

11/5/13 Faculty Spotlight Questions

Moderator: Priya Misir

Representative from GUJHS: **Kira Lin and Victoria Ma**

Today's panel includes:

Anne Rosenwald, PhD; Steven Singer, PhD – Department of Biology

Paul Roepe, PhD - Department of Chemistry

Sonia Jacobson: Office of the Georgetown Undergraduate Research Opportunities Program

Format: Questions asked to a panel – go down the line to answer questions (when applicable)

Questions:

1. How did you get involved in research?

SS: As an undergrad, I had a required senior thesis, so I had class in the field or research and with the lab work at the time

PR: My mom wanted me to stay on premed track, but I did postdoctoral work.

2. What inspired you and made you decide to stick with the research?

AR: lack of creativity in piano led to change, as research felt more creative

PR: was always good at it, knew he liked it back in high school when he had to do labs and thought that following a procedure was too rigid → felt like he wanted to do cutting edge stuff, wanted to be creative. He knew he was really good at it early on; passion- idealism-driven profession.

- Very committed individuals do research (sounds corny but yeah, people really do commit to it i.e. “I want to cure Malaria”) (noble profession)
- It's hard, you have to get grants, it's 10-12 hours a day as a student; still have to do post-doc work; figure out what kind of scientist you have to be...;
- “STICKING WITH IT...uh...I don't know, it's like the branches on a tree...” you go up and up and branch out and explore...Do you enjoy the work, the hours, working with geeky scientists, in a history/governmental/bio- chem. type setting, etc??

3. How do you know when you've found the 'right fit'?

AR: It has to do with atmosphere and the lab, fit between you and the mentor; worked for a woman studying WBC's, and then in grad school researched something that interested her. She moved on to post doc fellowships with a great mentor but the second one wasn't as great, and then got faculty job

SS: Worked in all sorts of different fields. Jumping around a little bit keeps you from getting bored. If you feel like doing research more than homework...

-He was involved in juvenile diabetes & parasitic infections work.

PR: Never thought about the “fit” with mentors, but always thought about the fit with the **work**, it was whether he really enjoyed work or felt like he was making a contribution that relatively few people can make; can you do something of value that few people can?

- Started out as a bottle washer, but was the “best damn bottle washer that anyone ever had”}
- Even on the undergraduate level, there’s always a way that you can fit in.
- I’ve always tried to be an interdisciplinary scientist, ex: working on malaria, (few chemists had worked on malaria)
- It’s all about finding your productivity and your niche. You can do that not only at the professor level

AR: if the work is interesting you can be interested in it. You don’t have to think you’ll work with that for the rest of your life. To be a successful scientist, you have to keep learning and trying new things, keep exploring new things, that’s what makes it fun too, to not be static

4. When is the best time to get started in research?

SS: starting out in the summer is, at one level, the best time

- Recommend come to lab meetings if the professor invites you to start learning about it 50-60 hours a week in the summer is really valuable to learn the ropes
- In the fall...can come in 10 at night to do an experiment, it’ll be ok if you’ve had prior experience in the summer

AR: start out as a lab rat, do the grunt work, and work your way up by first learning the skills (have a conversation with your supervisor about what you want to learn how to do, then find a mentor who is willing to train you)

PR: it’s too early in freshman year because it sucks up way too much time (takes too much time away from classes); also, you need time to do some homework on the research you want to do with the PI and about that PI so you **DON’T WASTE ANYONE’S TIME**

7. What's the best way to find out about research opportunities and approach the faculty member involved with the research / How would a student contact a PI with a project they are interested in exploring?

SS: you can find out who is in the lab, talk to people who have graduated, look at the abstracts and theses online if available.

- He’s got 5 undergrads and that’s about all he can keep track of; the other issue is that grad students have to mentor the undergrads, so it’s too much to ask the grad students to babysit a ton of undergrads; who’s showing passion about why they want to be there, who’s showing if

they want to commit; it's a very practical process to choose who to take, it's a matter of if they know what they want out of it and if they can provide the time and work

-people don't advertise

AR: they know me from class. Haven't had as many undergrads

Can feel if a student doesn't know what to do; but AR is ok with students doing what they feel they want to do

-8 is too many

PR: Proactive and Persistent = successful; tries to make it hard for people to find him; persistence wins; it's timing sometimes.

