DO BABIES MATTER?
The New Norm of Flexibility In Science and Engineering

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University of California, Berkeley

ISU October 10, 2008
PhD Recipients from U.S. Universities (U.S. Citizens only)

Women, White/Other  Women, Asian  Women, URM
Men, URM  Men, Asian  Men, White/Other

Source: NSF, Survey of Earned Doctorates, taken from Webcaspar.

Do Babies Matter project funded by the Alfred P. Sloan Foundation.
Mary Ann Mason, UC Berkeley; Marc Goulden, UC Berkeley; Nick Wolfinger, University of Utah
Large San Francisco Law Firm

Women

Shareholder Partners
51

Part-time
14

Associates
155

Men

Shareholder Partners
217

Part-time
2

Associates
195
Survey of Doctorate Recipients (SDR)

- A national biennial longitudinal data set of PhD recipients’ post-degree employment experiences funded by the NSF and others, 1973 to present (NEH funded the Humanities, 1977-1995).

- Includes a ~10% sub-sample of PhD recipients drawn from the Survey of Earned Doctorates (SED) each year -- and individuals are resurveyed until they reach age 76, leave the country, or refuse to participate (over 160,000 individuals have participated).

- Response data is weighted based on sampling design and re-weighted each survey cycle, based on attrition (e.g. gender, ethnicity) to reflect US PhD population.

- Starting in 1979 and 1981, respondents were asked about their marital status (1979) and the number of children (1981) living in their household (under 6, 6-18, etc.).

- Arguably the best employment dataset in the country.
Heads and Necks of Science PhD Recipients*

Women, Early Babies
- 53% Tenured Professors
- 47% Second Tier

Women, Late or No Babies
- 65% Tenured Professors
- 35% Second Tier

Men, Early Babies
- 77% Tenured Professors
- 23% Second Tier

*PhDs from 1978-1984 Who Are Working in Academia 12 to 14 Years Out from PhD

Note: The use of NSF Data does not imply the endorsement of research methods or conclusions contained in this report.
Heads and Necks of Humanities and Social Science PhDs*

**Tenured Professors**

- Women, Early Babies: 58%
- Women, Late or No Babies: 71%
- Men, Early Babies: 78%

**Second Tier**

- Part-Time, 2-Year Faculty, Non-Ten. Track, Acad. Researchers, and Still Tenure Track
  - Women, Early Babies: 42%
  - Women, Late or No Babies: 29%
  - Men, Early Babies: 22%

*PhDs from 1978-1984 Who Are Working in Academia 12 to 14 Years Out from PhD


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

Women PhDs Water Level

Graduate School Entry

PhD Receipt

Assistant Professor (Tenure Track)

Associate Professor (Tenured)

Full Professor (Tenured)

Women with Babies (28% less likely than women without babies to enter a tenure-track position)

Women, Married (21% less likely than single women to enter a tenure-track position)

Women (27% less likely than men to become an Associate Professor)

Women (20% less likely than men to become a Full Professor within a maximum of 16 years)

Leak!! Leak!! Leak!! Leak!!

* Preliminary results based on Survival Analysis of the Survey of Doctorate Recipients (a national biennial longitudinal data set funded by the National Science Foundation and others, 1979 to 1995). Percentages take into account disciplinary, age, ethnicity, PhD calendar year, time-to-PhD degree, and National Research Council academic reputation rankings of PhD program effects. For each event (PhD to TT job procurement, or Associate to Full Professor), data is limited to a maximum of 16 years. The waterline is an artistic rendering of the statistical effects of family and gender.
Career Goal at Start of PhD

Men
- Prof (resrch): 51%
- Prof (teach): 18%
- Bus., Gov., Other: 30%
- Other Acad.: 1%

Women
- Prof (resrch): 46%
- Prof (teach): 27%
- Bus., Gov., Other: 24%
- Other Acad.: 3%

Current Goal

Men
- Prof (resrch): 41%
- Prof (teach): 17%
- Bus., Gov., Other: 39%
- Other Acad.: 3%

Women
- Prof (resrch): 31%
- Prof (teach): 27%
- Bus., Gov., Other: 38%
- Other Acad.: 4%

Changing Career Goals
N=986

Figure 4: Changing Career Goals

Career Goal at Start of PhD

Men

- Prof. (rsrch)*: 59%
- Prof. (teach): 11%
- Other Acad.: 3%
- Bus., Gov., Other: 27%

N=62

Current Goal

- Prof. (rsrch)*: 45%
- Prof. (teach): 15%
- Other Acad.: 9%
- Bus., Gov., Other: 27%

