Postdoc Women and the Leaky Pipeline: Strategies for Advancing Your Academic Career

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National Postdoctoral Association

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National Postdoctoral Association

• **What is the NPA?** A non-profit, member-driven professional organization providing a national voice for postdoctoral scholars.

• **Mission:** To advance the U.S. research enterprise by maximizing the effectiveness of the research community and enhancing the quality of the postdoctoral experience for all participants.

• **Activities:** National Advocacy, Resource Development, Community Building
NPA is a Member Organization

- SBU is an NPA Sustaining Member
- Free affiliate memberships for SBU students, postdocs & staff!
- Access to members-only resources and Web content
- Discounts on meetings & other services
  - Our 10th Annual Meeting: March 2012
- Receive e-alerts and news
- Sign up online for immediate access
  http://www.nationalpostdoc.org/affiliatemembership
NPA ADVANCE is a project to adapt and disseminate promising institutional practices that can help women postdocs successfully transition to faculty careers.

We provide:

- Summary of current data on postdocs and gender
- Clearinghouse of promising practices for institutions
- Technical assistance to institutions seeking to implement programs for postdoc women
- Forthcoming resources for institutions and postdocs

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The Leaky Pipeline of Scientist Women

Figure adapted from Mary Ann Mason, based on study from Goulden, Mason & Frasch 2009, "Staying Competitive Patching America's Leaky Pipeline in the Sciences."
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Who are the postdocs?

- NSF/NIH Definition: A postdoctoral scholar ("postdoc") is an individual holding a doctoral degree who is engaged in a temporary period of mentored research and/or scholarly training for the purpose of acquiring the professional skills needed to pursue a career path of his or her choosing.

**post·doc (pōst'dōk'), n. adj. Postdoctoral.**

1. A postdoctoral scholar
2. A postdoctoral position
Who are the postdocs?

- Most in biomedical sciences (67%)
  - 23% Physical Sciences and Engineering
- Most aged 30-35 (58%)
- Most married or partnered (69%)
- Most are visa holders (57%)
- 34% are women
- 34% have children
- On average, earn $38,000/year and work 51hrs/week

DATA SOURCES: NSF Science and Engineering Indicators 2010; NSF Graduate Students and Postdoctorates in Science and Engineering: Fall 2007; Sigma Xi Postdoc Survey (2005): postdoc.sigmaxi.org
More recent Ph.D.s do at least one postdoc

- Graduates in <1972 vs. 2002-2005:
  - All Science & Engineering: 31% → 46%
  - Life Science: 46% → 60%
  - Physical Science: 41% → 61%

**Postdoc Career Path**

*The academic job market has changed dramatically over time*

- Recent Ph.D.s Employed at Academic Institutions:
  - 1979: 42% Full-Time TT Faculty vs. 25% Postdocs
  - 2006: 29% Full-Time TT Faculty vs. 45% Postdocs

Type of Position Expected vs. Actually Obtained (Former Postdocs)

- Tenure-track academic position: Expected 61%, Actual 37%
- Nontenure-track research scientist: Expected 15%, Actual 16%
- Government: Expected 6%, Actual 12%
- Nonprofit research: Expected 3%, Actual 5%
- Industry: Expected 11%, Actual 16%
- Self-employment: Expected 1%, Actual 4%
- Other: Expected 3%, Actual 10%

The Leaky Pipeline of Scientist Women

Figure adapted from Mary Ann Mason, based on study from Goulden, Mason & Frasch 2009, "Staying Competitive Patching America’s Leaky Pipeline in the Sciences."
At every academic career milestone the proportion of women in science and engineering declines. In examining the transition into academic positions, the declines are greatest in fields requiring a period of postdoctoral study. Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering (2007)
The Leaky Pipeline of Scientist Women

Getting First Tenure-Track Job:

- Married women with children 37% less likely than married men with children
- Married women with children 33% less likely than single women without children

Figure & data adapted from Mary Ann Mason, based on study from Goulden, Mason & Frasch 2009, Staying Competitive Patching America’s Leaky Pipeline in the Sciences.
Why do postdoc women leave academia?