If you have more than one interest, it's not necessarily a bad thing. But you will find your own path.

SJ: sometimes labs don't have space too.

SS: physical space. Intellectual space. Keep that balance.

PR: read abstracts, pub meds.

-branch out and explore different types of research

PR: To do research but then go off to medical school afterwards. It's like you're abandoning everything you learned when you up and go to med school, ex: solid physics research.

8. What advice or suggestions do you have for someone who is trying to get involved in research with no prior experience?

SS: to hear what's going on before trying to do some research. Minimal time commitment to learn a little bit coming in the semester.

AR: Start with lab rat, washing the dishes, make the media,

Is there anyone in the lab now that can help train you? The earlier the better

PR: Freshman is little young. First priority in college should be good grades. I like to see students to have something under their belt already. I skip about half of my class to do research. My advice is be very, very humble when you start out. University should help you do that, but the brutal reality is

- Nobody pays professors and researchers to do that, so be humble and learn properly so you don't mess up

- When someone comes in as a sophomore and is good, then there will be payoff (this is reality)

- Successful labs run like small businesses → must be humble right from the get-go, and then be willing to learn, and also NOT WASTE ANYONE'S TIME

- know everything about the lab in question
- be prepared to spend over an entire semester on learning how to research (must be prepared to be thorough)
- A LOT OF WORK and COMMITMENT and SHOW IT to the people that you work for, or you'll have a hard time finding a response/ finding a niche in the lab
 - If you waste the time of a PhD student who is volunteering to babysit you, you'll regret it since they'll not waste time on you--they're busy
- intellectual stuff is the easy part
- Symbiotic relationship
- SS:** rower who graduate in 5 semesters; came in after crew, did her experiments from 7pm to 2am and did her hw in-between during waiting periods in the experiment
- SJ:** 248 hr/12 weeks
- THIS NEEDS TO BE YOUR PRIMARY extracurricular activity (devote yourself to research)

PR: a student in the middle of wet lab experiment: student says sorry I got to go, "soccer match" (however, the materials used in that gel run were expensive and took a lot of time to develop)
If you can't afford that type of time, get lost.

-different types of research: wet lab/bench, silica research using tech (some people work from home), social science research,

AR: In her department, people do modeling of infectious disease spread (exclusively on the computer)

11. How do you deal with failure in research?

AR: be willing to take risks; don't be afraid of failure; "let's see what happens" ← this attitude is really important

- Don't be afraid of doing things without permission

PR: Don't be afraid of gruff professors (they're usually gruff for different reasons)

12. What is the most rewarding aspect of doing research?

PR (see above sections where he talks about research being a noble thing)

- getting your name on a publication (the holy grail of research)
- relatively few actually publish a cutting edge research article
- GU is actually fairly unique in having students get published
 - it's a lot of work, but if you do that, then OMG WOW OH MY GOODNESS

13. What do you think of kids who go on and don't do research, etc?

PR: hopefully they go to professional school but I don't discriminate!

Has had MD-PhD students in lab working alongside biochem majors, chem. grad students...

AR: some people go on to do MD-PhD's

The way science is going = interdisciplinary

PR: the ideal scenario is to mix and explore everything

SS: the MD's asked the greatest questions, they knew what to ask, but didn't know how to answer--PhD's knew how to answer the questions but didn't really ask the right questions all the time

PR and SS talked a bit about some casual ways that chem. and bio majors test for stuff that people wouldn't normally know about

14. What do you think about GPA's, whether students have taken a course in your field, etc?

SS: You can still do the lab, even if you haven't had the course in lab. Usually, what you do in lab is unrelated to what you learn in class.

AR: You want students with decent GPA but if their GPA is too high, they are spending too much time in class (often the "smart" ones don't do well in lab).