N=62

Women

- Prof. (rsrch)*: 46%
- Prof. (teach): 18%
- Other Acad.: 9%
- Bus., Gov., Other: 27%

N=45

Current Goal

- Prof. (rsrch)*: 11%
- Prof. (teach): 27%
- Other Acad.: 16%
- Bus., Gov., Other: 46%

N=45


*Professor w. Research Emphasis
### Shifting Career Goal away from Professor with Research Emphasis

#### % Citing Factor As “Very Important*” in Career Goal Shift

<table>
<thead>
<tr>
<th>#</th>
<th>Category</th>
<th>Women (%)</th>
<th>Men (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Other life interests</td>
<td>48%</td>
<td>35%</td>
</tr>
<tr>
<td>2</td>
<td>Issues related to children</td>
<td>46%</td>
<td>21%</td>
</tr>
<tr>
<td>3</td>
<td>Negative experience as PhD student</td>
<td>46%</td>
<td>44%</td>
</tr>
<tr>
<td>4</td>
<td>Professional activity too time consuming</td>
<td>45%</td>
<td>35%</td>
</tr>
<tr>
<td>5</td>
<td>Geographic location Issues</td>
<td>40%</td>
<td>28%</td>
</tr>
<tr>
<td>6</td>
<td>Feelings of isolation/ alienation as PhD student</td>
<td>35%</td>
<td>31%</td>
</tr>
<tr>
<td>7</td>
<td>Spouse/ partner issues or desire to marry</td>
<td>32%</td>
<td>22%</td>
</tr>
<tr>
<td>8</td>
<td>Bad job market</td>
<td>30%</td>
<td>29%</td>
</tr>
<tr>
<td>9</td>
<td>Job security</td>
<td>29%</td>
<td>29%</td>
</tr>
<tr>
<td>10</td>
<td>Career advancement issues</td>
<td>27%</td>
<td>34%</td>
</tr>
<tr>
<td>11</td>
<td>Other career interests</td>
<td>27%</td>
<td>23%</td>
</tr>
<tr>
<td>12</td>
<td>Monetary compensation (e.g. salary, benefits)</td>
<td>23%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Shifting Goal away from Professor with Research Emphasis: Selected Quality-of-Life Related Explanations by UCB Men & Women Doctoral Students

- “I feel unwilling to sacrifice a healthy family life and satisfying personal life to succeed in academics, and thus industrial options have become more appealing.”
- “Fed up with narrow-mindedness of supposedly intelligent people who are largely workaholic and expect others to be so as well.”
- “I look at the lives of the professors I see every day, and I want to emulate none of them.”
- “I really want to be a mom. This seems like an extremely difficult goal to align with the goal of being a faculty member at a top university in engineering.”
- “Since beginning my doctoral work, I have become convinced that very few, if any, female professors are able to have stable, fulfilling family lives of the sort that I wish for (a stable marriage and children).”
- “Academia is not very supportive of women. There are challenges at every step of the way in terms of having to make choices. 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.”

Percentage of UCB Postdocs Who Indicated a Career Goal Shift Away from Academia*


*Among all survey participants.
Average Number of Hours Worked Each Week as a Postdoc

No Presentations at Conferences in the Last Year

Women Postdocs

Men Postdocs

Married with Children

Married without Children

Single without Children

"Very Satisfied" or "Satisfied" with Quality of Guidance Received from Postdoc Sponsor*

<table>
<thead>
<tr>
<th>Status</th>
<th>Women Postdocs</th>
<th>Men Postdocs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married with Children</td>
<td>60%</td>
<td>81%</td>
</tr>
<tr>
<td>Married without Children</td>
<td>76%</td>
<td>81%</td>
</tr>
<tr>
<td>Single without Children</td>
<td>66%</td>
<td>86%</td>
</tr>
</tbody>
</table>

*“Do Not Know” excluded.

The Pool Problem at UC Berkeley: Ladder Rank Faculty

*Data prepared by Angelica Stacy, Associate Vice Provost for Faculty Equity, UCB. Potential UCB Applicant Pool is derived from NCES data on PhD degrees granted in 2000, cut to a selected group of top-ranked graduate institutions and cut to relevant disciplinary fields for UCB.
Major Findings: Family → Career

- Overall, men with “early babies” are 38% more likely than women with “early babies” to achieve tenure.
- Women with “early babies” leave academia before obtaining their first tenure track job.
- Single mothers are more successful than married mothers.
- Women with “late babies” do as well as women without children.
- Having no babies at all is the dominant success mode for women.
- Men who have “early babies” do very well. In fact, they do better than all others, including single men and women.
- A high percentage of mothers slide into the second tier, the part-time, adjunct and lecturer corps: the “gypsy scholars” of the university world.
- Many women change their career course in graduate school or as postdocs because of family concerns.
Family Status of Tenured Faculty, All Fields*

