Mid Career and Beyond in Academia

Grant Amount Requested: $40,000

Database of Interest: Survey of Doctorate Recipients, 1981-1995

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PROJECT SUMMARY

Mid Career and Beyond in Academia

There is considerable research on the gender gap among higher education faculty, but few scholars have followed individual Ph.D. recipients over time to document the extent of the problem. Analysis of the Survey of Doctorate Recipients (SDR), 1981-1995 will be conducted to expand the PI's research on dual-career issues in academia to mid- and late-career outcomes. In particular, the PI and his collaborator, Marc Goulden, will study how gender, marital status, and the presence of children affect academic salaries and retirement timing.

In the last six years, the PI in collaboration with Mary Ann Mason and Marc Goulden (both of the University of California, Berkeley) has conducted extensive research on gender differences in academia using the SDR. In studies funded by the Association for Institutional Research and the Sloan Foundation, they have found that married women and women with young children suffer significant disadvantage compared to men in obtaining tenure-track jobs. They also showed that women, particularly those with families, disproportionately take adjunct positions in lieu of tenure-track jobs. Family formation does not explain the lower rate at which women gain tenure and promotion to the rank of full professor (Mason & Goulden, 2002; Mason, Goulden, & Wolfinger, 2006; Wolfinger, Mason, & Goulden, 2008, forthcoming).

The PI is applying to the Association for Institutional Researchers for funding to collaborate with Marc Goulden on new research using the SDR. They plan to extend their earlier work to two outcomes they did not previously consider, faculty salaries and retirement timing. Multivariate analysis will be employed to determine how faculty sex and family characteristics affect how much money faculty make and when professors choose to retire. Specific research questions include:

- Earlier studies have explained gender imbalances in faculty salaries on the basis of inequities in academic rank: women are less likely than men to be tenured, and more likely to be adjunct faculty. Multivariate analysis will be employed to adjust for differences in rank, job type, and other factors that may account for women's lower salaries.

- Does the presence of spouses and/or children in the household affect male and female wages differently?

- Are sex differences in faculty salaries the same across academic disciplines?

- Does being single delay retirement more for female academics than for men?

- Do women retire sooner because their salaries are lower?

- Do hours worked and research productivity decline prior to retirement? Do these patterns differ by sex?

This research will lead to two papers intended for publication in professional journals. The PI and his collaborators also plan to combine this work with their earlier research on faculty careers in a monograph on gender, family formation, and professional outcomes across the academic life course. The planned research will provide administrators and faculty with new results to guide policies related to family and career in academia.

This research will be innovative in several way:

- Data from multiple years of the SDR will be combined in order to track Ph.D. recipients over time.

- Proper multivariate analyses for longitudinal data will be employed, notably fixed-effects regression, growth curves, and event history analysis.

- Academics in the social sciences and the humanities will be considered in addition to bench scientists.

- Academics at smaller universities and colleges will be considered, not just faculty at Carnegie Research I schools.

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1. PROJECT DESCRIPTION

1.A. Statement of problem and variables

Women have traditionally lagged far behind men in the workplace. In few places has this been more apparent than in higher education (Jacobs, 1996). In 1977, less than one out of four tenured or tenure-track faculty members was female (Benjamin, n.d.). Although women have made significant inroads into the professoriate in the last 25 years, they are still underrepresented. In 2003, women received 47% of Ph.D.s awarded (National Center for Education Statistics, 2005a) but comprised only 35% of tenured or tenure-track faculty (National Center for Education Statistics, 2005b). The gender gap widens incrementally higher up on the academic career ladder. Among full-time faculty members, 48% of women are tenured, compared to 68% of men (Bellas, 2001). More striking, just 26% of full professors are female (American Association of University Professors, 2001). In light of these imbalances, concerns regarding Title IX, which prohibits sex-based exclusion from educational programs or activities receiving federal funds, have prompted congressional calls for inquiry (Wyden, 2003).

There are two theories why women professors are underrepresented in academia. The first focuses on pervasive inequality that bars women at every step of the way to top positions in academia and other institutions. Evidence in support of this theory can be gleaned from two widely publicized events. First, a study of M.I.T. faculty documented how even the most successful women scientists at M.I.T. systematically received different and inferior treatment (Hopkins, 1999). More recently, in a published address former Harvard President Lawrence Summers (2005) suggested that biological differences might be a factor accounting for the paucity of female faculty members at his institution. His remarks produced widespread backlash and extensive media fanfare and have been construed as evidence that some highly placed academics still harbor retrograde attitudes towards women (*New York Times*, 2005). Thus women are kept in subordinate positions by "a thousand paper cuts," both large and small (Valian, 1998). In this theoretical framework family issues may be blamed for the animus towards women in academia, but do not directly affect women's ability to perform professionally.

A second theory attributes the paucity of female professors to the inflexible nature of the American workplace, configured around a male career model established in the nineteenth century, that forces women to choose between work and family (Crittenden, 2002; Hochschild, 1989, 1997; Mason, 2000; Williams, 2000). Rather

than the thousand paper cuts, women with spouses and children are forced to work less or entirely forsake high-level professions such as academia.

Gary Becker (1991) postulates a direct conflict between the resources needed to perform both professional and home duties. Women have less time to devote to their careers when their domestic responsibilities increase to accommodate spouses and children. Family formation almost invariably entails far more housework and other domestic chores. It has often been shown that women do much more household labor than men (e.g., Hochschild, 1989; Press & Townsley, 1998; Shelton & John, 1996). It is also well established that work-family conflict has become commonplace in contemporary America (see Allen et al., 2000 for a review). Research confirms that this conflict extends to academics (Gatta & Roos, 2002), with female professors spending more time on domestic chores than their male counterparts (Suitor, Mecom, & Feld, 2001). This may interfere with women's ability to conduct the research and teaching necessary for successful advancement in academia.

