
Applying to Jobs in Academia

When you applied to grad school, you probably spent a lot of time the fall prior to your first year organizing all the pieces of your application. An elite math department may have a 10% admit rate into their Ph.D program. To contrast this, when an *average* math department has a tenure-track opening, their “admit rate” is probably less than 1%. That is, they will likely receive over 100 applications for 1 opening.

This shift is important in two ways: (1) you cannot half-ass a job application for academia, and (2) you’ll probably need to apply to many, *many* more departments than you did for grad school.

This summary is intended to give you an idea of what to expect in the next few months, and when to get things done.

1 Where (and when) to find job listings

There are two good places to find job postings:

1. www.mathjobs.org. You should register at this site. Later on, when you start writing your statements and have a finished CV, you can upload documents.

The way MJ works is, you can upload documents and sort them into categories: cover letters, CVs, transcripts, etc. When it eventually comes time to apply to a job listed on MJ, you click ‘Apply’, and on the ensuing page you make available those documents you want the hiring school to see. So if you apply to 50 schools over MJ, you upload 50 cover letters and “unhide” the appropriate one for each listing.

2. www.ams.org/eims/ This is a service of the AMS. A few schools (not many, but some) refuse¹ to use MathJobs and only post here.

The huge advantage MathJobs has over EIMS is that you can upload documents to MathJobs, manage them, and pretty much submit everything to postings online. If a job is listed on EIMS and not on MathJobs², you may have to mail in paper copies to the opening’s search committee. In many cases, you will be able to email your application to someone at the school’s department.

I found that roughly 85% of listings I applied for were on MathJobs.

¹apparently MathJobs costs too much? who knows...

²many schools list on both

There may be that rogue school that has an opening and doesn't advertise on either site. If your dream job is at Awesome State University and neither MJ nor EIMS has a listing, it certainly doesn't hurt to check the Awesome State U's Math Department page and see if they have an opening listed there. It may be the case that there is an one, but it has yet to be posted on MJ or EIMS.

Just like when you applied to grad school, everything happens the autumn prior to your desired start date. If you're graduating in 2010 and want to start working that fall, job postings with that start date will begin to show up in August 2009. From August through October you can expect a few new ones to be posted almost every day on those two sites.

Most job listings will have loose deadlines. They'll say something of the form "review of applications will begin December 1 and will continue until the position is filled", or "applications received before December 1 are guaranteed full consideration". Most of these deadlines will be between mid-November and mid-December. Since many of these schools will be conducting interviews at the Employment Center in January's Joint Math Meetings (JMM), they want to narrow down their applicant pool to twenty or so interviewees by then.

2 The Pieces of an Application

Your application will consist of several pieces. The common ones:

1. **AMS Cover Letter.** This is a standard form that helps schools classify and keep track of all applicants. You can fill it out on MathJobs. You won't be able to fill it out completely until you know the names of your reference writers, but you can probably fill most of it out today. Just update it when you have more information.
2. **Cover Letter.** This is a one-to-two page letter where you introduce yourself, explain (briefly) why you are a good candidate for the open position, and lay out what the search committee will be seeing in your application.
3. **Curriculum Vitae.** You may have one already, but if you don't you should download a TeX template and make a basic one.
4. **Research Statement.** This may be several pages (four to six), and should be pitched at a level that a non-expert in your field could follow. Your thesis adviser should be the ultimate authority on your research statement, and the two of you should start working on it no later than September.

Just ask your adviser for advice on how to get started, listen closely to what they say, incorporate all their suggested changes, etc. It's not their job to write it, but you shouldn't consider it done until your adviser says so.

5. **Teaching Statement.** This needn't be more than two pages. You should have this proofread by whomever is writing your teaching letter, or by a professor whose opinion you trust. You should ask your thesis adviser if they would like to read it. Having a fellow grad student proofread it is a good idea. The more proofreaders, the better! Write your first draft of this no later than September.
6. **Three (or more) letters of recommendation.** Almost every listing will ask for 3 letters of reference, with at least 1 of those focusing on teaching (the so-called Teaching Letter). Your adviser will be writing the most important of your Research Letters. Another will likely come from a member of your thesis committee. This is the type of thing you need to discuss with your adviser no later than, oh, September.

