Academic job market: how to maximize your chances

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November 2, 2017

This document is based on my experience applying for a tenure-track Assistant Professor position in research university in the US during 2014-2015 job application cycle. The advice is specific to the field of Statistics, however some comments apply quite generally. All the expressed opinions are my own, and reflect my prospective as a candidate on the market.

1 Timeline

This is a rough order in which things happen on the academic job market. The timeline is based on year 2014 and my own experience.

- Prepare core application materials (CV, teaching and research statements, website). Do this *during summer*, so it's *mostly ready by September*.

- Decide on recommenders, need at least three (see specific advise below). Notify the recommenders in *August/September*, and send them your application materials (at least CV and research statement)

- Send applications (the first deadlines can be as early as *November 1st*, most are *middle of November* or *December 1st*). Don't wait till the deadline since many places start looking earlier, aim for at least a week before the deadline.

- Prepare job talk. Have it ready *by December*.

- Phone interviews. Mostly in *November and December.*

- On-site interviews. Can *start in December* and *go till March*. Most commonly happen *throughout January and in early February.*

- Receiving offers. Early offers *may happen in January.* Most *start coming end of January.*

- Making decisions. Usually have two weeks since the offer has been made. Extensions are extremely hard to negotiate.

2 Application Materials

2.1 CV

Papers are the most important part of your CV and I believe they were the weakest part of my own application package. At the time, I only had papers in review and in progress, nothing was accepted yet. My recommendation is to divide the papers section in three parts: published/accepted (peer-reviewed journals are the ones that count), in review and in progress. For the papers that are in review, include the corresponding links to arXiv (and if you don't have them on arXiv, make sure to put them there). For the papers in progress, they really have to be in progress, i.e. you have a pretty good idea on how to approach

the problem and when do you expect to be done and submit. Organize those papers by expected submission date.

There are two approaches to organizing your talks/presentations: by subject and just by date. In my case, I gave several presentations on the same subject at different places, and I hated to repeat the name of the presentation over and over again. On the other hand, I found that it's quite common to just give the dates, places and names of the conferences without specifying the subject, which is common in CVs at a more advanced academic stage. Choose whatever you like the best. If you gave some invited talks (i.e. invited by the department in a different university or invited section at a conference), make sure to separate those under Invited (with the rest being Contributed or Other).

If you have hobbies, I will strongly recommend putting them in the end of your CV. If nothing else, it gives something to talk about for people who are not in your research area. In my case, I have discussed at least one of my hobbies with at least one of the faculty in each place I interviewed, even if we had similar research interests. I think it gives a better idea of your overall personality and makes it easier to connect with people.

2.2   Research statement

I have received drastically different advice on how long it should be and how much it should cover. I chose the combination that I liked the best and I believe my research statement was a strong part of my application package. This is the strategy I suggest.

Your research statement should be concise (3 pages at most), without formulas, complicated definitions or any other mathematical notation. A very broad range of people should be able to understand what you do. If you can't explain it well, then no one cares for your research. Your research statement should roughly have three parts: overview of your research interests, description of the research projects you have done and ideas for future work. These parts are aimed at answering three questions: what kind of researcher you are and what problems interest you? (theoretical work, applied work, computing, something in between, application areas of particular interest), have you done solid research? (description of projects you have done), and most importantly are you ready to be on your own and where are you going with this? (in progress and future work). With the last part, it's important to demonstrate the balance between what you realistically know how to do (or have a very good idea on how to approach the problem successfully) and what you think will be super cool to do (i.e. missing in the current literature), but the strategy is less clear. In my statement, I had an overview (two paragraphs with the description of my research philosophy, interests and strengths), description of two large finished projects (two paragraphs each), brief list of projects in progress and for future work (one paragraph for each).

No matter what you write, make sure that it reads and sounds like you. If you like applied work, don't try to sell yourself as a theoretician. If you have strong interests in computing and found a nice interplay between computing and applicability of methods, just say that. Make sure that your research personality comes through.

Finally, every word matters, so make it count. Avoid watery and imprecise statements. The best way to spot those is to give your research statement to someone who you know is critical but not harsh, and ask for an honest opinion on the strengths and weaknesses. If you are lucky like I was, it will make your statement much clearer and stronger.

2.3   Teaching statement

If you are applying to a research university, than the most common thing that people tell you is that nobody reads teaching statements. That being said, your statement should not be horrible, and writing your own is a great way to organize your thoughts on teaching.

