

Faculty job search

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Outline

- My context
- Recommendations for how you can prepare for the academic job market.
- Applying
 - The research statement
- Skype interviews (the “short list”)
- On-campus interviews (“finalists”)

Outline

Now

- Where to apply
- Talk to mentors
- Develop materials

Prepare

Sept-Nov

Apply

- Cover letter
- CV
- Teaching statement
- Research statement
- Letters

Nov-March

Interview

- Conference
- Phone
- Skype
- On-campus

April-June

Offer

- Consider options
- Negotiation
- Accept/Decline



Resources on-line provide extensive advice about presentations, interviewing, and job offers.

- Navigating the faculty job search
<http://www.astrobetter.com/wiki/Navigating+the+Faculty+Job+Search>
- Academic job search advice
<http://matt.might.net/articles/advice-for-academic-job-hunt/>
- Maximize your changes of landing a faculty job
<http://www.sciencemag.org/careers/2013/10/maximize-your-chances-landing-faculty-job>
- Academic Job Search - The Hiring Process From The Other Side <https://career.berkeley.edu/PhDs/PhDhiring#THE SEARCH COMMITTEE>
- Getting an academic job
<http://homes.cs.washington.edu/~mernst/advice/academic-job.html>
- Landing an academic job: The process and the pitfalls (J. Dantzig) http://www2.ece.ohio-state.edu/~passino/academic_job.pdf

I was not well prepared to search for a faculty job in 1990.

- Ph.D Cornell, condensed matter physics, 1989.
- Post-doctoral work, 1989-1991, IBM research division, surface science.
- Avoid my mistakes
 - I did not have a well-defined scientific goal for my research.
 - I was not deeply aware of the broader context of current research in the discipline (condensed matter or materials physics).
 - I applied to a small number institutions (too strong of a filter).
- What I probably did well
 - I spoke clearly about my research, both the “big picture” and the technical details.
 - My research approach was unique and thorough.
 - I collaborated with some of the best scientists in the world.
 - Good publication quality and quantity.

As department head, I have hired 11 assistant professors since 2010.

- Two were still Ph.D. students when we offered them the job
 - Both deferred their start-date (with our encouragement) and took post-docs with top university faculty.
 - Two were at the start of their post-doctoral work during the on-campus interview.
 - Moral of the story: if your Ph.D. work is strong, then you do not need a mature body of work from a post-doc to be competitive in the job market.
- Seven had more conventional post-doc experience
 - Up to 4 years of experience past the Ph.D.
 - Two from national laboratories. One computational person from Lawrence Livermore. One experimentalist from Argonne (post-doc advisor is a full professor at Northwestern U.)

The majority of jobs that involve significant research are at Ph.D. granting research universities.

Carnegie Classification

	Number of Institutions	Total enrollment
Doctorate-granting Institutions	294	5,787,078
Master's Colleges and Universities	728	4,656,600
Baccalaureate Colleges	808	1,423,275
Associate's Colleges	1920	8,185,725
Special Focus Institutions	851	657,296
Tribal Colleges	32	19,686

More information: carnegieclassifications.iu.edu

Student demand for B.S. Engineering degrees is driving a growth in faculty numbers.

- Do not assume that a department different than your Ph.D. will not be interested.
- My department faculty have Ph.D.'s in materials science, physics, chemistry, chemical engineering, and mechanics.
- Asymmetry in hiring: easier to go from science to engineering than from engineering to science.
 - A typical chemical engineering department would probably consider someone with a Ph.D. in physics but most physics departments would probably not hire someone with a Ph.D. in chemical engineering.

Start now to structure your work to increase your chances of getting the job you want.

- Your current research should answer well-posed scientific questions or creatively advance the state-of-the-art of a technology.
- Great if you can motivate the science by a impactful technological goal but don't let this technological goal constrain the scholarship of your science.
- “Fishing” can be great fun and rewarding; difficult, however, to demonstrate your deep scholarship this way.
- Avoid the squishy middle ground, i.e., avoid research that has a nominal goal of advancing science and advancing technology while doing neither well.
- If your post-doc advisor is not a recognized star of your field, find someone you can talk to who is.

Start working on your story

- Most universities have gone through some type of strategic planning that ends up with more-or-less the same generic-sounding themes.
- At U. Illinois, three of these are:
 - Energy and the Environment
 - Health and Wellness
 - Information and Technology
- In a 2 minute elevator speech (mini-TED talk), how would your research story connect to a big theme involving energy, carbon, water, food, or human health?
- You will put a minimal version of this in your cover letter and a longer version in the introduction of your research statement.

Broaden your perspective

- You need to understand the work of the leading research groups in your field.
 - Important for short-list and finalist interviews, and to prepare a compelling research statement.
- Here is a test: look at the list of invited speakers at a Gordon conference (or similar size workshop) in your field. Do you know what these people do and why it is important?

Marketing is increasingly important.

