuff comes up, sometimes it doesn't and if it doesn't I go to Google Scholar.”

(Participant 224) 🗣️

Citation Chaining

Master's n=21	Ph.D. n=11	Psychology n=18	Sociology n=10	Women's Studies n=4
52%	55%	61%	40%	50%

- High percentage of students using this method of searching
- Master's and Ph.D. students use this technique almost equally
- Psychology users use this technique the most

Student Using Citation Chaining

“So I had kind of some of the big names in the fields and some of kind of their seminal studies, that kind of ‘maybe’ area, and kind of... I looked those up and gave those a read and then some of the studies they referenced, and then some of the studies that have been cited since...”

(Participant 215)🔊

Range of Methods

	Master's	Ph.D.
Managing Information Manual System	62%	64%
Saving PDFs	33%	55%
RefWorks	29%	27%
Staying Current Search Alerts	19%	9%
Knowledge of Search Alerts but no use	19%	0%
Desire for Training	19%	9%

- Large percentage of students use a manual system for managing their information
- Equal number of students use RefWorks – low percentage
- More Master's students use search alerts
- Small percentage acknowledge knowing about search alerts
- Small percentage desire training in this area

Range of Methods

	Psychology	Sociology	Women's Studies
Managing Information Manual System	56%	70%	75%
Saving PDFs	39%	50%	25%
RefWorks	28%	20%	50%
Staying Current Search Alerts	22%	10%	0%
Knowledge of Search Alerts but no use	22%	0%	0%
Desire for Training	11%	30%	0%

- Manual system
- Low use of RefWorks
- Search alerts not used often
- Low percentage want training in this area

A Manual Method of Organizing Research Material

“Yeah. I mean, well... I mean there's probably tips I could pick up, certainly I always feel that way about everything. But I also know, my old professor I used to work for had a really good system....”

(Participant 974) 🗣️

Poor Organization Skills

R : *“I have no organization.”*

I: *“No?”*

R: *“If it's for my professor, I'll print it and give it to him and... otherwise it's just somewhere in my computer and I'll try to find it later.”*

I: *“Okay. Do you need help or training with that? Or...?”*

R: *“I probably would need help with organization. I think I'm a lost cause though.”*

(Participant 989) 

Lessons Learned: Range of Search Techniques

- Students are often using known databases but not always retrieving the information they need
- Some students are using sophisticated search techniques like citation chaining
- Many students rely on a manual system for managing their information and some would welcome training in this area
- Evidence that librarian is not on students' radar

Ebooks

	Master's n=21	Ph.D. n=11	Psychology n=18	Sociology n=10	Women's Studies n=4
Interested in ebooks	76%	64%	89%	50%	50%

Ebooks are Convenient

“I think mostly for ease of access. Because... I think they're easier to access and being over in Westminster, sometimes it's a little bit of a trek to get over to the library which sounds really lazy, I realize that. But I think also, you'll have a research idea, at like 3 in the morning, and then you'll look for something, and so you're like “Okay, well I have to wait to read that literature 'cause I can't have direct access to it right now.” And I find myself in that kind of spot, or... Especially with, like last minute papers or something like that too I think that would primarily be one of my interests in getting access to online books.”

(Participant 939) 🗣️

Ebooks for Reference; Print for In-Depth Reading

“I found that handy sometimes for classes, if there's something that I just need to look up quickly or I just need a chapter... if there's an electronic book online, then I can just look at the chapter I need without leaving my office, or maybe, you know... maybe I get the chapter... I often find this, I'll get the chapter, it's not really quite what I wanted, but... their reference list will be some... they'll have something that I can use. So for that, I find electronic books are handy. But if it's something, you know, something substantial then I want a book that I can actually take out if it's, like, centrally related to my research. Which is what I did for the routines book, which I think had just been ordered – it either had just been ordered, or I... I asked the library to order it and then I got it.”