Your teaching reference may want to see your teaching statement. If they don't ask, volunteer to send them a copy. Your other research reference should be supplied a copy of your research statement. Don't expect these two letters to be written until you've finished those statements! Give your references a lot of time – at least a month, I'd say – to write their letters.

If your research statement's first draft is written on September 15, the final draft may not be done until October 15, and your email request (in person would be better) asking for a reference letter might not be replied to until October 20. The letter therefore may not be done until sometime close to Thanksgiving. This is okay! You don't need all the pieces to be done to start the ball rolling on your application. Search committees understand that the reference letters always take the longest to finish, and they'll be okay if those get mailed in separately from your other pieces.

7. **Transcripts.** Not many listings will ask for transcripts. I don't recall one asking for official transcripts with the application. Purchase one official copy from the UCSD Registrar (\$6) and scan it. For MathJobs, upload a scanned copy for those openings that want your grad transcripts. A rare few will want a copy of your undergrad transcripts, so you should purchase one copy and scan those (if you don't have a copy on hand already).

It doesn't hurt to insert a photocopy of your grad transcript with all mail-in applications. Schools may ask for official transcripts if you get to the point where you are invited for an on-campus interview. If / when that happens, you should be willing to supply them.

8. **TAing / teaching evaluations.** Again, if you administered TA evaluations, saved them, and want to present some choice ones to the search committees, it'll be annoying to do so.

However, you can get a PDF copy of the printout summarizing your online TA evaluations. If you got good marks, you can include that in your application. If you were an associate-in and had decent CAPEs, you can get a PDF or HTML printout of the summary page and include that.

9. **Publication list.** Many MathJobs openings will ask for a list of publications. Presumably you've already listed any publications as part of your CV, but if Awesome State University wants a pub list, MJ will consider your application for ASU incomplete without an uploaded 'publication list' file. So you can just copy-and-paste that section of your CV into a separate file and save it as 'publication list'.

3 Organization

The hardest part about this process is getting organized early. You'll find that once school starts in the fall the time will go really quickly. In August you should have at least a bare-bones version of your CV. Don't wait until your adviser tells you to start writing statements and cover letters and whatnot – take the initiative and continually ask them what you could be doing.

I highly recommend creating an Excel spreadsheet in August to keep track of those openings you plan on applying to. Mine had the following fields:

- school name
- job type (postdoc, visiting prof, tenure-track)
- deadline
- MJ or EIMS? (where was the original listing, in case I needed to see it again)
- school type (liberal arts, state school, private university)
- enrollment (approx.)
- state
- cover letter? (to be marked when letter was written)
- applied? (to be marked when I had submitted my pieces³)
- miscellaneous notes

³not the reference letters

The last field was particularly helpful. Whenever a job listing mentioned the existence of a combinatorics *group* at their school I put a note in the spreadsheet so I knew to emphasize that in that cover letter. Some schools may have several openings – you’ll want to make it clear in your cover letter which one(s) you are applying to for those schools.

It takes just one minute to create this spreadsheet, and a few seconds to update it whenever you see a job listing that looks good. And when it comes time to write your cover letters, you’ll find the spreadsheet to be a big time-saver.

Once you’ve submitted apps, you should create a Master Schedule (in your day planner, or in Excel, or whatever) to help plan your JMM trip. You’ll be at the JMM for only 3 or 4 days, and in that space you will have to juggle a talk (presumably), several interviews at the Employment Center, plus any talks or social events you plan on attending. It will be very helpful to have a Master Schedule to refer to as interview requests roll in.