Composition wise, it should be no longer than 2 pages, and roughly answer the following questions about you: what do you like about teaching?, what is your approach in teaching statistics?, what are some common problems in teaching statistics and how would you face them?, what strategies do you like to use?, etc. The importance of particular questions depends on your teaching experience. Try to back up everything you say

with particular examples and strategies you have used. The way I have started is by assembling a list of questions you may want to answer in a teaching statement (I believe University of Minnesota career website has good resources on this), made short answers to each of them and then picked the ones which I felt most strongly about. You don't need to try to put every single thought you have on teaching in one short document, but the points you put should be of a higher importance to you. I have repeatedly heard from a variety of people that the best ways to destroy your teaching statement is to make it boring and without context. Please don't use cliche statements as "provide inclusive environment" and "incorporate technology in the classroom", unless you have very concrete examples of how you did exactly that and what was the benefit to the students.

As with the research statement, in the end of the day make sure it sounds like you. My teaching statement ended up being much less formal than my research statement with some quite strong opinions, but after reading it through over and over again I knew that I had examples and experience with which I can back up every one of my points.

If you have no teaching experience and apply for a position that will require you to teach - I am not really sure what to recommend. Try to get any kind of experience (tutoring, community outreach), even grading can help. Some places will not even consider candidates with no prior teaching experience (which is justified in my opinion).

2.4 Recommendation letters

Majority of the places require 3 recommendation letters, whereas some allow you to submit up to 5. It is expected that one of these letters is from your PhD advisor, however you have a lot of freedom in whom you choose for the others. Some people by default choose their thesis committee members. I will not recommend automatically doing it until you carefully think about all the options you have.

First of all, think of faculty members who know you well. Are there professors that you taught or graded for? Are there professors with whom you took graduate level classes that required class project? Are there professors with whom you had some interesting discussions on research and teaching, even though they are not members of your committee? Any collaborative projects outside of your thesis? Don't limit yourself only to your department, think about faculty from other departments that you have interacted with. Have you participated in statistical consulting center? Your first task is to come up with the list of people whom you can potentially ask for recommendation in addition to committee members.

After you have this list of people, there are certain aspects that you want to consider.

- Which of your strengths will the person be able to comment on? Your teaching? Your thesis research? Your consulting skills? Your skills as a collaborator? Writing and general research skills? (i.e. if you had a class project) Ideally, your recommendations jointly should cover as much as possible.

- How well known is the person in a statistics community? (assuming you are applying to Statistics Departments) Is it a junior researcher or a senior well-known professor? Generally, the recommendation of a senior person has stronger weight, however don't just go for the most senior person you know. See below.

- Does this person have another student who is on the same academic job market this year? This is a very important point. If the answer is yes, how would you compare to the other student? If you work on very different things there should be no problem, but if the things are similar and the comparison is not in your favor, I will not ask that person for the recommendation.

Contact people about references at least 3 months in advance, so that they have time to write a good recommendation. Different jobs may require different people.

2.5 Cover letter

This is your introduction to the employer, which essentially summarizes why you are a good fit for the position and why do you want to join this department. I have heard that many places don't read them at

all, however it doesn't mean you can write a bad one. Many positions emphasize a particular research area, and the cover letter gives a great opportunity to showcase that your research meets the position description. This is also a good place to draw attention to any significant awards you have (if any) and highlight your research. In case the place is attractive to you for a very specific reason (i.e. geographical location that makes you close to the family), it makes sense to mention it. If you are a strong candidate, some universities may not invite you thinking that you are unlikely to accept the offer in case it's made. Giving them additional reasons why you are interested in the position will maximize your chances of getting an interview.

If possible, have several sentences that can be personalized (i.e. a sentence on how you meet the position description and a sentence on why you like this particular department and university). The rest you can keep pretty much unchanged. Given how many applications you will likely submit and the low priority that is put on the cover letter, it doesn't make sense to spend too much time on this. Your time is better spent polishing your research statement and presentation slides.

3 Where to look

There are several places to look for the tenure-track Assistant professor positions. In Statistics, I found the following four sources to be the most useful.

- Job listing of the Institute of Mathematical Statistics. The ordering of the advertisements is not perfect, but most of the academic positions will be listed on this website. IMS job listing

- Job listing of the American Statistical Association. This listing has a lot of industry positions in addition to academic positions. ASA job listing

- Job listing of the University of Florida Department of Statistics. This listing has a lot of postdoc positions in addition to academic positions. UF Statistics job listing

- Job listing of academic jobs in Math. This listing has a lot of postdoc and academic positions primarily for the Math departments, which often are combined with Statistics and as such look for people with Statistics background. MathJobs listing

There are some additional sources, but they tend to have less jobs and overlap with the above listings. In my experience, the sources above covered all the listings that were of interest to me.