• Leading reasons cited appear to be:
  • Challenges related to family formation
    • Children
    • Dual-career partners
    • “Postdoc clock” vs. “Biological clock”
  • Disenfranchisement
    • Feelings of isolation and alienation
    • Lack of encouragement and confidence
    • Perceived lack of status
#1 Reason: Family Formation

- Leading reason for career goal change: Issues related to children\(^1\)
  - For men: career advancement & compensation
  - Postdoc women with new children during postdoc twice as likely to change goal as:
    - postdoc men with new children, and
    - postdoc women with no kids/no plans for kids

DATA SOURCES:[1]Goulden, Mason & Frasch 2009
#1 Reason: Family Formation

- Dual-career concerns
  - Academic women more likely than men to be partnered with another academic\(^1\)
    - More common for scientists, and early-career academics
  - Postdoc women more likely than men to make career concessions for partner\(^2\)

DATA SOURCES:
#1 Reason: Family Formation

- “Postdoc clock” vs. “Biological clock”
  - “Long enough, but short enough”
    - Family needs can cause delays
- Delays can impact:
  - Funding durations
  - Fellowship & grant eligibility
  - CV evaluation
  - Both postdoc and PI/boss
#1 Reason: Family Formation

“\text{You know having a baby during grad school, maybe not the best idea. Having your baby while you’re tenure track, maybe not the best idea. So does that mean that I have to get pregnant right now because my postdoc is 24 months long and that's it?}”

-- NPA ADVANCE Focus Group with current postdoc women


#2: Lack of Confidence & Isolation

- **Lack of Confidence**
  - Less confident they will obtain PI position and tenure, despite feeling their preparation is adequate\(^1\)
  - Lack of encouragement, mentoring and role models\(^2,3\)
    - Especially important for postdoc women of color
- **Feelings of isolation/alienation\(^2\)**

#2: Lack of Confidence & Isolation

- Perceived lack of status
  - Neither student nor faculty
  - More dependent on PI/boss than institution
  - Commonly described as being in a “gray area” or “limbo”

“I'm actually in that uncomfortable position for me, because even in meetings, I don't know how to introduce myself.”

“I was nobody's responsibility any longer really. I was sufficiently grown up and all the practical attention is given mainly to the students and to the faculty members.”

-- NPA ADVANCE Focus Groups with former postdoc women
Other Considerations

- Limited family-friendly benefits for trainees
  - Lack of maternity guidelines
    - Leave often negotiated case-by-case
    - Few institutions offer paid leave to trainees
    - Lack of awareness of unpaid leave protections
      - e.g. Title IX covers pregnancy discrimination
  - No “dual-career” assistance
    - Few incentives to “keep” contingent researchers
Harvard is planning to build kids' nightlife facilities for postdoc couples.
Other Considerations

• “Work, work, work” ethic often precludes professional development
  • Including mentoring

• Low salaries
  • Secondary issue for postdocs
  • Finances linked to: Childcare, mortgages, immigration, dual-career decision-making
Other Considerations

• Greater job market challenges?
  • On average, postdoc women may have fewer publications and have attended fewer conferences than postdoc men.
  • Letters of recommendation may not be as strong as those for men due to unconscious bias.
International Postdocs

- Geographic (i.e., distance from family)
- Visa concerns
- Cultural differences
- Language barriers
- Additional Needs for Career Guidance
  - May have limited networks in the U.S.
  - Less familiarity with U.S.-based funding procedures; fewer opportunities
Navigating The Leaky Pipeline

What can you do to optimize your career choices?
First - the Normal Stuff

• What should you do to get that next job?
  • Do great research
  • Publish great papers
  • Attend great conferences

• What else can you do?
The Job Search Pyramid

Created by Lori Conlan, Ph.D.

- Know Yourself (and your options)
- Credentials
- Network
- CVs
What Else Can You Do?

• Do your homework
  • Choose the best-fitting institution
  • Policies & benefits?
  • Strategies?
• Conduct self-assessment
  • Use NPA Core Competencies: www.nationalpostdoc.org/core-competencies
Know Yourself: NPA Core Competencies

Competencies Needed for Career Success in the 21st Century

- Scientific Knowledge
- Professionalism
- Responsible Conduct of Research
- Research Skill Development
- Management and Leadership Skills
- Communication Skills

www.nationalpostdoc.org/advance
# National Postdoctoral Association (NPA) Core Competencies Self-Assessment Checklist

Rate your current level of development in each of the following, with 1 being "Needs attention" and 9 being "extremely competent."

For more information on these competencies, please visit www.nationalpostdoc.org/competencies.

