The Academic Job Market: How to Increase your Odds

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In a nutshell . . .

- Be honest.
- Be passionate.
- Be persistent.
- Be savvy.
- Be yourself.
- . . . and have a sense of humor.

Starting Points

- Most academic math jobs in North America are listed at

`http://www.mathjobs.org`

Things are different, for example, in the UK. Note that SIAM, Chronicle of Higher Ed., AWM, SACNAS and EIMS also have job listings.

- This page contains examples of job interviews questions (although it is written by a non-mathematician)

`http://otal.umd.edu/~sies/jobquess.html`

- There are often useful articles in the AMS Notices, eg

`www.ams.org/notices/199810/comm-hull.pdf`

Prior to applying

Networking:

- Be high profile - Go to as many conferences as you can afford the entire year you apply and give lots and lots of talks. Make sure the talks are good. Hit up anyone you can for a talk invitation the fall (or year) beforehand. This also helps you to practice.
- Workshops (like those at the IMA) can be particularly valuable. They tend to be more focussed and can be a better environment to get to know someone in your field.
- TALK TO PEOPLE - Most mathematicians are nice. Many of us are introverts. Some of us are socially awkward.
- Follow up on interactions with people you meet. A short, simple email will do the job: *I enjoyed chatting with you at the IMA workshop on Abstract Fantasy Theory. Here is a link to my paper on "Fantasies in the 5th Dimension" we spoke about.*
- When you publish a paper or post a preprint to the `arXiv`, you can send a link and a quick description to people that might be interested.

Prior to applying

Preparing to apply:

- Be open-minded about where to apply. Don't limit yourself unnecessarily.
- Decide what type of school you're interested in (large university, liberal arts college, etc)
- Determine people at each place who you'd be interested in interacting with (collaborating with, attending similar seminars, etc). Make sure you look at what people actually do, rather than relying on departmentally organized research groups.
- If someone (eg phd advisor, postdoc mentor) knows someone at a place you're applying to and is willing to politely contact them and mention you're applying, that can be very useful. Alternatively, contact people you know yourself: *I just wanted to let you know that I sent an application for [the open position title]. I would appreciate it if you could take a look at my application.*
- It could be useful to make a chart of where you plan to apply, and who the relevant people are at each place. You can then have a mentor look at it and tell you if you've left anyone out. These people can then be mentioned in your cover letters (see below).

Applications

Cover letters

- Make a template(s), eg one for research universities and one for liberal arts colleges, with places where school-specific info can be entered.
- It is ideal to make them look reasonably specific to the given university; make sure you address any items listed in the job ad.
- It is helpful to list names of people you would interact with in each letter.
- It should be clear you're interested in that department for a reason.
- You'll also need to make an AMS cover letter, which is relatively straightforward.

Reference letters

- Give your writers plenty of time, at least one month if not more. If possible, send them your CV, research statement, and maybe teaching statement to help them write their letter.
- Typically you need 3-4, but it can be as many as 6.
- Although some people should know you very well (eg PhD advisor, postdoctoral mentor, etc), it is potentially good if someone knows you less well (eg someone you've collaborated with but who wasn't a mentor). It is helpful if they're well known (in the community you're applying to). Having some diversity of affiliation is useful.
- For teaching letters, ask someone who you've TA'd for, or ask someone to sit in on one of your lectures.

Applications

CV

- Start making a list now of everything that may be included, so you don't forget about it later.
- It should be clearly written and not overly dense.
- Lead with your strengths.
- It is a matter of opinion whether you should add personal elements (i.e. at the end list hobbies: Juggling, kayaking and karaoke.) – as in this panel is not in agreement on this.

Webpage

- People will look at your webpage - make it attractive.
- Have easy to find links to your publications.
- If you can, leave some teaching materials linked to it.
- There are reasons for and against having a photo of you on your website. This panel is not in agreement on this.
- Keep your Facebook page, etc. with a bit of decorum.

Research statement

- Many people will not read this is detail, but you have to write it well, in case they do.
- Length: there are no rules, but shorter is better. Maybe 5 pages total? At least the introduction should be readable by a general math audience.
- Mention past, current, and future work.
- Try to distinguish your research program from that of your mentors. (Obviously it will be related, but it's good for them to see your independence.)
- Include pictures to the extent possible/reasonable.
- Ask someone in your area (eg advisor, mentor) to read it.
- Ask someone not in your area to read it (eg friend, officemate) - after they've done so, they should be able to tell you a) what your research is about, b) why it's important/interesting, and c) what your contribution was.

Teaching statement

- Avoid writing a grandiose or overtly philosophical teaching statement. Try to be grounded, factual and straightforward.
- Don't be afraid to start with a quote or a vignette about a classroom experience. Is there a good picture or photo to include?
- Some suggestions: write about your personal experiences, such as what you have tried that has and hasn't worked, what your own professors have done that you have liked and disliked, etc.
- Any hard data of you making an effort on teaching is nice. If you are a non-native speaker of English, you should make sure your proficiency in English is addressed in teaching letter and if at all possible by hard data in your teaching statement.
- You can talk about mentoring undergraduate research in your statement (if you have had this experience).
- Do not spend the entire time talking about how fabulous you are at teaching. That is true about essentially no one.
- You may wish to discuss diversity and outreach; this is becoming increasingly important at many colleges and universities.

