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# Positioning yourself for an academic job

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# My Background

- B.S. Haverford College (1996) in Physics
- Ph.D. MIT (2003) in Electrical Engineering and Computer Science
- Postdoc (2004-2006) at MIT
- UCLA (2007 - )

## 2-3 years before

- Now is the time to start thinking about whether you are interested in an academic job
  - What are you most interested in? Research? Teaching?
    - Academia?
    - Industry?
    - National Lab (must know details about position)?
  - Where can you best make your name?
- **DO GOOD WORK!**
- Make yourself visible in your research field
- Get some experience teaching: TA
- Gain breadth of view of your field – (more and more as you approach the end of your PhD)

# What do you do as a professor?

- Teaching
  - Teach graduate and undergraduate classes
  - Supervise graduates and undergraduates in their research projects
  - Student advising
- Research
  - Set a research agenda
  - Get it funded (writing proposals, visit funding managers)
  - Supervise student research
  - Write and edit research papers, books
  - Attend conferences and workshops
- Service
  - Serve on committees (department level, school level, university level)
  - Academic service
    - Organize conferences and workshops
    - Review papers and proposals

# What kind of school?

- Large Research University
  - **High research expectations**
  - Smaller teaching load (1-2 classes/semester)
  - Larger startup packages
  - Lots of facilities (computing, microfabrication, etc.)
  - Many high profile researchers in many departments
  - Attractive for graduate students
- Small University
  - May have grad school, but fewer facilities
  - Variable teaching load, support for research, student quality

# Small Liberal Arts College

- **Examples: Harvey Mudd, Haverford, Williams, Wesleyan, Hamilton, Amherst, Middlebury, Wellesley, Swarthmore, Bryn Mawr, Pomona (and many more)**
- **Strong emphasis on teaching (2-3 classes/semester)**
  - Small classes, lots of interaction with undergrads
- May only have engineering department – or no engineering dept at all!
- No graduate students (usually)
  - Tailor your research to projects that can be accomplished with undergraduates over relatively short times
  - Sometimes it is possible to draw grad students from nearby large universities
- Smaller startup package – you may not have lab space
- You are still expected to run a research program!

# Liberal Arts Schools

- If you are interested in a liberal arts school, you should:
  - Do things to develop/demonstrate your interest in teaching, such as:
    - Lots of TA-ing
    - Develop teaching philosophy
    - Perform outreach activities – high school, underrepresented minorities in engineering
  - Think about scaling research interests in that direction
    - You will be a one-man show – develop your skills accordingly
    - Choose research that can be accomplished with undergraduate work
- Research support
  - There is funding for research and training set aside for undergraduate only institutions from various agencies: i.e. NSF

# Make yourself visible

- **Do good work!**
- Get yourself published
- Attend many conferences to give talks and network
  - Get to know the other graduate students in your area
    - They will become your colleagues
    - Go out to dinner/drinks
    - Visit their labs if local
  - Introduce yourself to faculty if appropriate
    - a question asked after his/her talk
    - emailing a significant paper that you have published
  - Ask your advisor for help in meeting people and for opportunities to present your work
- Your goal is that by the end of your PhD that you are known in your community

# 1 year before

- During this year you should work on solidifying your research interests and agenda.
- Things to think about
  - What do I want to be known for in 5 years? In 10 years?
  - How will I distinguish myself from my PhD work (advisor's work)?
  - What type of institution will I need to be at?
  - What type of re
- What will my first project be?
  - How much time will it take before I will be able to publish on it?
- Ideal if you can plan new experiments, do some initial simulations, feasibility studies, etc..
- Get involved in proposal writing if you haven't before.

## More things

- Get educated about various career paths
  - Chronicle of Higher Education
  - Nature Jobs
  - Academic Keys
  - Professional society publications: IEEE, APS, OSA, SPIE, etc.
- Start to think about who will fund your research?
  - Who is funding it now?
    - Meet program managers at reviews, etc..
  - Begin to scan the websites of major funding agencies:
    - i.e. NSF, NIH, DOE, ARO, AFOSR, ONR, DARPA, SRC, DTRA, NASA, and many others

## Postdoc or not?

- Look at your CV - this decision will make itself!
- If you're still not sure, talk to your advisor
- Be strategic about your postdoc – it should be able to directly produce multiple publications within 1.5 years.
- If you postdoc, there are different strategies
  - 1. Stay in the same field/group and rack up publications and impact
  - 2. Take a new postdoc where you can directly use your PhD experience to tackle a new problem quickly
  - 3. New field – If you are well established in your old field and want to switch, you can use this as an opportunity to develop skills and credibility in a completely new field.

# Summer before

- Line up your references
  - At least 3, but 5 is better
  - These should be professors in your field that can comment intelligently on your research accomplishments
  - One or two international writers is even better – it shows you have a high “international” profile
  - A “big name” reference can help – often people only know 1-2 people from your field
- Continue to work on your research plan
  - What resources will you need? Space? Funds? Equipment?
- Talk with your colleagues – let them know you are “going on the market”

# Fall: Prepare Application

- Look for listings for open positions in various locations:
  - IEEE Spectrum
  - APS Physics Today
  - Department Websites
  - Academic Keys listserv
- Talk with colleagues/ make discreet inquiries
- Prepare application
  - Cover Letter
  - CV
  - Research statement (typically 1-2 pages (never more than 3))
    - Should convey what you have done
    - What you plan to work on (perhaps 1 short term, 1 long term)
    - You should present a vision for your research program
  - Teaching statement (typically 1 page)
  - Letters of Reference

# Getting to the interview

- A department may get 100-500 applications (or more) for a single position
- How will you stand out of the pile?
  - Your profile/visibility will get you the first look
  - Your CV will then need to be sufficiently impressive to catch their eye.
  - If you know someone in the department, make sure they know that you are applying (be subtle).
- If you have done your job well, your advisor, and maybe other faculty will subtly help by making sure their colleagues know about you.

- Many references about this stage of the process
- Some good ones:
  - Landing an academic job: the process and the pitfalls, Jonathan Dantzig (UIUC) (online)
  - Making the Right Moves: A Practical Guide to Scientific Management for Postdocs and New Faculty (Burroughs Wellcome Fund, Howard Hughes Medical Institute) (online)
  - A PhD is not enough!: A guide to survival in science, Peter Feibelman (book)