FINDING A POSTDOCTORAL POSITION IN MATHEMATICS.

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The process of applying for a first job shouldn't be too difficult nor stressful, provided that you are organized and start well in advance of the deadlines. Most of you probably have some idea of what is involved; I thought it might be useful, however, to have a brief written guide to the process. Note that this description applies primarily to postdoctoral positions in the US; procedures will be somewhat different for teaching positions, and may be very different for academic positions in other countries.

Before applying to jobs, you should **have a talk with your advisor.** There are a number of things to be settled: first of all, that you are in fact likely to graduate; what will be in your thesis; where you might want to get a job; where you are going to apply; who you might ask for letters of recommendation.

1. The application

An application for a postdoctoral position usually consists of the following.

(1) A cover letter
(2) A research statement
(3) A teaching statement
(4) A curriculum vitae
(5) Letters of recommendation
(6) (maybe) An interview and/or job talk.

The first four you write and usually submit through Mathjobs,
see `www.mathjobs.org/jobs`,
typically sometime in November. (Deadlines for postdoctoral positions usually range from November 1st to January 1st, though some fellowships, for example the NSF postdoctoral fellowship, have earlier deadlines. The NSF postdoc deadline is October 16, 2013.) The fifth you request from your letter-writers; they will submit their letters through Mathjobs.

I'll describe the first five items in turn.

1.1. **The cover letter.** This is a very simple item, and not very important. Basically it goes:

Dear Blank,

I am currently a graduate student in Mathematics at UC Berkeley, and expect to receive my Ph.D. in May of 2014. I am interested in any postdoctoral positions you may be offering this year.[1]

My research interests lie primarily in the field of Blank. In your department I would be interested in working with Professor blank(1) and Professor blank(2). My thesis, Blankety blank, was written under the supervision of Prof. Blank. In

[1]You might make this more specific.

addition, during the period I have been at Berkeley, I have taught several courses, including blank and blank.

Enclosed is my Curriculum vitae, and a research statement. In addition, you should be receiving letters of recommendation on my behalf from Blank(1), Blank(2), . . . , Blank(n). I would be happy to supply any further materials you require.

Thank you, Blank.

Clearly there are many variations: for example, you may want to omit the sentence about courses taught (its primary purpose is to indicate that you do have some teaching experience). The basic rule is: don't lose any sleep over it – cover letters are not looked at very carefully. One exception is if the hiring committee at University X is having trouble evaluating your application, in which case it may be helpful to them that you have listed professors at University X whose research is close to your own. (Then they can ask Professor blank(1) or blank(2) for another opinion.)

1.2. **The research statement.** This is a concise summary of the research you've done so far and what you plan to do in the next few years. The total length is usually on the order of 5 pages. The basic rule here is to keep it straightforward – it will probably be read by someone who is not an expert in your particular field, and who has hundreds of applications to get through. It's thus more important to indicate clearly how your research accomplishments and goals fit into the broad scheme of things, than to give all the technical details. Try to format the research statement so that it can be easily skimmed: for example, you might put the most important problems and your most important results in bold, e.g.:

Problem 1.1. *Classify the set of all happy Blanks.*

Theorem 1.2. *A Blank is happy if and only if it is nice.*

Have some people (your advisor, other mentors) look over your statement before you send it out.

1.3. **The teaching statement.** In an application for a postdoctoral position, the teaching statement is not very important, so don't waste much time on it. My opinion is that the teaching statement cannot help your application much or at all, but it might hurt your application if you write something really weird. ("When it comes to teaching, I believe it is better to be feared than to be loved.") No one really cares what is your teaching philosophy. Just write a few conventional statements about what makes a good teacher (e.g. encouraging interaction with the students), and if you have received good teaching evaluations, then this is an opportunity to brag about them.

1.4. **The curriculum vitae.** This is standard. The basic information is your name, address, degrees (with year conferred), citizenship, honors, papers written (if any). Stick to practical relevant information; mentioning that you were captain of your high school debating team is probably not called for.

1.5. **LETTERS OF RECOMMENDATION.** This is the *most important part of your application*, so choose your letter-writers carefully, and ask them well in advance of the deadlines. (At least one month; several months is better.) Writing a good letter of recommendation is time-consuming, and many faculty members will

get tons of requests for letters. So if you ask someone for a letter shortly before the deadline, he or she may not have the time *(or inclination!)* to write a good one. When you ask someone for a letter of recommendation, it is helpful to also give them your job application materials (especially your research statement), and to let them know what are the deadlines for the jobs you are applying to. In general, you should try to make it as easy as possible for the person to write the letter.

