TAKING THE LEAP:

Preparing for a career in academia: A compilation of talking points

August 6, 2013, 3:30 pm to 5:00 pm, ESB 1001

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Preparing for a career in academia: Outline

- Why be an academic?
- Which (what kind of) institution?
- Which department(s)?
- Cover letter and CV preparation
- Planning supporting letters
- Preparing a research proposal
- Teaching statement
- The talks
- Interviewing tips

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Preparing for a career in academia: Why?

You know the reasons – you like teaching, research, working with students, scholarship, the independence ...

You know that to be successful, you will have to multitask, to work hard ...

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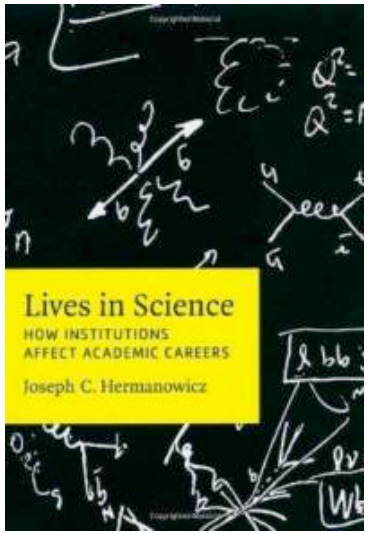
Preparing for a career in academia: Which institution is the best fit?

Caltech, UC Davis, Harvey Mudd, CSU Long Beach, University of San Diego ...?

R1 *vs*. non-R1?

Association of American Universities?
[https://www.aau.edu/, 61 (59 + 2) Universities]

PUI (Primarily Undergraduate Institution)?



Lives in Science: How Institutions Affect Academic Careers
Joseph C. Hermanowicz
University Of Chicago Press, 2012, ISBN-10: 022600564X, ISBN-13: 978-0226005645

Research or teaching-weighted?
Salary scales can be quite different.

Different classes of institutions look for different skills

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Preparing for a career in academia: Which department(s)?

Science or Engineering, for example, Chemistry, Physics, or Materials? What about Bio-, Chemical, Mechanical, Nano-, engineering

Many more Chemistry and Physics Departments, than Materials Departments.

Different time-scales for the interview/acceptance cycle – be prepared !

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Preparing for a career in academia: Researching departments, people

Look at recent hires in the departments that are of interest. What are their profiles? Will you be of interest to the department?

Talk to recent successful applicants of your acquaintance.

Are you competitive?

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Preparing for a career in academia: Cover letter and CV

Write a good letter. Let the letter explain in brief why it will be a good fit, how you can contribute to the Department's growth, and why it would be good for your career.

CV: Short, and important. "~~Skilled at STEM imaging of nanoparticles ...~~"

Don't wait till page 5 to list publications.

Don't dilute your achievements with trivia. No need to list every award or grant.

Publications with **doi** links, in reverse chronological order.

No *in preparation*, and *to be submitted* (unless the latter also says *manuscript available for review*).

No *submitted to Nature*. Just *submitted for publication* will do.

Separate the wheat from the chaff – listing letters to the editor, and conference proceedings with archival journal papers is often looked at in askance.

No *h* index or citation data (Letters can address these).

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Preparing for a career in academia: CV example

7. B. C. Melot, G. Rousse, J-N. Chotard, M. Ati, M. C. Kemei, and J-M. Tarascon Magnetic structure and properties of $NaFeSO_4F$ and $NaCoSO_4F$ *Phys. Rev. B* (2012) [doi]
6. M. Reynaud, P. Barpanda, G. Rousse, J-N. Chotard, B. C. Melot, N. Recham, and J-M. Tarascon Synthesis and crystal chemistry of the $NaMSO_4F$ family (M = Mg, Fe, Co, Cu, Zn) *Solid State Sci.* **14** (2012) 15–20 [doi]
5. M. Ati, B. C. Melot, G. Rousse, J-N. Chotard, P. Barpanda, and J-M. Tarascon Structural and Electrochemical Diversity in the $LiFe_{1-\delta}Zn_\delta SO_4F$ solid solution: another 3.9V positive electrode based on Fe *Angew. Chem. Int. Ed.* **50** (2011) 10574–10577 [doi]
4. M. Ati, B. C. Melot, G. Rousse, J-N. Chotard, and J-M. Tarascon Synthesis and Electrochemical Properties of pure $LiFeSO_4F$ in the triplite structure *Electrochem. Comm.* **13** (2011) 1280–1283 [doi]
3. P. Barpanda, M. Ati, B. C. Melot, G. Rousse, J-N. Chotard, M-L. Doublet, M. T. Sougrati, S. A. Corr, J-C. Jumas, and J-M. Tarascon A 3.9 V Fe-based fluorosulphate material for Li-ion batteries crystallizing in the *triplite* structure *Nat. Mater.* **10** (2011) 772–779 [doi]
2. B. C. Melot, J.-N. Chotard, G. Rousse, M. Ati, M. Reynaud,and J-M. Tarascon, Synthesis, structure and magnetic properties of the $NaCoXO_4F{\cdot}2H_2O$ phases where X = S and Se *Inorg. Chem.* **50** (2011) 7662–7668 [doi]
1. B. C. Melot, G. Rousse, J.-N. Chotard, M. Ati, J. Rodríguez-Carvajal, M. C. Kemei, and J.-M. Tarascon Magnetic structure and properties of the Li-ion battery materials $FeSO_4F$ and $LiFeSO_4F$ *Chem. Mater.* **23** (2011) 2922–2930 [doi]