4 Your cover letter

More than any other piece of your application, the cover letter should be tailored to the opening. If your research statement shows promise and your teaching statement is heartfelt, large schools and small schools alike will respond positively to them. However, different schools have different needs, and the best way to avoid submitting a generic⁴ application is to tailor the cover letter to try and fit the position’s demands.

Regardless of the opening, your cover letter needs to somehow provide a “greatest hits” sales pitch while still being very clear and *very* concise. Here is just a sampling of the information you want to convey:

- the position you are applying to
- your thesis adviser / subject of study
- your graduation date
- whether you will be at the JMM⁵; if so, whether you will be at the Employment Center⁶ or giving a talk⁷

And that’s just the opening paragraph. Later paragraphs should briefly touch on the following:

⁴and potentially alienating

⁵answer: you had better be!

⁶Ibid.

⁷if so, provide exact information on that somewhere

-
- teaching experience / qualifications
 - research experience, and how it makes you a good fit for their department
 - why you are a good choice for the opening (emphasize whatever strengths you think are appropriate); why you want that opening (do you like that area of the country? that type of institution?)
 - a short summary of the pieces of the application they will see: “included are my research statement, a statement of teaching philosophy, and several reference letters...”

It’s in these later paragraphs that you can make a good case for why that particular opening plays to your strengths. This is where you can try to spin yourself into the Ideal Liberal Arts Professor, or the Awesome Large-Department Research Professor, or what-have-you. If a position is for a liberal arts college, they may want someone whose research translates well into working with undergrads. A school with a large grad student population will likely want someone who is willing to be an adviser and incorporate grad students into their research work.

I cannot over-emphasize how useful it is to have all these opening-specific details on hand before you write your cover letters. If all this info is on your Excel sheet already, then changing your template cover letter into Awesome State University’s cover letter will take a few moments, tops. If not, the process of writing one cover letter will be a lot more painful.

5 Submitting applications & hearing back

So once you’ve got the pieces ready, we’re on to Phase II:

- register for the JMM / EC (if you plan on going): no later than October⁸
- submit applications (everything except reference letters): November-ish
- schools start contacting applicants for telephone / Employment Center interviews: December
- Joint Mathematics Meetings (JMM) and Employment Center: January
- on-campus interviews: January through March

Once you have your cover letters and statements and CV finished, and have asked your reference writers to write their letters, you can upload those things to MathJobs and click ‘apply’ on the listed positions. Those schools that do not use MathJobs will often ask for you to email as many pieces as you can to their search committee chair, although a few schools may want everything to

⁸see below

be mailed (ugh).

All this should be done by Thanksgiving at the latest, although there is no harm in being early. You'll start hearing back from schools in December and January. If you pass their first cut, they'll want to do a short interview with you. This may be a phone interview or an in-person interview at the JMM.

5.1 Phone interviews

Phone interviews are an inexpensive way of whittling down a school's candidate pool. Some schools conduct phone interviews and *then* conduct in-person interviews at the JMM, but this doesn't seem to be very common. If you get a phone interview from ASU and crush it, chances are they'll next ask you to visit the campus for a final interview (sometime in the new year).

Phone interviews can be really fun or really awkward, depending on the questions asked and the format of the interview. I had a phone interview with a young faculty member that lasted 90 minutes and was really enjoyable. I had a few "committee" interviews where I was speaking to a conference room full of profs, and those tended to be awkward. It's difficult to establish a conversational dynamic with a roomful of profs who have a list of questions they need to cover.

See the list below for common questions that crop up during interviews.

5.2 EC interviews

Smaller schools are more likely to conduct interviews at the Employment Center at the JMM. The EC is a quiet area where schools – mostly small schools and liberal arts colleges – get a table to conduct short interviews with applicants. These interviews often last about 20 minutes. In addition, many schools do not register for a table at the EC (that costs schools monies), and instead conduct similar-length interviews elsewhere at the JMM (like in hotel lobbies).