Women

- Married with Children**: 44%
- Married without Children: 19%
- Single with Children**: 11%
- Single without Children: 26%

N=10,652

Men

- Married with Children**: 70%
- Married without Children: 15%
- Single with Children**: 11%
- Single without Children: 4%

N=32,234

*PhDs from 1978-1984 Who Are Tenured 12 Years out from PhD.
**Had a child in the household at any point post PhD to 12 years out.

Note: The use of NSF Data does not imply the endorsement of research methods or conclusions contained in this report.
Family Status of Tenured Faculty in the Sciences*

**PhDs from 1978-1984 Who Are Tenured 12 Years out from PhD in STEM & Bio. Sciences.**

**Had a child in the household at any point post PhD to 12 years out.**


Note: The use of NSF Data does not imply the endorsement of research methods or conclusions contained in this report.
Getting Divorced after the First SDR*

Ladder-Rank Women  Ladder-Rank Men  Second-Tier Women**

*For individuals who were married at first post-PhD SDR survey. PhD recipients 1978-1992.

**Non-Tenure Track, Part Time, or Not Working.

Note: The use of NSF Data does not imply the endorsement of research methods or conclusions contained in this report.
Women Fast-Track Professionals with Babies* in the Household, by Age of Professional

*Children, Ages 0 or 1 in Household.

Source: Census 2000, Pums 5% sample.
Major Findings: Career ➔ Family

- Only one in three women without children who takes a fast-track university job ever become mothers.

- **Women** who achieve tenure are far more likely than men who achieve tenure to be single 12 years out from the PhD — more than twice as likely.

- If married, women are significantly more likely than men to experience divorce or separation.

- **Women** faculty were more than twice as likely as men faculty to indicate they wished they could have had more children — a full 38% of women said so in comparison to 18% of men.
UC Work and Family Survey: History and Response Rates

- Designed to assess the effectiveness of UC’s existing family friendly policies (as of July 1988) for ladder-rank faculty.
- UC Berkeley surveyed in Fall 2002. All other (except Merced) campuses surveyed in Spring-Summer 2003.

<table>
<thead>
<tr>
<th>UC campus</th>
<th># Responses</th>
<th># Surveyed</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berkeley</td>
<td>743</td>
<td>1,351</td>
<td>55%</td>
</tr>
<tr>
<td>Davis</td>
<td>820</td>
<td>1,385</td>
<td>59%</td>
</tr>
<tr>
<td>Irvine</td>
<td>445</td>
<td>910</td>
<td>49%</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>788</td>
<td>1,758</td>
<td>45%</td>
</tr>
<tr>
<td>Riverside</td>
<td>367</td>
<td>663</td>
<td>55%</td>
</tr>
<tr>
<td>San Diego</td>
<td>472</td>
<td>998</td>
<td>47%</td>
</tr>
<tr>
<td>San Francisco</td>
<td>188</td>
<td>357</td>
<td>53%</td>
</tr>
<tr>
<td>Santa Barbara</td>
<td>374</td>
<td>802</td>
<td>47%</td>
</tr>
<tr>
<td>Santa Cruz</td>
<td>262</td>
<td>481</td>
<td>54%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,459</strong></td>
<td><strong>8,705</strong></td>
<td><strong>51%</strong></td>
</tr>
</tbody>
</table>
Everybody is Very Busy
(UC Faculty, All Fields)

<table>
<thead>
<tr>
<th>Professional</th>
<th>Housework</th>
<th>Caregiving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women with Children</td>
<td>53.3</td>
<td>14.3</td>
</tr>
<tr>
<td>Men with Children</td>
<td>15.1</td>
<td>11.6</td>
</tr>
<tr>
<td>Women without Children</td>
<td>9.1</td>
<td>11.7</td>
</tr>
<tr>
<td>Men without Children</td>
<td>8.1</td>
<td>10.3</td>
</tr>
</tbody>
</table>

Total Hours per Week

Everybody is Very Busy
*(UC Faculty in the Sciences)*

The bar chart shows the total hours per week spent on professional, housework, and caregiving activities by women and men with and without children.