We have used nationally representative panel data from the 1981-1995 Survey of Doctorate Recipients (SDR) to test the two theories by examining the role of family obligations, particularly marriage and children, in accounting for the professional outcomes of Ph.D. recipients (Mason & Goulden, 2002, 2004; Mason, Goulden, & Wolfinger, 2006; Wolfinger, Mason, & Goulden, 2008, forthcoming). It has long been known that women fare worse on the academic job market than do men. Our study is the first to provide a firm answer as to why this is the case: Marital status and the presence of children under six account for the gender difference in obtaining tenure-track positions. *In fact, a single woman with no children under six is 16% more likely to get a ladder-rank academic position than is a single and childless man*.

Having established why women are less likely to get tenure-track jobs, we next examined where they go instead. SDR data indicate that woman doctorate recipients are disproportionately likely to take adjunct professorships or exit the labor force, especially if they have young children. *Contrary to conventional wisdom, academic positions off the tenure-track provide the best opportunity for getting a tenure-track job down the road.* These findings—and more generally, the presence of women in academia—led us to a new theoretical model of the academic life course; it no longer suffices to think of academic careers as lock-step progress through a rigid pipeline.

In collaboration with Marc Goulden (University of California, Berkeley), I now seek to extend examination of the relationship between gender, family formation, and academic careers to two new outcomes, faculty salaries and retirement timing (specific coding for these variables appears in Section 1.B.III).

1.B. Proposed work

1.B.I. Specific research questions

Support from the Association for Institutional Researchers would facilitate two new avenues of research on the relationship between sex, family formation and academic careers.

1) We will examine how family formation differentially affects wages for male and female faculty. It has long been known that female academics have lower salaries than their male counterparts (Bayer & Astin, 1968; Long, 2001). Some of the disparity can be explained by gender differences in rank and type of employing institution (Clery & Topper, 2007), but meaningful differences persist. Social scientists have demonstrated that children exert an incremental wage penalty on women in general (Avellar & Smock, 2003; Budig & England, 2001; Waldfogel, 1997). We will determine the extent to which this holds true for academics, how marital status and academic rank affect salaries, and whether these effects differ for male and female faculty.

2) We will explore gender differences in faculty retirement. The average American faculty member is 50 years old; the retirement typically occurs at 66 (Conley, 2007). Retirement is on the minds of many younger professors: almost half of faculty aged 55 and up say it is it least somewhat likely that they will retire within three years (Conley, 2005). Faculty retirement is therefore an important issue, but there has been very little research in this area. We will conduct multivariate analysis of how marital status and the presence of dependents differentially affects retirement rates for male and female faculty.

1.B.II. Data

Ph.D. recipients must be followed over time to fully understand how gender and family affect academic careers. The Survey of Doctorate Recipients (SDR) uniquely facilitates such longitudinal inquiry. The SDR is a biennial longitudinal study of doctoral recipients conducted since 1973. Survey participants are selected from the Survey of Earned Doctorates (SED), an annual census of doctoral degrees conferred in the U.S. For each survey

year the SDR includes both a new sub-sample of Ph.D. recipients drawn from the most recent two years of the SED population (roughly 10% of the new SED population) and all individuals who participated in earlier SDR survey cycles who are under 76 years of age and still live in the United States (National Science Foundation, 1999). Since 92% of faculty have retired by age 75 (Conley, 2007), the SDR provides an excellent data set for examining late-career events and retirement among faculty. Attrition is low; for instance, in 1991 nearly 87% of SDR participants completed the biennial survey (National Science Foundation, 1995).

The first year of the SDR, 1973, had a sample of 56,096 science Ph.D. s (including social scientists) who earned degrees from January 1, 1930 to June 30, 1972. Participants were asked various questions about their post-Ph.D. career experiences. A weight was assigned to each survey respondent according to the likelihood of their participation in the survey so that the data could be generalized to the entire population of science and engineering doctorates in the U.S. at that time (261,299 individuals). Each survey cycle thereafter included a weight for each respondent to facilitate estimates about the U.S. population of doctorate recipients. In 1979, humanities doctorates were added to the biennial survey and were re-interviewed through 1995. Humanities doctorates were dropped from the 1997 SDR because of a lack of funding from NEH. Starting in 1979, the SDR included questions about marriage and children living in the household. For these reasons our analysis will be limited to data collected between 1981 and 1995, inclusive.[1]

We believe that the SDR is the single best source of data on the careers and families of doctoral recipients in the U.S. The panel design of the survey and its ongoing replenishment with new cohorts of Ph.D. recipients facilitates longitudinal analysis, described below, that provides stronger evidence for causality than do analyses based on a single cross-section of data. Furthermore, multivariate analysis will allow us to sort out competing causal mechanisms: what independent variables (gender, Ph.D. institution type, job type, academic rank, publications, family situation, time-to-degree, timing of children) most affect faculty salaries and retirement timing?

But the data are not free of complications. Because the sampling methodology changed over time and because the data are contained in eleven separate data files, we had to retrofit the earlier data to match the current sampling methodologies (Brown, 1997; Clark, 1994; Cox, Mitchell, & Moonesinghe, 1998; Mitchell, Moonesinghe, & Cox, 1998) and merge all of the files into a single metafile. We also created many variables related to career and

[1] Due to unknown quantities of missing data our final sample size cannot be known until data are ready for analysis. Based on our earlier work with the SDR, we estimate a sample of about 10,000.

family that we standardized across the years of the survey. More data preparation is necessary for us to perform the new analyses described in this proposal.