(Participant 578) 

Prefers Print Books to Ebooks

R: *“Okay, no I'm not interested. I've actually come across those and I saw one online just the other day and then I... I searched for it, I saw it online, like I was reading a part of it and then I just discarded it and searched for it and then I just picked it up today actually this morning.”*

I: *“In print? Like a print copy?”*

R: *“In print. Yeah, you see the thing is with a book is that there's too many pages, like a journal article has maybe 50 pages, I can print it right off my computer, or view it online. But a book I feel like when there's 300 pages I just... you know. And even the content... the context, if you want to go through it, it's like too difficult I find.”*

I: *“Okay. So, so... having it in print is better for you?”*

R: *“Much better for me, yeah. Especially when there's that many pages, if it was just, you know, a 30 page journal article, I could maybe tough it up and view it on the computer, but otherwise no.”*

(Participant 224) 

Lessons Learned: Ebooks

- Graduate Students like ebooks
- Master's students prefer this format more than PhD students
- Psychology students are the most in favour of this format
- Sociology and Women's Studies students are split on their desire for ebooks

Office Hours

	Master's n=21	Ph.D. n=11	Psychology n=18	Sociology n=10	Women's Studies n=4
Used the service	18%	9%	11%	20%	25%
Thought service is/could be beneficial	81%	82%	83%	70%	100%

Office Hours

“Yeah – I have to say of the students that I know and work with – I don’t think anyone has gone to see a librarian and I don’t even know why. I’m not even thinking about it until you asked me why I haven’t considered going to office hours – I never really thought about it and I’m not sure if it is just because I am busy - because I see the ad all the time and I know Kim puts notes like I’m not here this week - so I’m definitely reading the slips and I know she’s available and I know she is available but for some reason I just feel – I never think of going to the librarian as a way of getting information. I don’t know why that is.”

(Participant 763) 🗣️

Instruction

- Most Graduate Students report having received library instruction in undergrad and/or graduate school; level of satisfaction varies
- Timing of instruction is key
- Format of instruction is important, too
- Don't always value library instruction beforehand

Training Received

	Master's n=21	Ph.D. n=11	Psychology n=18	Sociology n=10	Women's Studies n=4
In Undergrad	86%	27%	67%	50%	100%
In Graduate School	67%	55%	67%	50%	75%

Instruction Format Options

“I think I need a lot more help on PsycINFO. And... I know that there's a lot of tools out there that I don't know about yet, so... you know, if there was even like a little workshop thing, or maybe even, even a one on one – either way... or really small groups per area, you know? That would tell... that would tell us about the tools that exist, and that would be helpful to us, but we just don't know about them yet. ‘Cause, you know... I can't ask a question if I don't know what's out there, so if there was something like that... which would even just tell us the tools, like, it doesn't need to train us on all of them, even if it would tell us that these things exist and if we find that that's helpful to what ever we're doing, you know, we could ask more about that, or... we could schedule in a session to actually find out more about that, that would be useful.”

(Participant 201) 

One-On-One Instruction

“And also in a... available on almost a one on one basis so that at the time when I'm ready to want to learn, or need to learn about this information, I can make an appointment and come in and learn about it. Which is very like... student selfish attitude, but.... as opposed to having a class where we come in and do that, 'cause for some... there's just so many different levels of interest and ability already that to have a generic presentation doesn't always work for everyone.”
(Participant 956) 📢

Timing of Instruction is Key

“I think that’s the other problem with it if it’s presented at a time when you don’t use it, you’ll just forget about it. You know, but what I think that all of these people and there was a couple of advanced level students and you know we now have to start working on their dissertations or their master's thesis and things like that, suddenly that information is very, very useful.”

(Participant 830) 🗣️

Request for Mandatory Research Sessions

"I honestly do feel, 'cause we all come from different undergrad backgrounds and universities and all over the map, and... some of us have had more research exposure than others... I wonder if they can even look into making a couple of sessions mandatory for us to attend before we start out with our Master's because... there's a lot of tools out there that we're not aware of and we don't... we're not aware that we need to be aware of, or we... it will be useful to us. So even if they made... you know, it doesn't have to be much, just a couple of hours, you know, which talks about, say, PsycINFO and RefWorks and the resources available to us, like, actually training us on... you know, a couple of mandatory sessions, training us on the most important things, I think that would be useful to get everyone on the same page."

