DO BABIES MATTER IN STEM?

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PRESENTATION NAS, SEPTEMBER 9
University of California, Berkeley
(2002)
Women as a Percent of Doctorial Recipients in the Sciences

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</thead>
<tbody>
<tr>
<td>Engineering Physical Sc.</td>
<td>0%</td>
<td>10%</td>
<td>20%</td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td>Geoscience Pyschology</td>
<td>0%</td>
<td>5%</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>Life Sciences Social Sc.</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
</tr>
<tr>
<td>Math/Comp. Science</td>
<td>0%</td>
<td>5%</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
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Source: National Science Foundation (NSF), Survey of Earned Doctorates, retrieved from WebCaspar, 4/15/2009.
What Happens to Men and Women After They Get Their PhDs?

How Does Having Babies Affect Tenure?
Survey of Doctorate Recipients (SDR)

1973 — Present

over 160,000 participants

national biennial longitudinal data set
Who Gets Tenure in Science?

**Early Babies**
- Tenured Professors: 53%
- Second Tier: 47%
- Early Babies, N=13058

**Late or No Babies**
- Tenured Professors: 65%
- Second Tier: 35%
- Late or No Babies, N=3057

**Total**
- Tenured Professors: 77%
- Second Tier: 23%

Note: The use of NSF Data does not imply the endorsement of research methods or conclusions contained in this report.
Leaks in the Pipeline to Tenure for Women PhDs in the Sciences

- **PhD Receipt**
  - Married Fathers
  - Single Women
  - Married Mothers

- **Entering Tenure Track Position**
  - Married Mothers: 35% lower odds than married fathers to get a tenure-track position

- **Achieving Tenure**
  - Married Mothers: 27% lower odds than married fathers with young children to become tenured

Single Women: Single women without children do almost the same as married fathers.
Married Mothers are 35% less likely to enter tenure track jobs
Married Mothers are 27% less likely to achieve tenure
What is the Cost Career on Family Formation?
Women are far less likely to be married with children than are men. 53% vs. 73%
Family Status of Tenured Faculty in the Sciences

- **Married Fathers**: 73%
- **Single Fathers**: 4%
- **Married Mothers**: 53%
- **Single Mothers**: 8%
- **Single w/o Children**: 25%
- **Married w/o Children**: 14%
- **Married w/o Children**: 9%
- **Married w/o Children**: 15%

**Women**
N=3,109

**Men**
N=19,074

Note: The use of NSF Data does not imply the endorsement of research methods or conclusions contained in this report.
“Postdocs perform a substantial fraction of the skilled work in research labs and are responsible for a disproportionate share of new discoveries. A 1999 study found that 43% of first authors of research articles in Science were postdocs.”

→ Geoff Davis, author of the Sigma XI Postdoctoral Survey

Most postdoctoral positions are limited term

- Position frequently capped, 5 yrs total.
- Postdoctoral scholars considered trainees, not employees.
- Retirement benefits and other benefits are typically limited.

Mothers Often Make Their Decisions Earlier

Twice as many women then men are likely to change their career goal away from being a research professor when they have babies as post docs.
Career Goal at PhD Start and Current Career Goal by Years out from PhD Start: All UC Women PhD Respondents

Changing Career Goals

CAREER GOAL AT START OF PhD  CURRENT GOAL

Professor (Research)  58%  Professor (Research)  45%

Professor (Teach)  15%  Professor (Teach)  11%

Business, Gov, Other  28%  Business, Gov, Other  28%

Other Academic  3%  Other Academic  3%

Shifting Goal away from Professor with Research Emphasis

I want to be able to have a family, have children and enjoy being a mother and wife which are close to impossible when one chooses academia. The clock is ticking and it does not stop for anything or anyone.”

“Fed up with narrow-mindedness of supposedly intelligent people who are largely workaholic and expect others to be so as well.”

Selected Quality-of-Life Related Explanations by UCB Men & Women Doctoral Students

Everybody is Very Busy (UC Faculty, ages 30-50)

<table>
<thead>
<tr>
<th>Total Hours per Week</th>
<th>Professional</th>
<th>Housework</th>
<th>Caregiving</th>
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<tbody>
<tr>
<td>Women with Children</td>
<td>51.2</td>
<td>14.6</td>
<td>35.5</td>
</tr>
<tr>
<td>Men with Children</td>
<td>55.6</td>
<td>20.3</td>
<td>20.3</td>
</tr>
<tr>
<td>Women without Children</td>
<td>59.8</td>
<td>8.1</td>
<td>8.1</td>
</tr>
<tr>
<td>Men without Children</td>
<td>59.1</td>
<td>8.6</td>
<td>8.6</td>
</tr>
</tbody>
</table>