1.B.III. Variables

We will employ two dependent variables. First, we will analyze the natural logarithm of faculty income. Income is logged to account for its right skew. Second, we will explore the determinants of retirement. Since retirement is time dependent, it will be coded as a set of event histories. This is described below in the subsection devoted to analysis.

Our primary independent variables are respondent sex, fertility, and marital status. Marital status is measured with a single dummy ascertaining whether a respondent is currently in a heterosexual marriage (the data predate same-sex marriage in Massachusetts); unfortunately it is not possible to know whether unmarried respondents have live-in partners. In addition, the SDR does not indicate whether respondent spouses are employed as faculty.

For analyses of income, fertility will be measured with a pair of dummy variables that tap the presence of children under six and children between six and eighteen. Children under six pose a greater barrier to professional advancement than do older, school-age offspring (Wolfinger, Mason, & Goulden, 2008). In our earlier work we experimented with variables measuring numbers of children, but these did not produce substantially different results. Children will be measured differently in analyses of retirement, given that few older faculty presumably have minor children. For these analyses we will use SDR questions to measure the number of co-resident dependents, minor children or otherwise.

Control variables fall into two categories, academic and demographic characteristics. Any of these may be correlated with both respondent family formation behaviors and the outcomes we consider. Academic controls include the National Research Council (NRC) ranking of respondents' Ph.D. programs, time to doctoral degree, doctoral field, Carnegie classification of current institution, time since completion of graduate school, calendar year of Ph.D. receipt, and whether respondents are employed as tenure-track faculty or adjuncts. The first two will be coded as sets of dummy variables, representing quartiles of the observed continuous variables; field of employment is a three category variable measuring whether respondents received their degrees in the humanities, social sciences,

or bench sciences (including the biological and physical sciences, engineering, and mathematics).[2] Carnegie classification of current institution will be measured with a set of dummy variables. Year of Ph.D. receipt is measured with a continuous variable. Time since Ph.D. receipt, also continuous, will be used only in the models predicting income. Type of job—tenure-track vs. adjunct—will be coded as a dummy variable.

Demographic controls include respondent race and age. Race is dummy-coded with variables measuring whether a respondent is Black, white, Latino, Asian, or other; age is continuous and time-varying.

1.B.IV. Analysis

We will go beyond previous research on mid-career outcomes—salary and retirement—among faculty by conducting multivariate analysis of salaries and retirement. Most previous studies have employed neither proper multivariate analysis nor national data.

First, we will use fixed effects models when examining faculty incomes over time (Greene, 2002). This method addresses the error term violations produced by analyzing pooled panel data with conventional ordinary least squares regression. Fixed effects models also allow us to account for unobserved panel-specific differences between respondents. Models are estimated by mean-centering each model term across panel waves for each individual SDR faculty member:

$$INCOME_{ij} - INCOME_{i.} = \beta_{0ij} - \beta_{0i.} + \boldsymbol{\beta_1}(\mathbf{X_{ij}} - \mathbf{X_{i.}}) + e_{ij} - e_{i.} \quad (1)$$

In this equation, i refers to individuals, j to waves of SDR data. In the interest of clarity we omit the third subscript, here and elsewhere, distinguishing individual independent variables. Following convention we use boldface terms to indicate vectors.

Next, growth curve models will be used to model changing faculty incomes as a function of sex, marital status, the presence of children, and other independent variables. Like fixed effects models, growth curves are appropriate when data are available at multiple time points for each respondent (Raudenbush and Bryk 2001).

[2] In our earlier work we experimented with more detailed measures of discipline but found they did not affect the relationship between family formation and academic outcomes.

Growth curves will use two levels of analysis in this study. Level 1 features repeated measurements of income as its dependent variable:

$$INCOME_{ij} = \beta_{0j} + \beta_{1j}X_{ij} + e_{ij} \quad (2)$$

In this equation, i refers to individuals, j to waves of SDR data, and X_{ij} the independent variables. Growth curve modeling allows for an analysis of faculty incomes at a starting point (an intercept, given as β_{0j} in Equation [2]) and over time (slopes, given as $\beta_{1j}X$ in Equation [2]) in response to marital status, children, and other factors. The intercept corresponds to incomes at the first wave of data measured for analysis. The slopes refer to the rate of change between the first and last waves of data as a function of the independent variables. The Level 2 equations predict the Equation (2) slopes and intercepts as a function of individual and professional characteristics for each respondent:

$$\boldsymbol{\beta_{0j}} = \gamma_{00} + \boldsymbol{\gamma_{01}Z_j} + u_{0j} \quad (3)$$

$$\boldsymbol{\beta_{1j}} = \gamma_{10} + \boldsymbol{\gamma_{11}Z_j} + u_{1j} \quad (4)$$

Equation (3) predicts the Level 1 intercept, while Equation (4) predicts the Level 1 slopes. Thus γ_{00} and γ_{10} represent Level 2 intercepts (in other words, the average Level 1 slope and intercept, respectively, across Level 2 units). γ_{01} and γ_{11} are the Level 2 slopes associated with $\mathbf{Z}_j$, the vector of contextual (Level 2) independent variables. Finally, u_{0j} and u_{1j} are Level 2 error terms. Substituting Equations (3) and (4) into Equation (1) yields the following:

$$INCOME_{ij} = \gamma_{00} + \boldsymbol{\gamma_{10}X_{ij}} + \boldsymbol{\gamma_{01}X_{ij}Z_j} + \boldsymbol{u_{1j}X_{ij}} + u_{0j} + e_{ij} \quad (5)$$

Thus a positive slope coefficient for any given independent variable indicates rising incomes over time for respondents with higher scores on that variable.

We will model faculty retirements using discrete time event history models, estimated via complementary log-log regression. The complementary log-log is a better estimator than logit or probit when discrete data approximate a continuous time process (Allison, 1995: 216-219).