Interviews

General interview advice

- Prepare for each one individually. Spend time looking at the department's and school's website, learning about the types of research that different people do, if there are any interdisciplinary or larger-scale research centers that would be relevant, the types of courses they offer, etc.
- If you think that there are people you'd be particularly interested in talking to (in or outside the department) while you're there, you can mention that.
- Think about questions you may be asked and have some prepared to ask your interviewers (see below).
- You should be able to briefly explain the basics of your research to experts, to someone not in your field, and to a non-mathematician.
- Practice talking to people about these things so it won't feel awkward when you do it for real.

Joint meetings interviews:

- Keep your answers terse and tight: The big three questions:
  - *Tell me about your research and why it is important?*
  - *Tell me about one of your "great moments in teaching".*
  - *Why do you want a job at University X?*
- Make eye contact with everyone at the table.
- Make an impact. Have a picture from your research to show them in your portfolio. Pull a model of the Lorentz attractor out of your pocket. Do something a touch unexpected.

Interviews

Phone interviews

- These are hard. It's very difficult to gauge how the committee is reacting to your answers, and therefore difficult to adjust accordingly.
- You can take notes as you go. For example, write down the names of the people on the committee as they're introduced, anything you think of that you'd like to come back to later, etc.
- If they use video, dress as you would for an in-person interview.

In-person interviews

- Typically, you will meet with a variety of people, in 30-minute blocks, throughout the day, as well as give one or more talks (see below for talk advice).
- Drink lots of water, and try to be relaxed.
- The dinner is part of the interview.
- Try to get a sense of what it would be like to live/work there.

Interview questions they may ask

(Or at least things you may wish to think about in advance.)

- Why did you apply for the position at our university?
- How do you see yourself fitting into the department?
- How would you strengthen our department?
- What will you do to make tenure?
- What are your weaknesses - personally and of your research/teaching?
- What instructional and outreach activities beyond the usual ones would you provide?
- What courses would you want to teach? How would you teach certain classes? If you could develop a new course, what would it be?
- Do you have experience with the specific type of student body that you will encounter here?
- If hired, how long will you stay?
- Tell me about yourself (ie basic, noninvasive personal questions)
- They might ask more personal things, even if they're technically not supposed to (eg Do you have a two-body problem? If so, how do you plan to deal with it?)
- You may be asked to meet with or be interviewed by students.
- You may meet with a dean or some other senior administrator. You should be prepared to explain your research to a non-mathematician (who may "hate" math).

Interview questions you may want to ask

Note: Most people are honest about what it is like to work in their department and live in their town.

- Living environment:
  - Benefits (health insurance, retirement package)
  - Housing (schools, day-care), typical neighborhoods where people live, house prices
- Teaching:
  - Teaching load (and flexibility in distributing load)
  - Which courses am I expected to teach? Can I teach a variety of courses at different levels?
  - Course reductions for junior faculty?
- Research
  - Start-up funds
  - Computer facilities, library, online journals
  - Seminars and colloquia
  - Financial support for travel and for visitors
  - Sabbatical policy? Can you get a sabbatical before tenure?
  - Will you get any mentoring, eg be paired with a senior faculty member?

Interview questions you may want to ask (cont)

- What service/admin responsibilities will I have? (committees, etc)
- Performance assessment
  - What are the expectations for getting tenure? What is the time frame? Success rate?
  - How is teaching evaluated?
  - How are salary raises determined?
- Department/University general questions:
  - Any $\pm$s of department and/or university you might not be aware of?
  - Are departmental members generally around or do many people work from home?
  - Social activities: go to lunch together, welcome/holiday parties? Friendly department?
- When can you expect to hear from them regarding a decision?

The job talk

Every talk you give, starting now, is in some sense a job talk.

Research talk:

- This is neither a normal seminar talk nor a normal colloquium. Make sure it is accessible to a broad audience (ie the whole hiring committee).
- Every person in the room should come away knowing a) what your research is about and b) why it's interesting/important c) what your personal contributions were.
- You should seem excited about your work.
- Pictures are worth a thousand words.
- The introduction (at least) should be basic, and you should talk to the people who are not experts. (The experts probably already know what you do on some level, because they're probably the ones that got the department to interview you.)
- You may be asked to give two talks (eg one job talk for the general department, and one more specialized seminar, or one research talk and one teaching talk, etc.)
- You may be asked to give a research talk to undergrads.

Teaching talk:

- You may be given a section from a basic undergrad textbook and asked to prepare a lecture based on it.
- There will probably be current students in the room to evaluate you.

Some things to watch out for . . .

- You shouldn't be asked about your age, marital status, children, sexual orientation or religious affiliation (unless the school is a religious institution and even then the law is murky).
- However, in all probability, you will . . . .
- Be prepared to gently deflect such questions if they arise and you don't want to answer them.

After the interview . . .

- Thank you notes (can be email) to at least the chair, the search committee chair and anyone you spent extended time with.
- Write a quick debrief of anything particularly relevant or interesting you learned.
- Ask yourself: What worked? What didn't? Learn from the experience.

The two-body problem and negotiating

When (if at all) should you bring it up?

- In a cover letter? Probably not, in general, unless there is some specific circumstance that makes it particularly relevant in that case.
- At the interview? Probably not. You do not want to give them a reason to not hire you. Of course, some people may know already.
- After you get an offer? Yes. They will want to know what they need to do to get you. Be polite and not pushy. You may have to compromise on other things so you can focus your negotiations on this issue.

Other advice

- It can be psychologically difficult if one person feels they were hired because of the other, so be prepared for this.
- The departments may not appreciate what your priorities are, possibly even making incorrect assumptions about them.
- Try to be as honest as possible when negotiating. Do not be afraid to ask for things. It can be surprising what they will agree to.

Things you may wish to negotiate about

- Salary
- Start-up (amount and removal of any time-limitations)
- Teaching load (at least initially)