- **Women with Children:**
  - Professional: 53.7 hours
  - Housework: 14.5 hours
  - Caregiving: 27.1 hours
  - Total: 95.3 hours

- **Men with Children:**
  - Professional: 56.2 hours
  - Housework: 11.1 hours
  - Caregiving: 14.7 hours
  - Total: 82.0 hours

- **Women without Children:**
  - Professional: 62.3 hours
  - Housework: 11.3 hours
  - Caregiving: 7.5 hours
  - Total: 81.1 hours

- **Men without Children:**
  - Professional: 58.9 hours
  - Housework: 9.8 hours
  - Caregiving: 7.9 hours
  - Total: 77.6 hours

UC Faculty's Average Hours Per Week Providing Care by Gender, Children, and Age at Survey

Women with Children
Men with Children
Women without Children
Men without Children

Weekly Hours Providing Care

Age at Survey

Women w. Children, N=671
Men w. Children, N=1796
Women w/o Children, N=485
Men w/o Children, N=1108

The Baby Lag for UC Women Faculty in Pursuit of Tenure, All Fields

Percent of Faculty with New Babies Entering the Household

Years Before and After Assistant Professor Hire Date

N=2339 Men
982 Women

*Year 0 represents Assistant Professor Hire Date

The Baby Lag for UC Women Faculty in Pursuit of Tenure in the Sciences*


Years Before and After Assistant Professor Hire Date

N=1164 Men
265 Women

**Year 0 represents Assistant Professor Hire Date

Major Reasons Eligible UC Parents Did Not Use ASMD (Active Service Modified Duties)

Women | Men
--- | ---

- "I was not the primary caregiver to the child"  
  - Women: 1%
  - Men: 20%
- "I did not need the time"  
  - Women: 10%
  - Men: 27%
- "I did not know about the policy"  
  - Women: 46%
  - Men: 48%
- "It might have hurt my chances for tenure or promotion"  
  - Women: 26%
  - Men: 51%

Percent Citing Factor As a Major Reason for Not Using ASMD


Please note: these questions were based on Robert Drago’s Mapping Project Survey Instrument ([http://lsir.la.psu.edu/workfam/facultysurvey.htm](http://lsir.la.psu.edu/workfam/facultysurvey.htm)).
New Family Friendly Initiatives for UC Berkeley Ladder-Rank Faculty

- **Active Service-Modified Duties (ASMD)** — Provides teaching relief for parents with “substantial” caregiving responsibilities for a newborn or new adoptee: two semesters/quarters for birth mothers. Funded centrally to defray the cost to departments. *An entitlement.*

- **Tenure-Clock Stoppage** — Adds one year extension to the tenure clock for tenure-track faculty parents with “substantial” caregiving responsibilities for a newborn or new adoptee (one year per birth/adoption event, with a two-year cap). *An entitlement.*

- **Flexible Part-time Option** — To allow tenure-track faculty, pre- and post-tenure, to go from full- to part-time as life needs arise (i.e. caregiving responsibilities). Would encourages departments to take into account part-time status in advancement decisions. *Under review.*

- **School for Chairs** — Promotes the use of family friendly policies, resources and benefits. *Soon to be launched.*
Legal case examples
- In a tenure-denial lawsuit involving a reported tentative settlement of $495,000, the provost at the University of Oregon allegedly told another professor that the mother’s decision to “stop the clock” was a “red flag;” the department chair also wrote in a memo that she “knew as a mother of two infants, she had responsibilities that were incompatible with those of a full-time academician.” [ref: Joan C. Williams, 2004. “Hitting the Maternal Wall,” Academe, 90(6)8-12.]

Faculty quotes about negative responses from chairs to requests for family accommodations
- “I want to emphasize that the greatest source of work-related stress in relation to having a child has been the hostility and recalcitrance of my chair who announced that he thought of ASMD as a ‘special privilege’ and who fought it all the way.” – Female faculty member
Graduate Student Parent Resources at UC Berkeley

New Initiatives

• Paid Childbirth Leave (approved February 2007)
• Expanded infant/toddler/preschool slots in a new Child Development Center (opened January 2007)
• UC Families: an online newsletter and resource for students, staff, and faculty at all UC campuses who seek to balance academic goals or careers with family life. See http://parents.berkeley.edu/ucfamilies
• ‘Stopping the Clock’: Extensions to academic milestones (preliminary exams, qualifying exams, Normative Time completion)

Continuing Initiatives

• Family Student Housing (two large complexes)
• Children’s Center & Family Resource Center (located in Family Housing)
• Student Parent Center (located in Student Center)
• Breastfeeding Support Program (Student Health Center & campus locations)
• Graduate Student Parent Grant (funded by Graduate Division, administered by Financial Aid Office)
AAU Survey (preliminary finding): Which of the following best describes your institution's policy regarding paid maternity leave for (1) graduate student researchers, (2) postdoctoral scholars, (3) academic researchers (non-faculty), and (4) faculty who bear a child?