Data from each wave of the SDR between 1981 and 1995 will be used to construct event histories of time to retirement. For each year in a faculty, an additional record is created. Failure occurs when respondents retire. The hazard function will be captured by a dummy variable for each year prior to retirement; we will also experiment with linear specifications. Event history analysis accounts for the fact that many respondents will not retire during the study period; these cases are treated as right-censored (Allison, 1995).

We will estimate two separate models for each dependent variable. The first model will contain measures of sex, family formation, demographic and academic characteristics. Next we will interact respondent sex with the family formation variables in order to show how marriage and dependents differentially affect male and female faculty's incomes and retirement timing.

1.C. Dissemination plan

We will disseminate our research findings as widely as possible. First, we will write two papers for publication in peer-reviewed journals. One paper will address faculty incomes; the other, retirement. Prior to publication we expect to solicit feedback on these papers at professional meetings. Second, we plan to combine this work with our earlier research based on the SDR (Mason & Goulden, 2002, 2004; Mason, Goulden, & Wolfinger, 2006; Wolfinger, Mason, & Goulden, 2008, forthcoming), in collaboration with Mary Ann Mason (University of California, Berkeley), in a monograph on faculty careers. The book will combine our previous findings and new research in a pioneering, comprehensive look at the effects of family over the career life span of academics. It will be written in an accessible style yet rigorously based on our research findings. The book will include chapters on the pipeline from graduate school to academic or non-academic careers, the 'make or break' years, the mid-career and promotion years, retirement patterns, and policy solutions; a preliminary outline appears in Appendix 1, Section 1.G.

Our previous research based on the SDR was presented widely, including lectures at the American Council on Education, Council of Graduate Schools, Cornell University, Stanford University, and the University of Virginia. We also received extensive press coverage, including articles in the *Chronicle of Higher Education*, *Science*, the *Boston Globe*, and the *Times Higher Education Supplement* (for a full list, http://ucfamilyedge.berkeley.edu/press.html). Marc Goulden was profiled as a leading thinkers in higher education

by the *Chronicle of Higher Education* ("Marc Goulden: Crunches Numbers on Academics' Family Lives"; 7/15/2005; http://chronicle.com/free/v51/i45/45a01602.htm). We expect that the research proposed here will attract a similar level of coverage.

We expect to spend the first half of the grant period preparing the data, performing the data analysis, and conducting library research. The second half of the grand period will be devoted to writing papers and disseminating the results.

1.D. Description of policy relevance

The policy relevance of our work should be clear: we seek to better understand how family affects the careers of female academics. There has been much research on this issue in the past, so we expect others in academia will find our results helpful in making policy decisions. In addition to conducting research, we have from the beginning of this project sought solutions to work-family conflicts in academia and advocated for policies that will make the professoriate a more family-friendly career choice.

We can better understand the nature of the problem, as well as its national prevalence, by continuing to analyze data from the Survey of Doctorate Recipients. What kinds of women and families are least affected by marriage and children? The most affected? What about non-tenured academic positions? Our prior work measured faculty equity by academic rank, but focusing on salary may reveal even starker differences between the sexes. Finally, differences in retirement rates will be particularly important for planning purposes as baby boomer faculty start to retire.

1.E. Discussion of innovative components of project

Our project will be innovative in at least three ways. First, we will compare Ph.D. recipients from the bench sciences, social science, and humanities. Most prior work using the SDR has focused only on bench scientists. Second, we propose to make full use of the longitudinal component of the SDR. Most researchers have reported findings from single survey cycles (Long, 2001); few have merged the entire data set into a single meta-file and then employed appropriate longitudinal methods (e.g., Ginther, 2001; Ginther & Hayes, 2001). We believe that

by taking this approach we will be better able to answer many of the most important questions about income and retirement in academia. Third, we will employ multivariate analytic techniques suitable to longitudinal data.

1.F. Target audience

The results of this project should be relevant to higher education faculty, administrators, and others making decisions relevant to colleges and universities (e.g., trustees, regents, state legislators).

1.G. Appendix 1: Preliminary book outline

1. Introduction

2. Getting Into the Game

We will examine gender differences in career and family formation plans among Ph.D. students, some of whom are parents, most of whom are not, using data from a recently completed survey of Ph.D. respondents throughout the University of California system. We will demonstrate how concerns about family balance color decisions regarding family formation and careers.

3. The 'Make or Break' Years in Academia

This chapter will draw on our previous studies as well as new analysis of the Survey of Doctorate Recipients and various University of California surveys. We will discuss differences in getting tenure-track academic positions, adjunct teaching jobs, non-teaching academic positions, and post-doctoral fellowships between men and women who have partners and/or children. We will also consider scholars who leave the paid labor force. Finally, we will examine the effects of federal grants and the federal grant-making process on career and family.

4. Alone in the Ivory Tower

Our previous work shows that female academics are less likely to be married or have children than are male academics. In this chapter, we compare academic women and men to their counterparts in law and medicine and describe the familial costs that both women and men pay in order to have academic careers.

5. The Mid-Career Years

This chapter will cover a variety of mid-career issues for academics. We plan to expand upon our earlier work that discussed gender differences in tenure and promotion. We will examine why some scholars get stuck in the second tier. This chapter will also explore how gender and family formation affect academic salaries and productivity. Finally, we will consider academia's glass ceiling: why are chairs, deans, and university presidents disproportionately male?

6. Retirement

Using data from the Survey of Doctorate Recipients and University of California, Berkeley records we will examine the retirement patterns and experiences of women and men academics. We will discuss how academics 'phase out' of work, through decreases in hours worked and changes in research productivity, as well as explore issues around salary and benefits.[3]

7. Solutions

How can academia be more family-friendly – what are the next steps? What can scholars and universities do?