(Participant 201) 

Training Opens Up New Areas for Assistance

“All the training that has been offered has been really helpful because it leads into other areas that you're kind of like.. “Well that would be really helpful to learn, I want to learn more about that.” And then from there you get training, and then again you're able to find more areas where you never thought you needed assistance.”

(Participant 559) 

Lessons Learned: Instruction / Training

- Instruction is needed
- Mandatory, group sessions are a good start at beginning of Master's
- Tailored sessions or one-on-one help are important to meet specific research needs
- Timing of instruction is critical

Role of People in Finding Information

- Physical and social structure of departments and campus affects who influences Graduate Students' information seeking behaviour
- Some Graduate Students are not aware of librarians' services and/or experience barriers in approaching a librarian

Independence vs. Community Orientation

Independence Orientation

- Works on individual projects
- Sense of isolation from others in group or department

Community Orientation

- Works in a lab or group setting
- Sense of cohesiveness among group or department

Role of People in Finding Information

Category	Fellow Graduate Students	Professor or Advisor	Librarian
Support in General	20	8	6
Direction to particular resources	19	26	1
Finding Information	3	8	15
Minimal influence	6	7	20

Fellow Graduate Students

- Experience differs greatly depending on what department students are registered in and/or how their work and team environment is structured
- In general, fellow Graduate Students are the first stop for questions because they
 - Have experience
 - Are in close proximity
 - Are not “intimidating”
 - Know the “tricks of the trade”

Independence Orientation

R: *"Cause nobody's doing anything like what I'm doing."*

I: *"No, okay."*

R: *"We're all... we're kind of... in my... findings, we're... we're all kind of in our own little bubble. Like, you do course work together, but when it comes to your research that... nobody's research really alludes to each other."*

(Participant 718) 🗣️

Community Orientation

R: *“Or we were at a conference in Chicago last month, you pick up... “Oh, this reminds me of so and so's study”, and you pick up their little pamphlet. So I feel like there's... we're kind of all aware of what each other's research interests are, and if we see something that we think is applicable, we pass it along.”*

I: *“Great. So it sounds like your fellow graduate students really play a key role in your information gathering?”*

R: *“Definitely.”*

(Participant 215) 🗣️

Sharing Resources

R: *“So I... yeah, I think we help each other out that way, just cuts down on research time and making sure that you're not missing anything that's important. Which is really hard when you're just starting out in an area that you don't even know what the main, you know, kind of texts are a lot of times.”*

I: *“Sure, yeah, yeah. Oh that's great. Sounds like a really good collegial environment, like...”*

R: *“Yeah, I find it's none of that, you know, hiding books, or keeping good sources from each other 'cause really there's no... there's no point, you want to help each other out.”*

(Participant 783) 🗣️

Spectrum: From Independence to Community Orientation

R: *“Not much, I mean, once in a while if we read something we think is relevant to what that person is... I have an... my office mate does workplace deviance, so I sent her something a few weeks ago that was relevant to what she was working on, but... Yeah, nothing really specific, we'll just send something to each other once in a while if we come across it.”*

I: *“Do you talk with each other about your research?”*

R: *“Sometimes, I mean, once a week we take turns presenting our research, so in that sense we discuss.”*

I: *“So you hear what other people are doing?”*

R: *“Yeah, so probably once a term I present my work to other people.”*

(Participant 653) 🗣️

Professors

- Graduate Students approach their Professors with targeted questions about thesis projects
- Although not verbalized, there is a clear hierarchy about who should be approached with what questions and students are uncertain where librarians fit
- Professors can influence students to seek librarian help

Professor – Direction to Resources

“When I was starting, like I didn't really know what I was... I didn't have a research area, so he was the expert, and so he gave me several papers to read to start me off in category learning. So if I'm ever confused about where I should be starting a lit search, or like, what kind of information, he generally... he'll give me, like... one... at least one paper that he thinks is relevant to get me started.”

(Participant 944) 

Who Would You Go To For Assistance?