4 Interviews

4.1 Phone interviews

Not every place has one, but it's becoming more and more common. I think I had 3 phone interviews and around 12 on site interviews (so 3 out of 12 did both). Make sure you know who you are going to talk to and have ready answers for obvious questions like why are you interested in applying and why do you think you are a good fit. Make sure you can talk in a quiet place without interruption.

4.2 On site interviews

Usually last 1-2 full days, the main part of which is the job talk (see separate advice below). The other activities include individual meetings with faculty members, sometimes students and various lunches/dinners. All of my interviews went really well and I believe a large part of that success was my preparation. I had a notebook with a page dedicated to each person I was going to meet. On that page I put a short information about that person (title, PhD granting university, research interests, any significant administrative roles like graduate advisor). After that, I had a list of 3-4 questions I can ask that person. Some people you meet will not let you say a word, some people will look at you in anticipation of questions. I can not emphasize

enough how useful that was in my interviews. Not only was I able to get a lot of information about each place, but I also avoided weird pauses when it was not clear what to talk about.

Here are some examples of the questions you may have. A lot of them are taken from a friend who has a similar document on academic market applications:

- What do you like the best about the department?

- If you had an opportunity to change something, what will it be?

- Do you have collaborations within the department? Outside of the department?

- How is the department socially?

- How strong are the graduate students? How are they supported?

- How many students are advised by a single professor?

- Are undergraduate students involved in research?

- Do you get graders/TAs?

- What are the recreational activities?

- What are the fun things to do around?

- What is the amount of service you do?

The sky is the limit. There are some questions that you would like to reserve for the department head specifically:

- Tenure decision. Stat versus discipline journals. Grant expectations. Teaching expectations. You want to have a very precise idea of what is expected.

- Is there a mentoring program for new assistant professors? how does it work?

- What is the plan for the department in the future? How does it fit the College?

- When should I expect to hear from you?

There are also some questions that you would reserve for the dean

- Tenure decision. Be on the lookout for any discrepancies between what you hear from the dean and what you hear from the department head. It could happen and it's not a good sign.

- How does the department fits the College? How does the College fits the University?

- Are there internal funding opportunities?

- What are the benefits? (health insurance, retirement plans, etc.)

Talk to faculty about their research and how you can help them to build on that. People are excited about people who can help them publish or who are fun to hang out with. People are trying to hire a colleague. Find out as much as you can about the people you are going to meet. Ask to meet graduate students, some newly hired faculty, some people with similar research interests (if not already on the list).

This should be obvious, but be NICE to EVERYONE. This includes students, administrative assistants and anyone else you meet during the interview. This is a small world.

After an interview, send thank you emails. Either one to everyone, separate to everyone or one to the head of search committee asking to thank everyone. DON'T forget anyone.

4.3   Job talk

Practice makes it perfect, make sure it's ready by November (many places start doing interviews as early as December). If you get any feedback during the interview, update the slides for the job talk accordingly.

I will recommend choosing one big topic that you can use to connect several of the projects you have done or one biggest project. Job talk is the most important part of your interview, so make sure you spend time on it, especially if presentations are not your strongest skill. First, start as simple as you can using as many real examples as you can. Try to explain things from first principles. People love to learn new things and if they can't follow your presentation after 5 minutes, they are not going to like you. At least the first 15 min of your talk should be accessible to anyone in the audience (including the students). You can start to build up more complicated things after that, but again, don't overcomplicate stuff. In the end, I had a slide that showcased some of my other projects. I believe it was beneficial to show people that there are other things you are interested in and can do.

Handling questions is also very important. Don't rush the answer and always make sure you heard the question before coming up with the answer. Also, don't try to be defensive. If you know the answer to the question, try to be short. If you disagree, try to soften your disagreement by saying something like "This is an interesting point, but we haven't explored it" or "Thank you for pointing this out, our approach was motivated by .. and so we haven't looked at ..". Be very mindful of time. If you feel like you are getting sunk into the argument, try to resume your presentation by saying something like "This is an interesting discussion, but in the interest of time let's continue after this talk".

Usually you will have around 50 min for your presentation. It's always great to finish earlier and it's NEVER ok to take more time. People get tired and bored, you don't want to leave that impression.