[3] Note that productivity data are only available for some SDR respondents.

1.H. Appendix 2. Goulden Commitment Letter

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January 3, 2008

Professor Nicholas H. Wolfinger
Department of Family and Consumer Studies
225 South 1400 East, AEB 228
University of Utah
Salt Lake City, UT 84102-0080

Dear Professor Wolfinger

I would be pleased to serve as a co-investigator on your project "Mid Career and Beyond in Academia".

My duties on this project will include:

Devising and executing statistical analyses to be conducted with data from the Survey of Doctorate Recipients.

Contributing to the authorship of scholarly articles and a scholarly monograph.

My participation in this project will be .07 FTE. Most of the research will take place in the 2008-2009 academic year.

Sincerely,

Marc Goulden, Ph.D.

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Suitor, J. J., Mecom, D., & Feld, I. S. (2001). Gender, household labor, and scholarly productivity among university professors. *Gender Issues*, 19, 50-67.

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Waldfogel, J. (1997). The effect of children on women's wages. *American Sociological Review*, *62*, 209-217.

Williams, J. (2000). *Unbending gender: Why family and work conflict and what to do about it*. Oxford: Oxford University Press.

Wolfinger, N. H., Mason, M. A. & Goulden. (2008). Problems in the pipeline: Gender, marriage, and fertility in the ivory tower. *The Journal of Higher Education*.

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Wyden, R. (2003). Title IX and women in academics. *Computing Research News*, *15*, 1-8.

4. BIOGRAPHICAL SKETCHES

4.A. Wolfinger

NICHOLAS H. WOLFINGER

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Associate Professor, Department of Family and Consumer Studies, University of Utah, 2005-present
Adjunct Associate Professor, Department of Sociology, University of Utah, 2005-present
Associate Investigator, Institute of Public and International Affairs, University of Utah, 2006-present

Education

Ph.D. Sociology, University of California, Los Angeles, 1998

Summer Fellow, Program in Quantitative Methods, Inter-university Consortium for Political and Social Research, Ann Arbor, Michigan, 1995

M.A. Sociology, University of California, Los Angeles, 1992

B.A. Sociology, University of California, Berkeley, 1990
(with honors)

Books

2005. *Understanding the Divorce Cycle: The Children of Divorce in Their Own Marriages*. New York: Cambridge University Press.

2005. *Fragile Families and the Marriage Agenda*. New York: Springer (edited, with L. Kowaleski-Jones).

Publications in Peer-Reviewed Journals

Forthcoming. "Family Structure and Voter Turnout." *Social Forces* (with R. E. Wolfinger).

Forthcoming. "Happily Ever After? Religion, Marital Status, Gender, and Relationship Quality in Urban Families." *Social Forces* (with W. B. Wilcox).

Forthcoming. "Living and Loving "Decent": Religion and Relationship Quality among Urban Parents." *Social Science Research* (with W. B. Wilcox).

Forthcoming. "Problems in the Pipeline: Gender, Marriage, and Fertility in the Ivory Tower." *The Journal of Higher Education* (with M. A. Mason and M. Goulden).

Forthcoming. "Family Structure Transitions and Child Achievement." *Sociological Spectrum* (with K. A. Shaff, L. Kowaleski-Jones, and K. Smith).

2007. “Then Comes Marriage? Religion and Marriage in Urban America.” *Social Science Research* 36:569-589 (with W. B. Wilcox).

2007. “Does the Rebound Effect Exist? Time to Remarriage and Subsequent Union Stability.” *Journal of Divorce & Remarriage* 46:9-20.

2004. “Double Impact: What Sibling Data Can Tell Us about the Negative Effects of Parental Divorce.” *Social Biology* 50:58-76 (with L. Kowaleski-Jones and K. Smith).

2003. “Parental Divorce and Offspring Marriage: Early or Late?” *Social Forces* 82:337-353.

2003. “Family Structure Homogamy: The Effects of Parental Divorce on Partner Selection and Marital Stability.” *Social Science Research* 32:80-97.

2002. “Stepparents: De Facto Parents or Legal Strangers?” *Journal of Family Issues* 23:507-522 (with M. A. Mason, S. H. Jay, and G. Messick-Svare).

2002. “On Writing Field Notes: Background Expectancies and Collection Strategies.” *Qualitative Research* 2:85-95.

2001. “The Effects of Family Structure of Origin on Offspring Cohabitation Duration.” *Sociological Inquiry* 71:293-313.

2001. “Reexamining the Economic Consequences of Marital Disruption for Women.” *Social Science Quarterly* 82:202-217 (with M. McKeever).

2000. “Beyond the Intergenerational Transmission of Divorce: Do People Replicate the Patterns of Marital Instability They Grew Up With?” *Journal of Family Issues* 21:1061-1086.

1999. “Trends in the Intergenerational Transmission of Divorce.” *Demography* 36:415-420.

1999. “The Different Voices of Helping: Gender Differences in Recounting Dilemmas.” *Gender Issues* 17:70-86 (with J. Rabow and M. D. Newcomb).

1998. “The Effects of Parental Divorce on Adult Tobacco and Alcohol Consumption.” *Journal of Health and Social Behavior* 39:254-270.

1997. “The Different Voices of Gender: Social Recognition.” *Current Research in Social Psychology* 2:50-65 (with J. Rabow).

1995. “Passing Moments: Some Social Dynamics of Pedestrian Interaction.” *Journal of Contemporary Ethnography* 24:323-340.

1994. “Reexamining Personal and Situational Factors in Drunk Driving Interventions.” *Journal of Applied Social Psychology* 24:1627-1639 (with J. Rabow and M. D. Newcomb).

