

Issues to consider when choosing a Research Advisor

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SIAM Student Chapter, Professional Development Day

February 10, 2009

What your MS/PhD/Postdoc advisor does for you

1. Helps select research field and first few specific research problems
2. Provides guidance as you acquire background technical knowledge
3. Has a unique perspective you can relate to and adapt for yourself
4. Guides you through research process
 - Helps you see beauty and structure and to devise elegant mathematics
 - Ensures that your research results can be used (by you/others) to gain new scientific knowledge in math and/or application fields
 - Shares their vision of the big and small pictures
 - Enforces the very high standards required for research (At some point you will resent your advisor for this!)
5. Advises you as you write your first journal papers and talks (painful, tedious, seemingly never-ending, but vital)
6. Ensures you have the resources to get the work done (time, financial support through external grants, computational resources)
7. Initially invests a lot of energy and time into you, and then gradually backs off as you take ownership of all aspects of research
8. Uses his/her connections to introduce you to the research community
 - Within our department and at UMBC
 - Colloquium and seminar speakers
 - Research collaborators in academia, government, industry
 - Colleagues at conferences
 - Interdisciplinary contacts

9. Uses his/her connections to introduce the research community to you and your work through
 - Your research papers
 - Your talks in local seminars and conferences
 - Informal connections
 - Letters of recommendation
10. Helps you get your next job in the profession

Which is more important: The field or the advisor?

1. Both are important!
2. Most mathematics is engrossing: Choose a field for which you have aptitude, interest, enthusiasm and the potential to get a good job in both short and long term
3. Your advisor will have an important impact on your future career: Choose someone who has a track record or willingness to do the things listed above.

What to find out about a potential advisor's track record

1. What are experiences of current and former students?
2. Did the student's graduate and what did they do afterwards?
3. How well connected is the advisor, and will these contacts help you get the sort of job you are interested in?
4. What is their track record of grant support? (This is important as it shows that other researchers care enough about the advisor's work to recommend they be paid for it and because if you have to teach all the time its hard to find time for research.)

How to find out about potential advisors

1. Early in your graduate career talk with several potential advisors about their research
2. Take regular and/or independent study courses from them
3. Read research papers they recommend to gauge your level of interest
4. Look at their CV to get an overview of their research experience and scope
5. Use a citation index (eg google scholar) to see how well cited their work is in the literature

**Start on research as early as possible.
Don't get side-tracked as time is precious and the process slow.**