You should aim to get 4 or 5 letters of recommendation, consisting of 3 or 4 research letters, and 1 teaching letter. Of course your advisor will write the main letter about your research. In addition, you should ask 2 or 3 more people to write letters about your research.

Some students think the more letters of recommendation, the better. But if you ask for 10 letters, chances are that one or more will be lukewarm. A lukewarm letter can be an excuse for the person reading your application (one among perhaps hundreds) to throw it out ...

Who should you ask for letters? This is something that you should discuss with your advisor. Ideally your letter writers would be already know you and be familiar with your work. But it's also OK to approach someone else whose area of expertise is closely related to yours. (In the latter case, it is essential to provide that person with information about your work, for example your papers and research statement.) Ideally, your letter writers would also be well-known in the academic community. (A letter from a faculty member at a research university will be weighted more heavily than a letter from a postdoc.)

If you have already given research talks at conferences or seminar talks at other universities, you may know mathematicians from other universities who are experts in your area of math. If you felt that your work was well-received, you might consider asking one of these people for a letter of recommendation. Most graduating students will have research letters that all come from faculty at their own university – so you will stand out a bit if you have a (good) letter from a well-known mathematician who is based at another university.

2. Other advice

2.1. **Make a webpage.** You should have a professional webpage, that includes links to your research papers (if you have some already), your CV, and information about your teaching. Some people also post their research statement on their webpage.

2.2. **Give talks about your work.** At this point in your career, you should accept most or all invitations to give a talk about your work. Giving a talk is a great way to meet potential letter-writers, potential collaborators, and to get new ideas about future research directions. It is a good idea to give some practice talks at the beginning (to your wall, to friends, or at student seminars here), so that you can get feedback.

3. Waiting for and responding to offers

3.1. **Waiting for offers.** Once you have submitted your applications, there is not much to do except to wait. (Although you should check from time to time on the status of your recommendation letters; mathjob should allow you to see which letters have been submitted already.)

First round offers start being made in mid to late January, and continue on a rolling basis for several months. This can be a stressful time for people, because of the erratic nature by which schools make their offers. School A may offer a job to student X, who doesn't answer them right away because (s)he is waiting to har from School B, who hasn't gotten in touch with X because they have an offer out to Y, who is stalling in hopes of getting an offer from C, etc. The end result is that many people are still waiting around well into the spring, as the system sorts itself out. Obviously this can be a trying time. Keep in touch with your advisor, who can try to find out how things are going; try to stay relaxed.

3.2. **Responding to offers.** The final thing you will have to do is to respond to an offer or offers of a job. The routine is this: if school A offers you a job, it is generally considered acceptable to take between one and two weeks to respond. (In special cases, schools may require that you respond more quickly.) During this time, you make a list of the schools you prefer to A, and contact each in turn, informing them that you have an offer and trying to find out if there is any likelihood of your being offered a job there within the time you have before you have to respond to A. If such a possibility exists, explain your circumstances, and hope that they can do something in time. Also, during the period of time you are considering an offer, you may want to raise some questions, such as whether you can take a leave of absence to accept another short-term position, whether the leave will count against the number of years in the job, etc. If you have more than one desirable job offer, it may be possible to accept both (i.e. a year at MSRI or IAS followed by a three-year-postdoc elsewhere) and buy yourself more time as a postdoc. Once you've accepted a job, however, you should not back out and decline. The math community is small, and reneging on a job acceptance is a good way to make yourself a *persona non grata*.

As a courtesy to all the other stressed-out Year N graduate students, once you have determined that you will not accept a position at School A, you should immediately write to School A to withdraw your application. (For example, if you have an offer from School D, which you prefer to Schools A, B, and C, then even if you have not received offers from Schools A-C, you should contact Schools A-C right away.) This helps Schools A-C process their applications more quickly and make offers to other students.

3.3. **Miscellaneous.** The academic job market can be tough and it can be unpredictable. If you decide you don't want to stay in academia, or if you don't get a position that you are happy with, remember there are lots of other great jobs that a mathematician is qualified for ... the NSA, finance, consulting, industry (Google, Microsoft, Amazon, etc).