Other Publications

Forthcoming. “The Intergenerational Transmission of Divorce.” *Encyclopedia of Human Relationship*s, edited by H. T. Reis and S. K. Sprecher. Thousand Oaks, CA: Sage.

2007. “Hello and Goodbye to Divorce Reform.” *Report* of the National Council on Family Relations 52:16-17.

2007. Review of *Divorce: Causes and Consequences*, by A. Clarke-Stewart and C. Brentano. *Contemporary Sociology* 36:345-346.

2006. “Babies Matter: Pushing the Gender Equity Revolution Forward.” Pp. 9-30 in *The Balancing Act: Gendered*

Perspectives in Faculty Roles and Work Lives, edited by S. J. Bracken et al. Sterling, VA: Stylus (with M. A. Mason and M. Goulden).

2006. "Marriage and Divorce in Utah and the United States: Convergence or Continued Divergence?" Pp. 34-43 in *Utah at the Beginning of the Millennium: A Demographic Perspective*, edited by K. R. Smith and C. Zick. Salt Lake City, UT: University of Utah Press (with V. K. Fu).

2005. "Shifting Fortunes in a Changing Economy: Trends in the Economic Well-Being of Divorced Women." Pp. 127-157 in *Fragile Families and the Marriage Agenda*, edited by L. Kowaleski-Jones and N. H. Wolfinger. New York: Springer (with M. McKeever).

2005. "The Mixed Blessings of No-Fault Divorce." *Whittier Journal of Child and Family Advocacy* 4:407-430.

2001. "Cohort Analysis." Pp. 2189-2194 in *International Encyclopedia of the Social and Behavioral Sciences*, edited by N. J. Smelser and P. B. Baltes. Amsterdam: Elsevier Science (with W. M. Mason).

Papers under Review

"Thanks for Nothing: Changes in Income and Labor Force Participation for Never-Married Mothers." Revise and resubmit, *American Sociological Review* (with M. McKeever).

"Dispelling the Pipeline Myth: Gender, Family Formation, and Alternative Trajectories in the Academic Life Course." Revise and resubmit, *Social Forces* (with M. A. Mason and M. Goulden).

"Alone in the Ivory Tower: How Birth Events Vary among Fast-Track Professionals." Under review at *Demography* (with M. A. Mason and M. Goulden).

Selected Recent Professional Papers

2007. "Broken Boundaries or Broken Marriages? Racial Intermarriage and Divorce." Presented at the annual meeting of the Population Association of America, New York (with V. K. Fu).

2006. "Unpacking the Faith Factor: Norms, Decency, and Relationship Quality among Urban Parents." Presented at the annual meeting of the Population Association of America, Los Angeles (with W. B. Wilcox).

2005. "From Troubled Teen to Murphy Brown? Changing Characteristics of Never-Married Mothers since 1982." Presented at the annual meeting of the American Sociological Association, Philadelphia (with M. McKeever).

Invited Lectures

National Science Foundation (10/12/07), University of Michigan (6/8/07), Cornell University (10/18/05), Northeastern University (9/29/05), University of Virginia (2/25/05), Mount Holyoke College (10/13/04), Brigham Young University (10/8/04), Pomona College (3/23/04), Rice University (10/4/01).

Grants

2008. "Religion and Relationships in Urban America." John Randolph Foundation (subcontract; $14,960).

2004-2006. "Family Formation and Professional Advancement in Academia." Alfred P. Sloan Foundation ($44,920).

2004-2006. "Trends in the Incomes of Never-Married Mothers." William T. Grant Foundation ($61,629).

2004-2005. "Spiritual Transformation and Marriage in Urban America." John Templeton Foundation (subcontract; $19,305).

2003-2005. “A Family-Friendly Package for Ladder-Rank Faculty at the University of California.” Alfred P. Sloan Foundation (subcontract; $16,824).

1998-2002. “The Effects of Divorce on Adult Well-Being.” Bireley Foundation ($95,000).

Data Analysis Skills

Statistical packages employed: SAS, STATA, Limdep, Excel, Bivoprob (bivariate probit models), TDA (event history analysis), EQS (structural equation modeling), S-Plus

Data analysis skills: multiple regression, longitudinal data analysis, event history analysis, models for categorical variables, cohort analysis, structural equation modeling, nonparametric data analysis, models for income distributions

National data sets used: Current Population Survey March, June, and November Supplements, Fragile Families and Child Wellbeing [sic] Study, General Social Survey, National Longitudinal Survey of Youth 1979 cohort, National Survey of Families and Households, Survey of Doctorate Recipients

Short Biographical Statement

Nicholas H. Wolfinger is Associate Professor in the Department of Family and Consumer Studies and Adjunct Associate Professor of Sociology at the University of Utah. He is the author of *Understanding the Divorce Cycle* (Cambridge University Press, 2005) the co-editor of *Fragile Families and the Marriage Agenda* (Springer, 2005), and over twenty-five papers and chapters. His other projects involve trends in the economic well-being of single mothers (with Matthew McKeever), the relationship between religion and marriage in urban America (with W. Bradford Wilcox), and the effects of family structure on voter turnout (with Raymond E. Wolfinger).

Wolfinger has taken over three years of graduate courses in quantitative data analysis, and has taught statistics at the undergraduate and graduate levels. He also attended the annual summer program in quantitative methods at the University of Michigan. He has published a paper on quantitative data analysis; over twenty of his publications have employed multivariate statistics. Furthermore, he has employed eight different pieces of statistical software with eight national data sets.

4.B. Goulden

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EDUCATION

Ph.D. (1995), History, Dissertation Title: "From Country Club to Rat Race: A Social History of College Students, 1920-1960," University of Wisconsin, Madison, Spencer Dissertation Fellow; M.A. (1986), History, Carnegie Mellon University; B.A. (1984), History, Oberlin College.