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What Else Can You Do?

- Make a career plan
  - Include back up plans
  - Think long-term, *esp. if visa involved*
  - IDP can help with this!
    - Individual Development Plan
      - Helps: set milestones, self-assessment, foster mentoring
    - Google *FASEB IDP* for a great template!
What Else Can You Do?

- Find multiple mentors
  - *Doesn’t need to be your PI/boss*
    - Potential conflict of interest?
  - Multiple mentors provide well-rounded advice
- Consider mentoring tools & models:
  - Peer mentoring
  - Group mentoring
  - E-mentoring
- Enhance your network
Dual-Career Concerns?

- Talk with partner *before* applying
  - Willing to commute? Live apart?
  - Discuss possible compromises
- Do your homework about job scenarios
  - Nearby institutions?
  - Shared positions?
  - Soft money or postdoc?
    - Odds of becoming permanent?
- Brush up on your negotiating
  - Partner assistance available?
  - Prepare for when to bring up partner
  - *Negotiate up front*
Taking Maternity Leave?

- Make a maternity research plan
  - Willing to work from home?
  - Hire someone to fill in for you?
    - Often grants can allow this!

- Make a maternity salary plan
  - Paid leave options?
    - Short-term disability? Sick leave? Vacation leave?
    - Many grants allow for paid maternity leave...
  - Unpaid options?
    - This should be an option for you under Title IX

- Discuss in advance with supervisor
- Keep in mind - it’s OK not to work during leave!
For More Information

• NPA ADVANCE:
  www.nationalpostdoc.org/advance
  • Clearinghouse of institutional practices
  • Forthcoming resources:
    • Resource book for institutions on postdoc women
    • A Postdoc’s Guide to Maternity Leave
    • Managing your Postdoc Research during Pregnancy and Maternity Leave
    • Job Search Tips for Postdocs in Dual-Career Couples
Take Aways

- While there are a number of challenges for women in academia, more women than ever before have successful and fulfilling careers there
- Do your homework - your options, yourself
- Find a mentor or mentoring model that works for you
- Make a career plan
Thank you!

- Any questions? Feel free to contact me at kflint AT nationalpostdoc.org
What Can Institutions Do?

- MENTORING
  - Reward mentoring as “core” activity
  - Offer structured programs to encourage multiple mentors
    - Include mentoring training
- PROFESSIONAL & CAREER DEVELOPMENT
  - Negotiating, Networking, Grant Writing, Research & Career Planning, etc.
What Can Institutions Do?

- FAMILY-FRIENDLY POLICIES & BENEFITS
  - Clear guidance on:
    - Maternity/parental leave guidelines
      - Including paid and unpaid options
    - Flexible work arrangements
  - Provide assistance where possible:
    - Childcare services & subsidies
    - Provide postdocs access to dual-career assistance
What Can Institutions Do?

• FAMILY-FRIENDLY POLICIES & BENEFITS
  • Consider “permanently” hiring your own postdocs, which can help “dual-career” geographical constraints.
  • Include postdocs in any institution-wide assessment of climate for women
What Can Funding Agencies Do?

- **CAREER FUNDING**
  - Transition & re-entry support for postdocs
  - Flexibility in defining “early career”
  - Reasonable postdoc salaries

- **FAMILY-FRIENDLY POLICIES & BENEFITS**
  - Continue to clarify how federal funds can be used to support family-friendly issues, e.g.:
    - Supplements for technical assistance during leave
    - Paid maternity leave
    - Support childcare at sponsored conferences
NPA Ongoing Efforts

• To advocate on the institutional, regional, and national levels to enhance the postdoctoral experience.
  • Fair compensation for “domestic” and “international” postdocs
  • Improving benefits for all postdocs
  • Supporting data collection
  • Encourage and facilitate diversity within postdoctoral community

• Some recent successes
  • NIH’s NRSA stipend increases
  • Follow-up study to be done by COSEPUP
Reasons for career goal change: PhD Women

- Leading reasons: work-life balance (4 of top 5)
  - Other life interests
  - Prof activities too time consuming
  - Negative experience as PhD student
  - Issues related to children**
  - Geographic location issues**

- **Only women include children and geographic location in top five

- Ph.D. women twice as likely as men to cite children as important reason

- Lack of interest in “academic” lifestyle
For More Information

- Federal Funding Guidance