

Panelists:

- Yue Jiang: A 6th-year student co-advised by Dr. Jason Fine and a PI at the National Institute of Environmental Health Sciences (NIEHS). Dissertation work on mediation analysis.
- Sarah Reifeis: A 5th-year student advised by Dr. Michael Hudgens and is also working closely with Dr. Michael Love. Dissertation work on the application of causal inference methods to gene expression data.
- Hillary Heiling: A 4th-year student on the Cancer Genomics training grant co-advised by Dr. Joe Ibrahim and Dr. Naim Rashid. Dissertation work on replicability in gene expression or other high-dimensional data.
- Ethan Alt: A 4th-year student co-advised by Dr. Joe Ibrahim and Dr. Matt Psioda. Dissertation work on the Bayesian probability of success in clinical trials, such as how Phase II data can be used to inform the probability of success in Phase III
- Bryan Blette: A 5th-year student working with Dr. Michael Hudgens and Dr. Peter Gilbert at the Fred Hutchinson Cancer Research Center. Dissertation work on causal survival methods, with application to HIV vaccine and prevention trials.

Questions:

1) What was the process you went through in ultimately choosing your adviser? Did you decide on a person first or on a topic first?

In general, it is likely you will not know what you will want to work on at first, so it is important to find an adviser with whom you will mesh well. Above all else, you need to be able to have a good working relationship and feel comfortable asking for advice or assistance. Several of our panelists suggested talking with students working with that adviser, especially if they are about to graduate. Those students would be an excellent resource about what that working relationship would be like.

Even if you already have a topic area in mind or are interested in working with your GRA adviser, it is still a good idea to meet with several people. You should always keep an open mind and recognize that there is so much out there that you do not know. If someone you meet is not able to advise you, it would be a good idea to ask who else they might recommend.

The overall process is quite informal. All the professors here are used to students seeking them out, so don't feel awkward contacting a professor you have never met with before.

2) When did you start the process of contacting potential advisers?

Most of our panelists started looking a few weeks after they found out they passed their qualifying exams, and they chose their adviser about a month or so later. Our panelists also noted that many other students in their years did not choose until January or February without hindering their overall progress. However, they also cautioned that those inquiring later were told more often that the adviser had no more room for students. This is especially true if the adviser already has a lot of students, as they would be looking for fewer new students.

Our panelists noted that you were unlikely to make significant dissertation/research progress while you were still taking classes, so there isn't a significant advantage to deciding early. Typically, you will be spending most of your third year after deciding on an adviser combing through the literature. So, if

you're interested in an adviser who says they won't have an opening until May, it would still be a good idea to ask them for relevant literature and meet up with them again near the end of the school year.

3) Why do so many people seem to be co-advised? If they work on different topics or areas, how is the dissertation topic chosen?

Our panelists suggested finding one adviser who is relatively new and one adviser who is more established. As your advisers will write recommendations for you, it is helpful to have someone more established in the field. With two advisers, you can have two people providing advice, and your advisers will likely have separate expertise. Having one adviser who is newer can be beneficial because they might have more time for day-to-day questions. Professors will often make a co-adviser if they already have a lot of students.

4) How has the reality of working with your adviser differed from your expectations?

This can, of course, vary depending on who you are and who you are working with. For one of our panelists, their expectations matched up to the reality quite well. When they were finding advisers, they discussed managerial style, expectations, and what the adviser felt their role was. They also spoke with the adviser's current and graduating students. From this, this panelist expected the adviser to be more hands off, and they did not meet that often. Another one of our panelists worked with their previous GRA adviser, and that prior experience was very helpful in understanding their style and expectations.

Another of our panelists said they felt advisers typically had two types of ideas: ideas that they have thought deeply about before and presented to their students, or ideas that they let students steer and develop. It is possible that your dissertation work could involve subject matter on which your adviser is not an expert, and in those cases, you will have to teach yourself and learn together with your adviser.

5) For the people whose dissertation adviser was not their GRA adviser, did they continue their GRA work or were they then funded by their dissertation adviser?

This can be a complicated topic, and it is important to be unafraid of talking about funding during your adviser search. Discuss if the adviser would be able to fully fund you. If you needed to continue GRA work or some other funding source, you need to consider and discuss how that would affect the work you would be able to do towards your dissertation, the publications you would be able to produce, and more.