As for the EC: you can't just show up at the JMM in January, walk into the EC area, and start schmoozing with various hiring committees. You need to sign up for the EC ahead of time and pay a nominal fee. Also, you need to do this well ahead of the JMM. There is an October-ish deadline (check the JMM site) to register, and in registering you will fill out a detailed, CV-ish type data sheet. This mini-resume will be available to all EC participants ahead of time, which means you may be contacted in December by schools or companies you didn't even apply to. It also means that by the time the JMM rolls around, most schools at the EC will have filled their interviewing schedules with applicants who sent in full applications and registered for the EC well on time. You'll

see at the JMM a wall full of hundreds of data sheets from applicants who are registering on-site (for a larger fee). These applicants will be lucky to get one interview, since most schools don't bother to look at the ginormous wall of last-second registrants.

As for the interviews themselves: the interviewers at the schools will likely ask you to describe past teaching experiences or future research plans. In all likelihood they won't be experts on your specific field of research, so be ready for this. Be ready to deal with questions on the following topics too, as they often crop up:

- summarize your research (briefly)
- the most difficult (or rewarding) experience you've had as a teacher
- how you plan to continue your research
- what innovations or technology you've used in the classroom / how they worked / what you learned from using them
- what courses you'd be interested in teaching
- what about their school interests you
- what you'd bring to their department
- do you have any questions for them⁹

Usually the interview starts with the interviewer(s) describing their school, their department, the type of candidate they're looking for, etc. I recommend bringing a notebook to interview in case anything comes up that you think is worth writing down. At the very least, taking notes and appearing attentive will make it look like you really care about their department. Answers to the questions above should come out naturally, without much consideration¹⁰. If you don't know anything about school *X*, imagine how hard it will be to answer the last two points above! And imagine: a department can only choose a few candidates to fly out for an on-campus interview¹¹. Will they spend the time and money to bring out someone who is clearly uninterested in the position or uninformed about the school?

One final note about interviews at the JMM. These are real-live job interviews. Dress accordingly. Bring a suit (or the equivalent, ladies). Wear decent shoes. Don't worry, you can change into normal clothes after your interviews.

⁹you'd better have some good ones, or else you risk seeming uninterested in the opening

¹⁰but not so quick and motormouthed as to sound like practiced sound bytes

¹¹which costs the department a lot of money

5.3 Dead time

After the JMM you'll basically be waiting to hear back from schools. Most job searches follow the aforementioned timeline for whittling down their candidate pool. However there are always extenuating circumstances that cause some searches to take an overly long time to finish or cause some openings to appear on the market as late as March or April.

That's why I strongly recommend keeping one eye on MJ and your other sources even after the JMM, and even after your on-campus interviews. As it turns out, all my "closest calls" and my one job offer came about all from applications I submitted after February 1st. (My on-campus interview was from a Fall application.) A postdoc in my research area, a visiting position at my personal ASU (Harvey Mudd College), a job at a boarding school, and a job in finance (which I ultimately got) all appeared on the market in the new year.

Even if you find nothing worth applying to, your attitude during this "dead time" should be anything but complacent. As long as you haven't gotten a job offer, you should keep your eyes and ears open: keep prodding your adviser and friends for ideas.

6 On-campus interviews

After the Employment Center interviews & telephone interviews comes Phase III. After the JMM, most schools will make a very drastic second cut in their applicant pool – narrowing down from maybe dozens and dozens of candidates to about five. Those finalists will be asked to visit the school for an on-campus interview. These trips are paid for by the school and often involve a series of interviews and talks. These trips usually last two or three days apiece.

Whether you are teaching (as an AI) or TAing, you will need to be in constant communication with whomever it is at ASU that is coordinating your visit. They will be sympathetic to your schedule constraints, but you need to bring them up as soon as you decide to accept their invite. Chances are you will have to miss a lecture or a section, in which case you need to be ready to find a prof or TA to exchange duties with. Figure out who these people will be ahead of time – like before the quarter begins.

