Preparing for the Academic Job Market

Tips I learned from our University of Maryland faculty search(es)

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and
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Outline

• what do departments look for?
• how to get the most from your postdoc
• marketing yourself to academia
• when to look elsewhere

Also

• what to look for in a postdoc position
My personal background/caveats

• B.A. small college (no research experience)
• Ph.D. @ “top 10” research university w/ on-site lab
• postdoc at private university in a well-funded group (not at lab)
• prof (since 1993) in large public research university with large (70 faculty) and diverse physics dept
  – a small fraction is nuclear physics
  – competition between fields for hiring
  – teaching load low, but teaching to nonscientists likely

you might get a different perspective from someone else
→ seek it out!
resources

• NSAC Education subcommittee report

• “Making the Right Moves” (scientific management)

• CV preparation:
  http://chronicle.com/jobs/tools/cvdoctor/03.htm

• General: http://chronicle.com/jobs/

• Look on the web for other resources (there are lots!)

• Seek out advice from senior colleagues
Career plans: current nuclear science graduate students & postdocs

Current graduate students
- Tenure track Faculty: 39%
- Researcher: 22%
- Business, government or non-profit: 14%
- Undecided: 25%

Current postdocs
- Tenure track Faculty: 51%
- Researcher: 34%
- Business, government or non-profit: 11%
- Undecided: 4%

Slide from J. Cizewski, Rutgers University
Source: Graduate Student & Postdoc Surveys, C. Beausang, T. Hallman, et al.

Summer 2006
Current positions nuclear science PhDs, 1992-1998

Slide from J. Cizewski, Rutgers University
Source: Nuclear Science PhD 5-10 Years Later Survey, J. Cerny et al.
Typical Academic Life

• 50/30/20: Research/Teaching/Committees
  – teaching load higher at non-PhD granting schools
• write grant/research proposals
• recruit and advise students
• teach science to nonscientists
• department governance
  – hiring priorities, curriculum, advising/mentoring
• university-wide committees
• write more grant proposals
• manage budgets and people (and sometimes projects)
What do departments look for?

• fundability
  – sometimes means popular field

• high likelihood of tenure
  – will you have a new physics result to talk about within 3-5 years?

• leadership/
  – can you manage other people?

• collegiality
  – can you work with other faculty?

• good communication skills (teaching potential)

• flexibility
  – are you prepared to change directions when funding directions change?
Getting the most from your postdoc

• Round out your experience
  – (lab vs university, hardware vs software, etc.)
• Take on a position of responsibility on a running experiment (spokesperson is only one of many ways of leadership)
• Look for opportunities to mentor students
• Earn the respect of visible senior colleagues (who will write letters for you)
• Don’t overstay your welcome! (3 years in one job is generally enough)
• be sure your work is getting published
Marketing yourself

• volunteer to give briefings at collaboration meetings
• Look for opportunities to give talks
• Go to a major conference per year (at most 2?)
• Keep a current professional web page with your own work
• talk to your supervisor annually about your progress/potential
What goes in your application

- **letter of introduction**
  - 1 page max, indicate who will be letter-writers
- **CV** (include letter-writers here too)
- **Research statement** (see next)
  - should include both past and future
- **Teaching statement**
  - experience not essential, but highlight if you have some
  - should have a “teaching philosophy”
Research statement

• Have 2 “visions”
  – short term (3-5 yrs): will get results in 5 years
  – long term (5-10 yrs): exciting, visionary, can be speculative (doesn’t have to be exactly what you do)

• Highlight where you’ve been a leader (how will you make your new university a “player”)

• Be (somewhat) specific about how you plan to get students involved (on campus is good if possible)

• Do some background on where you are applying
  – What is the department looking for? What new dimension would you bring?
the interview

• Get lucky! but be opportunistic (and open-minded)
• Get a copy of your interview schedule in advance and do some research on who you will meet
• Know your strengths and tell people about them (but don’t be arrogant!)
• know your audience (they’re probably not working at JLab!)
• Have a teaching philosophy
  • graduate quantum mechanics?  NO!
  • freshman nonmajor physics?  YES!

• See this link by P. Beuning: “Preparing for Academic Job Interviews”
  http://web.mit.edu/career/www/graduate/academiccareers.html
typical interview schedule

- ½ hour interviews w/ many faculty
- seminar
- teaching interview
- meet w/ department chair
- sometimes meet w/ Dean or administrator
- sometimes meet w/ groups of students

Prepare:
- prepare 1-2 minute summary of your research
- ditto for teaching experience/interest
- brief yourself on research interests of faculty you will meet: show interest and look for areas of overlap
- think about what lab space/resources you might want
- Be positive!
What also happens (out of your control)

• Department politics
• Demographics
• fashion trends in physics
• resources
Finding a good postdoc

• Get out of graduate school as quickly as possible
• Don’t be afraid to change
  • experimental Halls at a minimum!
  • experimental subfields
  • experimental fields
• Name brands count (perhaps more than they should)
• Laboratory vs University tradeoffs
add’t’l Web resources I found for this talk

Jonathan Danzig, UI UC Mechanical Engineering Dept.
“Landing an Academic Job”
http://quattro.me.uiuc.edu/~jon/ACAJOB/Latex2e/academic_job.pdf

APS Careers in Physics web site
http://www.aps.org/jobs/index.cfm

http://www.phds.org/jobs/

Berkeley Physics and Astronomy Job Hunting Resources
http://cosmology.berkeley.edu/jobs/jobover.html
Supplementary
Number of physics PhDs conferred in the United States, 1931 to 2004.

Statistical Research Center, Enrollments and Degrees Report.
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<th>Foreign N</th>
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## Employer Type by Year of PhD, 2001

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<th>Academe</th>
<th>Gov't, Non-Profit, Hospital</th>
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Source: NSF Survey of Doctoral Recipients

R. Czujko, AIP, presentation at APS March 2006 meeting, Baltimore, MD