

Choosing an Advisor

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Choosing the right thesis advisor is possibly the most important thing you do as a graduate student. However, from the outside it seems that most students put very little effort into this. They fall into a situation, for better or for worse, and just go with it. Here are some basic points to take into consideration when deciding on an advisor.

1. The most important thing is that you should interview every possible candidate. Make a list of all the people you might consider working with (try to think of five or more). You might even include faculty at nearby departments. Make an appointment with the people on your list, tell them explicitly that you are looking for a thesis advisor and you would like to know what kind of mathematics they are thinking about and what kinds of problems their next student might work on.

2. When you meet with a potential advisor, there are two kinds of questions to keep in mind. First, do you like that kind of math? Second, do you like that kind of advisor?

The first question seems obvious, but many students do not give it enough thought. I love the criterion my Ph.D. advisor recently told me: if you think you like a certain field of math and you can't state a specific theorem in that field that gets you excited, then maybe you don't like that field of math as much as you thought.

When I was in graduate school, a lot of students chose their field and advisor simply because of the prestige of the subject. That's not a good reason to choose a field of math or an advisor.

The second question seems secondary, but I can assure you it is not. If you need constant encouragement, make sure you have an encouraging advisor. If you need facetime, make sure you do not choose an advisor that spends half of each year in a different country. If silence makes you uncomfortable, find an advisor that likes to talk. If you need an advisor that cracks the whip, find an advisor with a whip.

When I was meeting with potential advisors, most of the meetings with potential advisors were perfunctory. The meeting with my advisor lasted over an hour, and I still remember the excitement with which he explained the connection between Baumslag-Solitar groups and hyperbolic geometry. My decision was easy.

3. Try to determine if your potential advisor cares about you as a person. When you met, did they ask you why you want a Ph.D. and what your goals are? When you told them your goals were they supportive? Do they have the means and expertise to help you achieve your goals? Do you think you could talk to them if you have personal problems? Being a graduate student is a lot more than proving theorems. There will be some highs and (unfortunately) lots of lows. You need someone who can support you.

4. Do research on your potential advisor. Read their web page and their CV. Have they successfully graduated any Ph.D. students? Where have those students landed their first jobs? Has your potential advisor received awards or grants or fellowships for their research? Have they received awards for teaching or mentoring students? Do they get invited to conferences? Do they have funds to buy off your teaching? What do other graduate students say about them?

5. Find out who your potential advisor's other students are. Do you think you could talk to them and work with them? Are they inviting and friendly? For most people, math is much more enjoyable when you do it with others, in a supportive group (my friend Moon Duchin compares math to cooking in this respect). When I was a student we had an active and vibrant student seminar. That's where I did much of my learning, about math, about giving talks, and about interacting with other mathematicians.

On a similar note, it helps if your potential advisor's research group is lively and engaging. You will want to have several people to discuss your work with, not just your advisor.

6. Last but not least, do not stay in an advisor-advisee relationship if it is not working. It is not a marriage, and you can change your mind at any time. Life is full of twists of turns, so it is not a big deal to change advisors, but it makes no sense to wait because you do not want to hurt your advisor's feelings. Your graduate school experience is about you, not your advisor.

The last point especially applies in the case of the overly aggressive advisor, for instance an advisor that claimed you as a student before you even got to campus. Good advisors will encourage you to make your own, educated decision on your advisor and will give you the time and space to do so.

To summarize: put thought into choosing your advisor! You got into graduate school because you are smart, motivated, and good at math. Take the time to choose an advisor that will help you realize your potential and achieve your goals. Good luck!