6) What are the questions you asked when interviewing your adviser?

Questions to ask include the following:

- What are your expectations for your PhD students, and what do you see as your role?
- Do you have any projects you are already starting to work on?
- What kind of projects would I be working on if I worked with you?
- Who are your most recent PhD students? Where do they now work, and how long did it take them to graduate?
- If you are not able to advise me, who might you recommend?

7) What can you say about the experiences working in a small lab? After all, you can't ask other students if there aren't any.

There are some faculty members who do only have one student. Some students working in a small lab have really liked it because of the near undivided attention they get. If this is something that interests you, you could approach a new faculty member and try to start a co-advising situation. Advisers who have more students might make you wait longer, for example, for revisions on a paper. If it is what you want, you should try to ensure you can get a weekly meeting with your adviser.

8) If you don't have a particular research interest in mind, how do you go about finding an adviser?

One panelist noted that it's okay if you don't feel strongly about any particular topic at first--you don't necessarily need to be super passionate and love what you do, you just have to like it and be reasonably good at it. Your dissertation work is not what you will be doing forever. Your research can be a part of your life, not all of it. But this is not the attitude of every PhD student.

That being said, over time, if you keep an open mind, you might grow from liking to loving what you do, since conducting the research might be more interesting than what you thought previously. Your dissertation will also cover multiple projects worth of material, so you could dislike the first one and like other ones. A lot of people choose a topic because they like the application, but because UNC is a rigorous program, your method needs to be solid. So, it can be important to like the method as well.

One of our panelists also said that if you have no desire to go into academia, you should be very upfront about that with your potential advisers. If you plan to go into industry, they thought it would not benefit you to ultimately spend 6-7 years writing a highly theoretical dissertation.

9) Has your adviser adjusted or changed your dissertation work, or allowed you to do so?

For most of our panelists, this has not come up much. As you progress and do more work, you may have more freedom on your later projects. This can depend on your adviser and your own style, as some people prefer a more hands-off approach, while others prefer more structure.

10) How much time do you spend on dissertation work, and if you have a separate GRA, how much time do you spend on that? Have you applied for outside funding for your work or outside funding in general?

After finishing their classes, a lot of our panelists said they spent about 25-35 hours a week on their dissertation. If they had a GRA, they spent about 10-15 hours a week on that. Our panelists noted that GRA work could be a nice change of pace and could also lead to more applied work publications.

While they were still taking classes, our panelists said they typically spent about 10 hours a week on their dissertation, and most of it was spent reviewing literature.

11) Did anyone do an internship after starting dissertation work, and how did it impact their progress?

In general, once you start dissertation work, doing an internship is really delaying your graduation by that amount of time, since you likely won't be able to do any earnest work on your dissertation while also working full time.

One of our panelists did an internship after their 3rd year. They noted that was not great timing, since he started his dissertation work around March, then left for four months.

12) What did you think would be important that ended up not being that important?

In general, you don't really know the three papers that will make up your dissertation right when you start, and they're typically not outlined for you. Typically, your project will evolve over time, so a long, structured outline of your dissertation is not that important. One panelist noted that their second paper was borne out of having to solve a problem during writing the first paper, so it can be actually impossible to anticipate.

Some of our panelists have said they did not spend as much time doing math as they thought they would, and so, for example, the 2nd-year classes did not apply as much as they thought. Instead, they spend most of their time coding in R. However, other panelists have had different experiences where much more of their work involved doing the math. So, this can be very project dependent, and different projects can have very different ratios of theory and application.

13) Looking at your dissertation work, what would you say is the breakdown between theory and coding/application?

At a program like UNC, the three (or more) papers that make up your dissertation must have new methods, simulations of the method, and code associated with the method. The papers that make up your dissertation work are expected to be in line with what might be submitted to a strong journal.

14) Do you have any closing remarks or recommendations for our students?

Don't be too afraid of choosing the "wrong" adviser. Ultimately, you can't go too wrong. Make sure you can work well with your adviser, and don't be afraid of trusting your gut feelings when you first meet with them. Take the time to enjoy your life. During your PhD, you will inevitably have bad days, and it is important to be able to step back for a bit to take a break. Also, learn to compute in a Linux environment on a computing cluster.