I: *“And so when you're having difficulty finding information, do you... would you go to your advisor and ask for assistance?”*

R: *“Not unless it was information related to my thesis. If it wasn't related to my thesis, I'd be more likely to ask a more senior graduate student in my program.”*

(Participant 578) 🗣️

Professor Endorsement of Librarian

R: *“Usually they'll give me the... just, like, names of authors, like, researchers or whatever, academics... Or names of articles, or they'll print them off themselves and give them to me kind of thing.”*

I: *“Oh really? That's nice.”*

R: *“And that's about it. Or they tell us to go see Marg during her office hours.”*

I: *“Do they? Do they? Okay.”*

R: *“Yeah, they're like “Go see Marg.”*

(Participant 437) 🗣️

Librarians

- Graduate Students' work styles affect their likelihood of asking for help
- Sometimes don't ask for help because their results are "good enough", but they realize they search by trial and error
- Graduate Students are too busy to ask for help
- Unsure what they can ask their librarian

Librarian Help with Stumbling Blocks

“And I've actually met with her several times this year in order just to begin general searches or to set up my RefWorks account, or if I'm having difficulty locating a source, passing it onto her, so I've really found that she is better able than I to navigate the catalogue and really get into the nooks and crannies that I would maybe overlook if I didn't know how to search, or where to search properly...”

(Participant 956) 🗣️

Busy Graduate Students...

“Yeah well... I mean, we're all busy people, and we're sort of running around trying to do 10 things in a day and... and, you know, that's usually one of the things, it's the 11th on the list that never quite happens, and the next day it ends up at number 11 once again. So... I know it's bad, but... at some point I intend to take advantage of that, I've got a few years left.”

(Participant 974) 🗣️

Librarian Fit Within Circle of Influence

“I see Kim as very approachable. She gave a really good beginning of the year presentation for the incoming Master's students, and I feel like... if I needed some help, that would be definitely a starting... starting place, if I felt like my lab mates might not be familiar with what I was exactly looking for. Or it's something that I didn't really want to bother my supervisor with, I feel like I could go to Kim's office hours and she would be able to help me out.”

(Participant 215) 🗣️

Librarian Expertise

“I guess just because it's kind of your job to know how all the information is gathered and stored and organized, some of the more refined details of literature searching, we don't know because, like, all of the grad students kind of do this by trial and error most of the time.”

(Participant 578) 🗣️

Brainstorm Topics

“I guess if someone is not comfortable with the database, which... for me took me like four years to be comfortable with in my undergrad and I... I know some of my peers have... have used librarians to help them with that. Or if... I know when my friend had, like, a topic and she went to Marg and... Marg helped her brainstorm ideas so that's helpful and they're sources and resources to use.”

(Participant 348) 🗨️

Librarian and Academic Department Working Together Well

R: *“And I find that the department, the Sociology department and Weldon and, like, Marg, have really worked well together and have helped us find search engines that have been really helpful for our research interests. Yeah.”*