- Many candidates have a professional web-site that is linked from the group web-site (and linkedin) and can be found by a google search.
- I encourage this. Include “science news” level summaries of past research accomplishments and current projects. Include eye-catching (and understandable) graphics. Make your full cv available.

You need a third letter of recommendation.

- Letters are expected from the Ph.D. and post-doc advisors.
- You need a third letter from someone who knows you and your work.
- Sometimes important in a borderline case when the committee is deciding who to put on the short list.

Do you need classroom teaching experience?

- For most research-intensive universities, the answer is “no”.
- For most 4-year colleges, probably “yes”.
- During an interview, you need to speak in an engaging way to non-experts; classroom experience can help you gain that skill.
- Most top-flight researchers are also top-flight teachers. We generally assume that faculty can fill any deficits in teaching skills. (Most universities emphasize professional development of new faculty as teachers.)

Do you need classroom teaching experience?

- Your skills as a teacher will be judged by the talk you give at the on-site interview.
- You will also submit a “teaching statement” in your application. Do some reading and educate yourself about best practices. You want to be informed and convince your future colleagues that you will be an excellent and dedicated teacher.
- At a typical research university, it is not necessary to propose an extremely innovative teaching agenda.

Apply early and often

- Job postings start appearing one year before the start-date.
- Don't put off until the deadline.
 - The exception would be if you have a important paper that is submitted but not yet accepted.
- Do not filter too heavily.
 - The time to decide if you want a job is when you are offered the job.
 - That small town in fly-over country (the town your partner already vetoed) may actually be a great place to live.
 - Career opportunities for your partner might be much better than you anticipate.
 - National rankings of university/colleges/departments do not tell the whole story.

The research statement is critical for making the short list.

- Essentially a 3-page white paper that describes your research program for the next 5 years.
 - Summarize your accomplishments and credentials; provide context and answer the question why you are the right person to carry out this important work.
 - Give the big picture that anyone can understand.
 - Describe the scientific questions you will ask and answer or the context of a key technology that you are proposing to advance.
 - Describe a few projects (three is a good number) at a level of detail an expert can appreciate and how these projects will advance your goals. The scope of these projects should be the scale of a Ph.D. thesis, not the scale of a specific experiment or individual publication.
 - All too often we understand what experiments the candidate is proposing but not why those experiments are important.

The research statement is critical for making the short list.

- The search committee needs to envision how your work will fit into the goals of the department/college/university.
 - Convince them that your work will be highly visible, impactful, and fundable.
 - Avoid “me too” research and the “squishy middle-ground” of simultaneous mediocre science and useless technology.
- The research statement does not commit you to a specific set of projects. (Different than a real proposal to a federal agency.) Many faculty never work on what they described in their interviews (I didn’t). Few will care or will even remember.
- A demonstration of the ability to create a thoughtful research statement is just as important as the specific projects you write about.
- “Interesting” is a necessary but not sufficient condition.

An aside about “good ideas”.

- Often, you will see people refer to “what are your ideas for research”?
 - I am not in favor of the word “ideas” in this context. Sounds too much like an “idea for an experiment” or an “idea for a new widget”
 - You should focus on your scientific or technological goals, i.e., what scientific question your experiment will answer, or what technology you intend to displace by creative engineering of a new solution.
 - I’m fond of saying “ideas are cheap”. Good ideas for interesting experiments are often limited to solving puzzles. The challenge is designing experiments where the outcome of the experiment can potentially transform a field.

Skype (internet video conference) interviews are becoming common for the short list.

- Last round, my department had 300 applicants for two openings. Sixteen on the short list. Eight finalists. Made two offers. Both accepted.
- We find skype interviews useful in expanding the pool we talk to and screening out candidates that would not do well with an on-site interview.
- We ask the candidate to give a short (30 minute) talk that combines past accomplishments and research plans, followed by discussion.
- The committee is looking for strengths and weakness that are not apparent in the cv and research statement.

The department wants a successful on-campus interview as much as you do.

- Large investment in faculty time. Faculty get cranky if a candidate does poorly.
- Talk with the search committee chair and make sure you understand what is expected.
- We ask the candidate for two presentations:
 - Department seminar-style presentation of past accomplishments open to anyone who wants to attend; tell a story; avoid presenting a series of disconnected projects. Practice, practice, practice.
 - “Trial-by-fire” presentation and discussion of research plan, open to faculty only. (We are kinder and gentler than we used to be...) We schedule 50 minutes; 25 minutes is for discussion. Be prepared to answer tough questions. Find skeptical colleagues and practice your pitch again and again.

We work to avoid it but sometimes a candidate will be asked an inappropriate question during an on-campus interview.

- Do not answer prohibited questions.
 - Deflect: “I would prefer not to answer that question. Let’s talk more about how your research area connects with mine...”
 - No need to talk about placement of your partner/spouse until you receive at least an informal offer.
- Prohibited interview questions
 - Age
 - Citizenship
 - Marital/Family Status/Pregnancy
 - Religion
 - Arrests
 - Disability/Health
 - Race, Gender, Gender Identity, Sexual Orientation