RESEARCH INTERESTS

Dr. Goulden's current research interests include: equity issues in higher education; the intersection of family and career trajectories among academics; educational policy related to faculty, graduate students, and postdoctorates; web enablement of data and survey research; survival analysis and other advanced statistical methods; data warehousing and automation of institutional reporting.

APPOINTMENTS

Director of Data Initiatives, UC Berkeley, Academic Affairs (present)
Principal Research Analyst, UC Berkeley, Graduate Division (2001-2005)
Senior Research Analyst, UC Berkeley, Graduate Division (2000-2001)
Research Associate, UC Berkeley, Graduate Division (1998-2000)
Lecturer, Carroll College, Wisconsin (1994-1997)

RESEARCH PROJECTS

- "Federal Funding and the Academic Pipeline," with Mary Ann Mason; funded by the Alfred P. Sloan Foundation, January 2006 to December 2008 ($410k).
- "The University of California Faculty Family Friendly Edge," with Mary Ann Mason and Angelica Stacy; funded by the Alfred P. Sloan Foundation, May 2003 to December 2005 ($420k) & the Institute for Labor and Employment Studies ($20k), http://ucfamilyedge.berkeley.edu/.
- "Do Babies Matter: Using the Survey of Doctorate Recipients and the 2000 Census to Analyze Career and Family Outcomes among Ph.D. Recipients," with Mary Ann Mason and Nicholas H. Wolfinger; funded by the Association of Institutional Researchers, 2001-2002 ($30k), and the Alfred P. Sloan Foundation, 2004-2005 ($40k), http://ucfamilyedge.berkeley.edu/.
- "UC Berkeley Faculty Equity Analysis," with Angelica Stacy, funded through the UC Berkeley Office for Faculty Equity, http://facultyequity.chance.berkeley.edu/.
- "Ph.D.s 10 Years Later" and "Ph.D.s in Art History," with Maresi Nerad and Joe Cerny, funded by the Andrew Mellon Foundation and National Science Foundation, 1998-2000, and J. Paul Getty Trust, 2000-2001.

RESEARCH SKILLS

- Advanced statistical analysis and programming with SAS and STATA
- Research design, administration, analysis, and presentation of findings
- Data restructuring and web enablement of data
- Grant writing, general research skills, academic writing, and policy analysis

PUBLICATIONS

1. N. H. Wolfinger, M. A. Mason, and M. Goulden (2008). "Problems in the Pipeline: Gender, Marriage, and Fertility in the Ivory Tower." *The Journal of Higher Education*.
2. Mason, M.A., M. Goulden, and N. H. Wolfinger (2006), "Do Babies Matter Pushing the Gender Equity Revolution Forward," in S. Bracken, J. Allen, and D. Dean, eds., *The Balancing Act: Gendered Perspectives in Faculty Roles and Work Lives*, Women in Academe Series (Sterling, Virginia: Stylus), 9-29.
3. Mason, M.A. and M. Goulden (2004), "Do Babies Matter (Part II)? Closing the Baby Gap," *Academe,* November-December, http://www.aaup.org/publications/Academe/2004/04nd/04ndmaso.htm.
4. Mason, M.A. and M. Goulden (2004), "Marriage and Baby Blues: Redefining Gender Equity in the Academy," *The Annals of the American Academy of Political and Social Science,* 596 (No. 1), 86-103, http://ann.sagepub.com/cgi/reprint/596/1/86.
5. Mason, M.A. and M. Goulden (2002), "Do Babies Matter? The Effect of Family Formation on the Lifelong Careers of Academic Men and Women," *Academe,* November-December, http://www.aaup.org/publications/Academe/2002/02nd/02ndmas.htm.
6. Modell, J.; M. Goulden; and S. Magnusson (1989), "World War II in the Lives of Black Americans: Some Findings and an Interpretation," *Journal of American History* 76, 3, 838-848.
7. Resnick, D. P. and M. Goulden (1987), "Assessment, Curriculum, and Expansion: A Historical Perspective," in D. F. Halpern, ed., *Student Outcomes Assessment: What Institutions Stand to Gain*, New Directions for Higher Education 59 (San Francisco: Jossey-Bass), 77-88.

INVITED PRESENTATIONS

1. "Flexible Tenure-Track Faculty Paths: A Key to Faculty Diversity," American Council on Education (ACE), Educating All of One Nation Conference, Phoenix, October 8, 2005, invited by ACE, http://www.acenet.edu/AM/Template.cfm?Section=EAON1.
2. "Balancing Work & Family for Faculty," with Robert Drago. Leadership Workshop for Department Chairs, University of Washington, Seattle, July 28, 2005, invited by Kate Quinn, http://www.engr.washington.edu/advance/workshops/NationalWorkshop/2005/Bios-2005.pdf.
3. "Creating a University of California Family Friendly Package for Ladder-Rank Faculty," Sloan Foundation Annual Working Families Conference, The Work-Life Balance: Progress, Strategies, and Obstacles, Chicago, May 19, 2005.
4. "Creating a University of California Family Friendly Package for Ladder-Rank Faculty," American Association of Higher Education (AAHE), Atlanta, March 19, 2005, invited by the AAHE Women's Caucus, http://insidehighered.com/news/2005/03/21/care http://insidehighered.com/news/2005/03/24/parttime.
5. "Creating a University of California Family Friendly Package for Ladder-Rank Faculty," Univ. of California, Riverside, Diversity Summit, Riverside, March 11, 2005, invited by Chancellor Córdova, http://www.blackvoicenews.com/print.php?sid=2983
6. "Creating Options: Flexible Tenure-Track Faculty Pathways for the New Academy," *featured session*, Association of American Colleges & Universities (AACU) Annual Meeting, San Francisco, January 28, 2005, invited by American Council on Education (ACE) to provide overview of national data trends affecting faculty and to serve as moderator to a panel of 3 Chancellors, http://www.aacu-edu.org/meetings/annualmeeting/AM05/plenarysessions.cfm
7. "Do Babies Matter? Redefining Gender Equity in the Academy," Association for the Study of Higher Education (ASHE), Kansas City, November 2004, invited by the AAHE Women's Caucus, http://www.ashe.ws/conf04/home.htm
8. "Do Babies Matter? Redefining Gender Equity in the Academy," PAESMEM/Stanford School of Engineering Workshop on Mentoring in Engineering, Palo Alto, June 2004, invited by Pamela Cosman, http://paesmem.stanford.edu/index.php
9. "Do Babies Matter? Redefining Gender Equity in the Academy," American Association for Higher Education (AAHE), San Diego, April 2004, invited by the AAHE Women's Caucus, http://www.aahe.org/learningtochange/2004/