N=338                                      701                                      248                                      505
Everybody is Busy (UC Postdoctoral Scholars)

Workplace Strategies to Stay on the Fast Track

Leaves
- Paid maternal leave
- Parental leave for fathers and mothers
- Centralized funding for maternity and parental leaves
- Family Leave (up to a year) at any time to accommodate family illness

Part-Time Track
- Part Time Track: Up to Five years with right of return to full-time

Stop-the-Clock for Promotions
- Stop-the-Clock policy for mothers, triggered automatically
- Stop-the-Clock policy for fathers, triggered automatically

Childcare
- Childcare center, with spaces for infants
- Secure childcare positions for recruitment purposes
- Offer dependent care travel grants
- Emergency childcare

Miscellaneous: Adoption expenses, Lactation rooms
Best Practices

• Paid maternal disability leave (at least six weeks)

• Parental leave
  (For those fathers responsible for at least half of caregiving)

• Stop the Clock (for deadlines, time to completion, grants, etc. for mothers (and eligible fathers))
Best Practices

CHILDCARE

• Childcare center, with space for infants
• Offer subsidised dependent care travel grant
• Emergency childcare
Provision of PAID MATERNITY LEAVE for Academic Populations at Association of American Universities (AAU)

Entitlement to at least 6 weeks of paid leave.

Provision of PAID PARENTAL LEAVE for Academic Populations at Association of American Universities (AAU)

Entitlement to at least 1 week of paid leave.

SUPPLEMENTS

✓ Provide federal Agency or University supplements to offset family event productivity loss and help PIs.

Offer time flexibility in all grants and fellowships to accommodate childbirth.

RE-ENTRY POSTDOCS

✓ To Accommodate Time taking for Family Leave

Family Friendly Polices

✓ Collaboratively move toward a full package of baseline family friendly practices

Include graduate students postdoctoral fellows in all family friendly policies.
National Science Foundation

Initiatives

- Allow postponement for one year of grants because of childbirth or adoption.
- Allow grant suspension for parental leave.
- Provide supplementary funds to cover the cost of hiring research technicians to maintain laboratories when grant recipients are on family leave.
- Permit those serving on peer review panels to meet with their colleagues virtually, rather than in person, to reduce child-care needs created by travel.
- Fund more research on the effectiveness of policies that are designed to keep women in the science pipeline.
Title IX and STEM Fields

“If we’re going to out-innovate and out-educate the rest of the world, we’ve got to open doors for everyone. We need all hands on deck, and that means clearing hurdles for women and girls as they navigate careers in science, technology, engineering, and math.”

-- First Lady Michelle Obama, September 26, 2011
Pregnancy Discrimination

“A recipient shall not discriminate against any student, or exclude any student from its education program or activity, including an class or extra curricular activity, on the basis of such student’s pregnancy childbirth, false pregnancy, termination of a pregnancy or recovery there from.”

1) Education program or Activity
2) Employment
3) Medical Coverage
# of Children born to UC Berkeley Assistant Professors

**Seth 2003**

- **No Children**: 61% (N=58)
- **1 Child**: 17% (12%)
- **2 Children**: 12%
- **3+ Children**: 10%

**Seth 2009**

- **No Children**: 41% (N=70)
- **1 Child**: 27% (20%)
- **2 Children**: 29%
- **3+ Children**: 3%

Sources: “UC Berkeley Faculty Climate Survey,” 2003; “UC Berkeley Faculty Climate Survey,” 2009.
DO BABIES MATTER?

GENDER AND FAMILY IN THE IVORY TOWER

Mary Ann Mason • Nicholas H. Wolfinger
Marc Goulden
Once I got pregnant I felt that my advisor no longer considered me a serious scientist. He gave me easy, not very important projects and spent much less time with me.

~ Women Biology Graduate Student — UC campus

Level the Playing Field Workshops

- Do Babies Matter? I, II, II
- It’s Cheaper to Keep Her
- Best Practices for Family Friendly Policies
- Double Jeopardy?: How Gender Bias Differs by Race
- What Works for Women at Work
- Some Things are Illegal

It’s Cheaper to Keep Her Simulator

Developed by UC Berkeley economists, allows your department or institution to perform a cost/benefit analysis on the presence or absence of family friendly policies, based on the characteristics of the faculty in your own institution or department.

Facilitator’s Guides

Complete training guides are available for groups to facilitate their own training sessions using the videos, and additional materials available through our website.

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