I: *“Oh, great. That's good news.”*

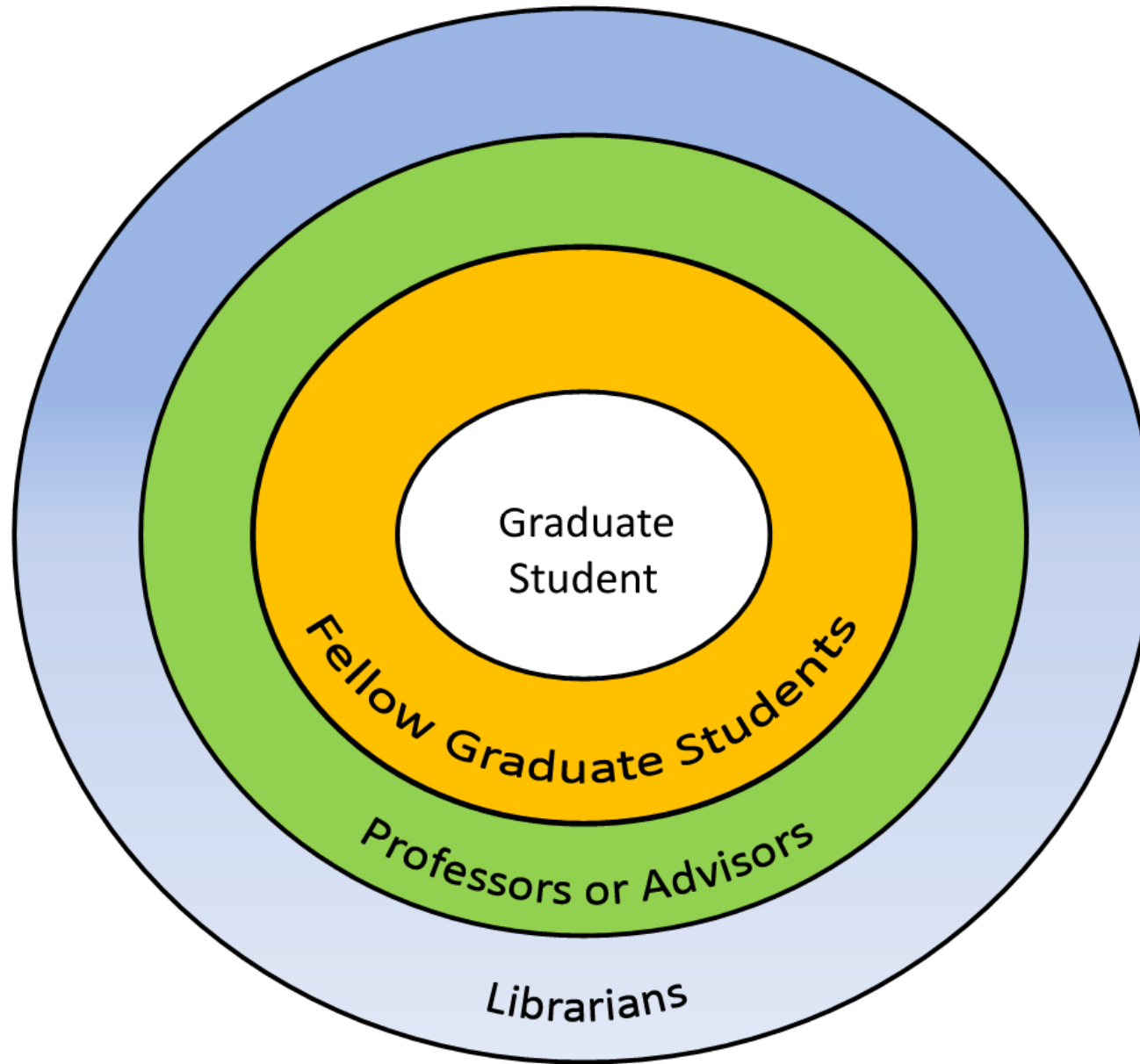
R: *“Yeah, so it's kind of taken the stress of having to feel like, you know... you're all on your own, you've having to... Yeah, find everything by yourself... it's not the case, so that's good.”*

(Participant 559) 🗣️

Lessons Learned: Role of People in Finding Information

- Proximity affects decision around who to ask (e.g., fellow Graduate Students, post-docs)
- Graduate Students feel that they “should know” certain information and therefore avoid approaching those who could help
- Graduate Students recognize librarians’ expertise
- Librarians need to continue to build relationships with Professors in order to reach Graduate Students

Circles of Influence



Reflecting...

- Graduate Students exhibit a wide range of information-seeking behaviours
 - From novice to proficient
- Graduate Students don't seek librarian help because:
 - They are busy
 - Don't know what we can do for them
 - Need instant help, e.g., at midnight

Evidence-Based Plan

- Marketing – present our research findings and plan at departmental meetings, with Graduate Coordinators, Chairs
- Librarian support needs to be deliberate and planned in coordination with Faculty
 - 10 minutes of in-class instruction per month, or
 - Mandatory library instruction for first year Graduate Students
- Continue office hours and one-on-one meetings
- Reassess in future

Comments, questions, and ideas...

We invite you to contact us with your comments, questions, and ideas:

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