Planning Your Research Career

CRA Career Mentoring Workshop

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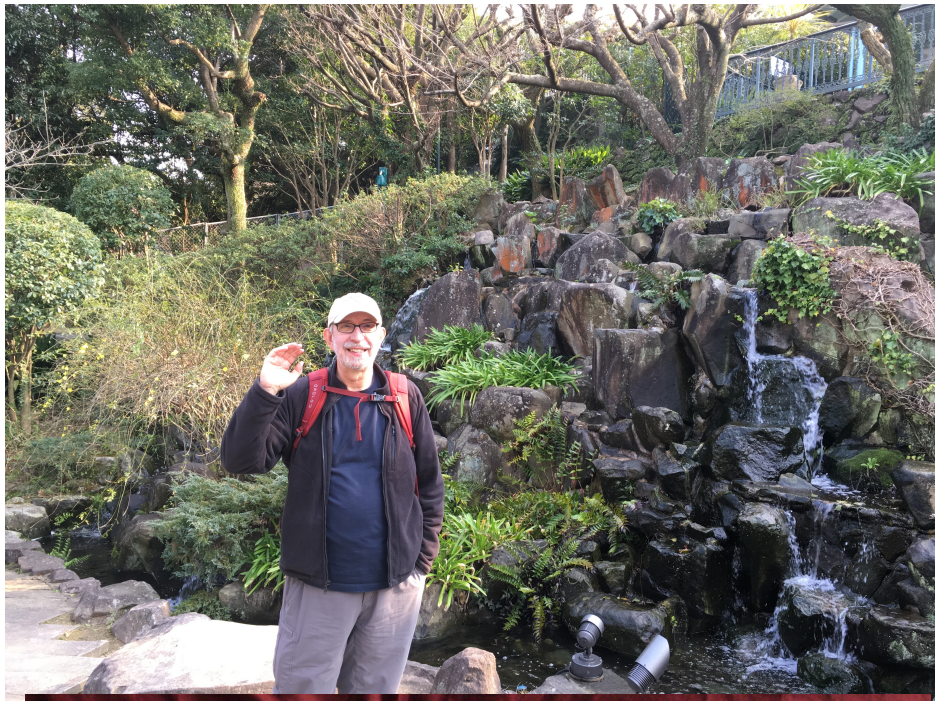
Julia Hirschberg in One Slide

Technical Career

- PhD in History, UMich
- Asst Prof at Smith
- Saw the light: PhD in CS, UPenn
- Bell Labs/AT&T Labs: MTS and Dept Head
- Move to Columbia CS
- CS Chair with 7 PhD students
- Speech and NLP

Family and Fun

- Married to Dan Hirschberg
- Cats: Oliver and Dahlia
- Hobbies: opera, plays and musicals, cooking, travel, Duolingo



General Career Tips

- Know yourself
  - Strengths and weaknesses
  - Be honest with yourself
- Do work you really love
  - Enjoy what you do…or do something else
- Work hard…*and don't stop when you get tenure….there is a whole career* ***after*** *tenure*
  - *More Best Papers, journal editor, PC Chair, plenary talks, Fellow, Professional Society Awards, Department Chair…*

Academia 101

- Criteria for Success: Research, Service, Education
- Path
  - (Postdoc) → aP → AP → Tenured AP → Full
    - At some schools AP and Tenure come at the same time
  - Along the way and beyond
    - *Opportunities* for administrative and service positions in academia and government; sabbaticals and leaves
- Impact is what matters
  - Quality, not quantity, but ... *there are limits*
  - Ideas and people (students) are your legacy, not papers, but … *great papers get you there*

Choosing a Research Problem

- Does it interest you?
  - Does it interest others?
  - If not, should it? can you convince them?
- Nature of research will change throughout your career
  - Rule of thumb: Look for progress/results within 2-3 years
- Be ambitious and bold but … *also take advice*
- Look for intersection between opportunities (for funding, collaboration) and new questions: e.g. DARPA
  - Often great ideas come from others' research: i.e. I could do that better. They didn't do X. If X then…
- Don't be afraid of interdisciplinary research but … *make sure you are well-connected in both disciplines and can be clear about your **own** contribution*

Finding Solutions

- Scientific method: Three Pillars of Science
  - Experimental: Hypothesis, design experiments, run, evaluate, iterate
  - Theoretical: Solution is proof and algorithm or impossibility result
  - Computational
    - Algorithmic, software
    - Big Data and DNNs are now huge but…what's next?

Doing Research

- Ask for feedback
  - Talk about your work with colleagues, students
  - At conferences, with industry
- Keep a research diary
  - Always be writing down your great ideas, research decisions and why
- Work with others…but judiciousl
  - Colleagues, post-docs, graduate students, undergraduates, visitors
  - Make sure your contribution is clearly recognized

Educating

- Take educational responsibilities seriously
  - Teaching: develop new courses, curricula, and degree programs
  - Advising graduate students and undergrad project students
- Balance teaching and research
  - Teaching doesn't just mean lecturing but also
    - Making up homeworks, labs, exams, managing TAs and infrastructure, ***dealing with huge classes***
    - Online learning courses are ***not*** for junior professors but flipped classroom approaches can be fun

Communicating

- Networking is enormously important
  - Ask questions at conferences…*you can prepare in advance*
  - Introduce yourself to senior people in field and program directors at conferences and workshops but … *don't neglect your peers*
- Meet colleagues on campus *… in other fields that might produce collaborations*
- Speaking
  - Know your audience and practice all your talks
- Writing
  - Know your audience and publish in top conferences and journals … but not just these
  - Workshops are for getting ideas out quickly and early feedback … and they ***do*** count too as publications

Academic Career Advice

- Don’t obsess about tenure
  - Just do good work and tenure will come but … get feedback and listen
  - Schools go through ***lots*** of trouble to hire you – they ***want you to succeed***
- Get mentors in your department and in your field outside
  - Your mentors may change over your career
- Take sabbaticals and leaves as they are offered
  - Leave home: go to other schools, industry, government, abroad
  - There is never an ideal time, just do it!
- Make time for yourself and your family

Service: You are Part of Two Communities

- Your research community
  - Early on:
    - Program committees
    - Panel or ad-hoc reviewing for funding agencies
    - Reviewer for journals and conferences
  - Later:
    - Program chair, journal editor, conference organizer, organizational boards and officers
- University community
  - Programs, Department, School, University committees: more networking at home

Remember

- If your department hired you, they really want you to succeed
  - Don’t hesitate to ask your chair and your mentors for advice
- Schools typically have resources to help with teaching, dishonesty issues, even interpersonal problems with colleagues
- Enjoy your students: they’re a large part of why we’re in academe
  - Let them know when they show up what you expect
  - Take care of them as you’d wish to be helped

Questions?

Resources

- Dave Patterson's Non-Technical Talks
  - http://www.cs.berkeley.edu/~pattersn/talks/nontech.html
- Jeannette Wing's Tips on the Interview Process
  - http://www.cs.cmu.edu/~emigration/interview.pdf
- Jeannette Wing's "Twelve Tips for Department Heads from an NSF Perspective"
  - http://cacm.acm.org/blogs/blog-cacm/54177-twelve-tips-for-department-heads-from-an-nsf-perspective/fulltext
- Advice about everything:
  - http://web.engr.illinois.edu/~taoxie/advice.htm