<table>
<thead>
<tr>
<th>Group</th>
<th>Percent</th>
<th>Total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grad. Stud. Researchers</td>
<td>23%</td>
<td>44 inst.</td>
</tr>
<tr>
<td>Postdoctoral Fellows</td>
<td>36%</td>
<td>45</td>
</tr>
<tr>
<td>Academic Researchers</td>
<td>55%</td>
<td>40</td>
</tr>
<tr>
<td>Faculty</td>
<td>65%</td>
<td>43</td>
</tr>
</tbody>
</table>

A written policy exists that entitles individuals who bear a child to paid maternity leave (vs. all other responses)
CURRENT MODEL AND ASSUMPTIONS

Academia is typically either a full-time or no-time pursuit, particularly for those on fellowships or grants.

The appropriate career trajectory for successful academics is linear and without breaks – from doctoral years, to postdoctoral, to pre-tenure, and full professor ranks.

Academic “stars” move through the ranks very quickly.

There is no good time to have children.

Having children, particularly for women, is often equated with less seriousness and drive in academia.

NEW MODEL AND ASSUMPTIONS

Men and women can shift to part-time status or temporarily elongate timelines over their life course without penalty.

Many men and women will want or need to temporarily take time out from their academic life for caregiving – for children or other dependents – re-entry is supported.

Academic “stars” are those who produce the most important or relevant work – faster is not necessarily better.

Throughout the career path any time is fine to have children because there is a full array of resources to support academics.

There is no stigma associated with having children, nor negative career consequences, and the culture is broadly supportive of academics who do.
The UC Faculty Family Friendly Edge: turning a problem into UC's competitive advantage

The UC Faculty Family Friendly Edge is an initiative designed to develop and implement a comprehensive package of innovative work-family policies and programs for ladder-rank faculty in the UC system. The Faculty Family Friendly Edge will promote the recruitment and retention of the best and the brightest, help all members of the university community achieve their fullest potential as scholars and teachers, and greatly contribute to the continued excellence of the University of California.

> Learn More about the UC Faculty Family Friendly Edge
> Download a Copy of the UC Faculty Work and Family Survey Presentation (PPT)
> Download a Copy of the UC Faculty Work and Family Survey

Major Initiatives

The UC Faculty Family Friendly Edge includes policies, programs, services and benefits to support faculty and their families... all types of families. These options and programs are continuously under improvement and expansion. Here are some examples:

- Up to one semester reduced duties (ASMD active service-modified duties) for new parents with substantial care-giving responsibilities.
- Stopping the tenure clock to allow time for care of a newborn or newly adopted child under five.
- A flexible part-time option for ladder-rank faculty with substantial familial caregiving responsibilities.
- Parental leave (unpaid) for up to one year to care for a child (including a child of either spouse or domestic partner).
- One year unpaid leave to care for self or a sick relative.

What’s New?

> Academe Do Babies Matter II article by Mason & Gouden
PDF with figures
> Annals Marriage and Baby Blues article by Mason & Gouden
> Chronicle of Higher Education reports on UC Faculty Friendly Edge Project
> Chronicle of Higher Education holds online colloquy with Mary Ann Mason, How Babies Alter Careers for Academics
> UC Faculty Work and Family Survey Presentation (PPT)
> Academe Do Babies Matter article by Mason & Gouden PDF with figures
> An Advisory Committee to UC Faculty Friendly Edge is Named (DOC)

What’s Happening @ Local Campuses:

UC President
Robert C. Dynes
(1/27/2004)

"I am pleased to carry on the important work initiated by President Atkins to promote gender equity and to develop more family friendly policies for ladder-rank faculty."
In the past few decades the number of women entering graduate schools has been skyrocketing, while the number of women reaching the top rung of the corporate and academic worlds has remained relatively stagnant. Why are so many women falling off the fast track?

In this timely book, Mary Ann Mason traces the career paths of the first generation of ambitious women who started careers in science, academia, law, medicine, business, and the media in large numbers in the 1970s and ‘80s. …

Along with her daughter, an aspiring journalist, Mason has written a guide for young women who are facing the tough decision of when -- and if -- to start a family. It is also a guide for older women seeking a second chance to break through to the next level, as Mason herself did in academia. …

The result is a roadmap of new choices for women facing the sobering question of how to balance a successful career with family.

Read more at

http://www.grad.berkeley.edu/deans/mason/index.shtml