Publications within the Seshadri group:

15. J. R. Neilson, D. E. Morse, B. C. Melot, D. P. Shoemaker, J. A. Kurzman, and R. Seshadri Understanding complex magnetic order through analyses of local atomic structure *Phys. Rev. B* **83** (2011) 094418 [doi]
14. B. C. Melot, L. E. Darago, R. Seshadri, A. Goldman, J. D. Furman, and E. E. Rodriguez Magnetic susceptibility and magnetodielectric phenomena in $CoSeO_4$ *J. Phys.: Condens. Matter* **22** (2010) 506003 [doi]
13. S.-H. Kim, P. S. Halasymani, B. C. Melot, R. Seshadri, M. Green, A. Sefat, and D. Mandrus, An experimental and computational investigation of the polar ferrimagnet $VOSe_2O_5$ *Chem. Mater.* **22** (2010) 50074–5083 [doi]
12. P. J. Saines, B. C. Melot, Ram Seshadri. and A. K. Cheetham, Synthesis, structure and magnetic phase transitions of the manganese succinate hybrid framework $[Mn(C_4H_4O_4)]$ *Chem.–Eur. J.* **16** (2010) 7579–7585 [doi]
11. K. I. Lilova, A. Navrotsky, B. C. Melot, and R. Seshadri, Thermodynamics of $CoAl_2O_4$–$CoGa_2O_4$ solid solutions, *J. Sol. State Chem.* **83** (2010) 1266–1271 [doi]
10. B. C. Melot, B. Paden, R. Seshadri, A. Dixit, G. Lawes, and E. Suard, Magnetic structure and susceptibility of $CoSe_2O_5$: A low dimensional antiferromagnet, *Phys. Rev. B* **82** (2010) 014411 [doi]
9. S. A. Corr, D. P. Shoemaker, B. C. Melot, R. Seshadri, Real space investigation of structural changes at the metal-insulator transition in VO_2 *Phys. Rev. Lett* **105** (2010) 056404 [doi]
8. B. C. Melot, K. Page, R. Seshadri, E. M. Stoudenmire, L. Balents, D. L. Bergman, and Th. Proffen, Magnetic frustration on the diamond lattice of the A-site magnetic spinels $CoAl_{2-x}Ga_xO_4$: The role of lattice expansion and site disorder, *Phys. Rev. B* **80** (2009) 104420(1-8) [doi]

List all authors, the title, and the first and last pages. Be consistent in reference style: Sentence case for the title, no author first-names (only initials), journal names appropriately abbreviated, volumes, and year or publication. DOI links.

Never *et al.* !

Youngest papers first.

Separate, if necessary, undergraduate, graduate, and post-doctoral publications.

NEVER SUBMIT A WORD FILE, only PDF

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Preparing for a career in academia: Supporting letters

Who is writing letters for you? Do they know you and your work? Have you spoken with them well in advance of your requiring letters from them?

Remember people who should *not* be writing letters for you, may not actually *tell you* so – they may just write an ineffective letter.

Letters from very distinguished people can work either way. Don't ask them unless they have a reason to write a letter. Publication co-authorship in itself is not sufficient reason.

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Preparing for a career in academia: The research proposal

5 to 10 pages (PDF) on multiple projects (typically 2 to 3) – this can take serious time. The associated presentation also takes time to prepare and practice.

Does the proposal reflect exciting and original science, and does it reflect YOU?

Would the technical non-expert be excited by the science presented?

NSF/DOE proposals from your advisor are a good starting point, but not necessarily a good template. Better, ask more senior peers how they wrote their proposals.

Preparing for a career in academia: The teaching statement

Critically important for PUIs. Usually a page for R1 institutions.

Think this through carefully, and be aware that for most people, this can take time.

A useful strategy is to think of the teaching style of instructors who have inspired you.

Don't speak ill of the instructors you have had.

Don't feel shy about mentioning courses that you would like to design, and to teach.

Mention outreach, and your interests and experiences thereof.

Grammar check carefully. Have friends read this and indeed, *all* your documents.

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Preparing for a career in academia: The research talk

Congratulations for having been invited !

Never exceed 45 minutes, when scheduled for 1 h. Q&A is critical.

Practice extensively. Go to a lot of talks by people in the same situation, and recent hires.

Aim at least 50% of the talk at a general audience. The *Why* is more important than the *What*.

No need to tell the audience everything. Remember you also have one-on-one time with faculty members.

Never be dismissive when asked questions. Do not name drop. Do not shift responsibility: "*I did not take this data which, in restrospect, is clearly suspect.*"

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Preparing for a career in academia: The proposed work talk

Practice extensively with people whom you believe will be critical. Do this well in advance. Try and do this with faculty at your home institution.

Do not assume that everyone in the audience has heard the first (research) talk.

30 minutes max. and perhaps 10 to 15 slides.

Preparing for a career in academia: Interviews

Don't be a jerk – guard your tongue.

Do not be critical of the institutions that you have been in, or other institutions where you interviewed: "*Can you believe they took me to an Olive Garden?*"

Do not speak slightingly of your undergraduate, graduate, or post-doctoral institutions or mentors.

Listen carefully, and be curious. Ask lots of questions !

This is not poker – express your opinion, your enthusiasm …

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Read the book !

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Good luck !

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