At an on-campus interview you will meet a large number of important people at ASU: the department chair, several profs, maybe a dean or two. You most certainly will be asked to give one or more talks while you are there, so that the faculty can see you in action. This is where things get complicated: You may be asked to give a guest lecture for a core math class, or an advanced class. You may be asked to give a talk on your research or some other colloquium-appropriate talk. The level of your audience may range from froshies to undergrad math majors to grad students to

experts in your field. Your contact at ASU will be happy to give you these details ahead of time so you can prepare for your audience. If you have any questions, ask them.

Your contact at Awesome State is a great asset for you in your quest for the job – it’s usually the search committee chair, and you wouldn’t be getting the invitation to come on campus and interview if the chair didn’t think you were worth the trouble. Before, during, and after the interview, they are the person to go to with all your questions.

As for attire: dress nice, but comfortably so. You’ll be walking around all day meeting tons of different people, so you’ll want to feel at ease. I wore nice pants, a button-down shirt, and a tie on my one on-campus interview and felt ϵ overdressed.

7 Job offers

After ASU has their final five or six candidates visit the campus, they will powwow and ultimately come up with an ordered list of all their candidates. When the search chair makes an offer, they will likely give the candidate a week or so to make a decision. This allows time for the candidate to contact any other schools they are waiting to hear back from, and also to do some negotiating, if they have received multiple offers. If the candidate turns down ASU, then ASU will go down their final preference list one candidate at a time until someone accepts the offer or they exhaust the list¹².

It may happen that all of ASU’s offers get turned down – this occasionally when a school “aims high” with their on-campus interviewees and sees them all go to more prestigious schools. In that case ASU may either close the search for the year without a hire; more likely, if there is still time remaining in the year they will start contacting short list candidates from the EC or phone interviews and set up some more on-campus interviews. You may be invited for one or two on-campus interviews months after the EC because a school’s initial search came up dry.

During the on-campus interview you should at some point be briefed on things such as health insurance, cost of living, computer and travel stipends, and other money-related issues. However, you probably won’t be quoted a starting salary until you are offered a job. If you choose to do some negotiation, be careful. If you are moving to a school 2000 miles away and would like some monies to help move, the search chair will understand your concern. If you have multiple offers and are considering taking UAS’s offer over ASU’s because UAS is offering \$5000 more per year plus a free parking permit, the search chair will understand. However, if you’re trying to highball your starting salary just because you feel entitled to more monies, that may not go over very well. The

¹²or they get to those candidates that bombed the on-campus interview and who the committee decided not to offer a job to regardless of the other candidates

job market has gotten a lot tighter recently, which means schools have more leverage and could find another qualified candidate relatively easily.

After you accept a job offer, give yourself a big pat on the back. The job application process is so long that it often seems like it will never end. To come out of it successfully is a huge accomplishment. It took from summer until spring, but now that the work is over you can finally relax.

Wait a minute, shouldn't you be typing up your dissertation? Oh God, hurry, get back to work!!

8 Resources

UCSD has a Career Services center and manages a database of local job listings. If you are interested in a job in industry and wish to stay in the San Diego area, they are a good place to start. In addition, they also offer help preparing for job interviews, as well as other services.

I've posted the following on my UCSD webspace (www.math.ucsd.edu/~aniederm/jobbies.html)

- sample cover letter and CV
- my actual teaching statement and research statement
- a prefabbed Excel spreadsheet for keeping track of jobs

One article that helped me get started with the job search process (and which contains a lot of information similar to this packet) is "Tips for the Job Search: Applying for Academic and Post-doctoral Positions" by Heather A. Lewis and John S. Caughman in Volume 53, Number 9 of the Notices of the AMS, p. 1021–1026. <http://www.ams.org/notices/200609/fea-lewis.pdf>.

Another good resource is the Young Mathematicians Network (www.youngmath.net), where undergrads, grad students and recent Ph.D's can ask and field questions on a number of matters. Several of the "older" network members have posted articles about their experiences as young faculty members serving on hiring committees. I found several of these articles helpful, especially in preparing for the JMM.