10. “Do Babies Matter? Redefining Gender Equity in the Academy” & “Report on the University of California Work and Family Survey,” AAUP Roundtable, July 2003, invited by AAUP, http://www.aaup.org/publications/Academe/2003/03nd/03ndaw.htm/
11. “Do Babies Matter? Using the Survey of Doctorate Recipients to explore the role of family in the careers of academic women and men,” Association of Institutional Researchers (AIR) , Tampa, Florida, May 2003, invited paper session, AIR Grant award recipient.

PRESS COVERAGE

For a full list, please see: http://ucfamilyedge.berkeley.edu/press.html including: "Marc Goulden: Crunches numbers on academics' family lives" *The Chronicle of Higher Education*. By Robin Wilson, 7/15/2005.

REFERENCES

Available upon request.

SHORT BIOGRAPHICAL STATEMENT

Marc Goulden is Director of Data Initiatives for Academic Affairs at the University of California, Berkeley. He has a Ph.D. from the University of Wisconsin, Madison (1995), with a focus on the diversity and life course of students in college and university settings. He works with Mary Ann Mason on the “Do Babies Matter” study and co-manages the UC Faculty Family Friendly Edge Initiative. In 2005 the *Chronicle of Higher Education* profiled Goulden as one of higher education's next generation of thinkers.

Goulden has six years of experience analyzing multiple waves of the Survey of Doctorate Recipients in SAS and STATA. He has also analyzed Census data, as well as numerous surveys he designed and implemented at the ten campus University of California system.

5. BUDGET

	Fall 2008	Spring 2009	Summer 2009	Total
PERSONNEL EXPENSES				
P.I. salary[1]	$5,720	$5,720	-	$11,440
P.I. fringe benefits @ 36%	$2,059	$2,059	-	$4,118
Graduate Student Researcher (GSR)[2]	$5,200	$5,200	-	$10,400
GSR fringe benefits @ 10%	$520	$520	-	$1,040
Subcontractor salary @ .07 FTE[3]	$2,378	$2,378	$2,378	$7,134
Subcontractor fringe benefits @ 22%	$523	$523	$523	$1,569
TOTAL PERSONNEL EXPENSES	**$16,400**	**$16,400**	**$2,901**	**$35,701**
OPERATING EXPENSES				
Phones/fax/printing/copying	$100	$100	$99	$299
Travel[4]	$500	$2,000	$1,500	$4,000
TOTAL OPERATING EXPENSES	**$600**	**$2,100**	**$1,599**	**$4,299**
TOTAL REQUESTED	**$17,000**	**$18,500**	**$4,500**	**$40,000**
TOTAL				**$40,000**

1. Salary to buy out two courses for Wolfinger during the 2008-9 academic year. The current buy out rate is $5,500; the stated figure assumes a 4% increase.
2. The Graduate Student Researcher (GSR) will assist in library research and data preparation. The current annual rate for a GSR is $10,000; the stated figure assumes a 4% increase.
3. Figure represents 7% of Goulden's twelve month salary plus assumed 4% pay increase.
4. Four trips are budgeted: One trip to the 2009 annual meeting of the American Sociological Association to solicit feedback on the planned research ($1,500), one trip to the Association for Institutional Research annual forum ($1,500), two trips to Berkeley, CA to meet with collaborator Goulden ($500 each). The two Berkeley trips can be cancelled if the AIR proposal reviewers feel they do not represent a reasonable exception to the AIR trip guidelines. This would reduce the total requested to $39,000.

SCOPE OF WORK

Nicholas H. Wolfinger (University of Utah) will be PI. He will oversee the project, take the lead in drafting research papers, and design the data analysis.

Marc Goulden (University of California, Berkeley) will contribute his expertise on the SDR, assist in designing the data analysis, perform the data analysis, and contribute to the authorship of scholarly works.

A Graduate Student Researcher at the University of Utah will assist with library research and data preparation.

6. CURRENT AND PENDING SUPPORT

Current and pending support: none

Prior support to Wolfinger for this project:

"Family Formation and Professional Advancement in Academia." Alfred P. Sloan Foundation ($44,920), 2004-2006.

Prior support to Goulden for this project:

"Do Babies Matter: Using the Survey of Doctorate Recipients and the 2000 Census to Analyze Career and Family Outcomes among Ph.D. Recipients." Association of Institutional Researchers ($30,000), 2001-2002, and the Alfred P. Sloan Foundation, ($40,000), 2004-2005; subcontracts.

7. FACILITIES, EQUIPMENT, AND OTHER RESOUCES

The research will be conducted at the University of Utah and the University of California, Berkeley using facilities already available to Wolfinger and Goulden. These facilities are adequate for the proposed research.