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The New STEM Faculty Profile: Balancing Family and Dual Careers

Patricia Wonch Hill, Mary Anne Holmes,
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Abstract

Purpose — This chapter contrasts “ideal worker” with “real worker” characteristics among STEM faculty in gendered organizations. The gap between the two reveals the need for academic institutions to revise the notion of and the policies for typical faculty members.

Design — All STEM faculty at a Midwestern research intensive university were asked to participate in a mail and web-based survey to study faculty experiences within departments. The response rate was 70%. Faculty were then categorized by their employment, education, and parent status, and by the work status of their spouse/partner, to assess how closely the faculty matched the ideal academic worker: a faculty member with a full-time home-maker partner.

Findings — Only 13% of the surveyed STEM faculty resemble the “ideal worker” by having a partner who is not employed and who ensures all family care giving. The vast majority of STEM faculty are men with an employed partner who is more likely to have a professional (33%) rather than a nonprofessional (22%) degree.

Research limitations – Only one, public, research-intensive institution in the Midwest United States was surveyed and therefore findings cannot be generalized to faculty at other research intensive institutions or to other types of institutions.

Practical implications – Rather than adding policies to attract women into academia, we find an urgent need make academic institutions rethink to match the reality of most faculty. Increasing flexibility in the academic workplace is not a “women’s issue” but a “faculty issue.”

Value – This paper provides evidence that supports institutional change to accommodate the new academic workers, most of whom are part of dual career couples.

Keywords: STEM, dual Career, ideal worker, institutional change, career-life balance, gender equity



The Presumed Ideal Faculty

Scholars of gendered organizations have argued for many years that full gender integration in occupations will require dismantling gendered structures. Gender is not only a characteristic of individuals; it is a characteristic of structures, including workplaces. Gendered organizations are built on and reproduce inequality through practices and processes that mirror the cultural context in which they exist (Acker, 2006, 1990; Britton & Logan, 2008). Many jobs are created with a particular kind of person in mind who will occupy the position, including the level of family demands of the occupant (Acker, 1990; Williams, 2001). Universities developed faculty roles and expectations with the assumption that men with no family demands will occupy faculty positions (Gappa, Austin, & Trice, 2007). Similar to several other professions with long education trajectories, in the United States norms about the ideal faculty member included expectations that faculty are male, have no family care responsibilities, and have a partner who supports their employment (Williams, 2001). The early career expectations of faculty were cemented in the tenure system when

very few women were professors and few male professors had family care responsibilities (Gappa et al., 2007). Implicit gender assumptions often inhibit the organizational change necessary to undo gendered assumptions of jobs even when broader social changes press the need for new workplace structures (Ridgeway, 2011). The recent focus on work/life balance policies for increasing women in academic fields that are male dominated (e.g., Science, Technology, Engineering, and Mathematics) presumes that mostly women do not fit the ideal worker norms for faculty. Yet recent decades of increases in dual career couples suggest that many men may not fit the ideal worker norm either (Casper & Bianchi, 2002). Rather than assume that gender is the key marker of fit with the ideal worker norm, we incorporate partner education and employment status to assess the degree of fit with ideal worker norms. This new way of conceiving fit with the ideal worker norm provides a way to distinguish between gender and presumed correlates of gender—having a full-time home-maker spouse/partner or not. We therefore explore the mismatch between gendered ideals and demographic realities among Science, Technology, Engineering, and Mathematics (STEM) faculty, and we use relationship status and partner work status to map contemporary demographic realities for academia.

Male Domination in STEM Fields

Colleges and universities currently struggle to retain faculty in STEM departments, and in particular to recruit and promote, as well as retain, women faculty (Fox, 2008; Kaminski & Geisler, 2012). The struggle to recruit and retain STEM women relative to available pools is particularly acute (Xie & Shauman, 2003). In response, many academic institutions have created new policies and practices that increase workplace flexibility for women faculty members (Gappa et al., 2007; Jacobs, 2004; Misra, Lundquist, & Templer, 2012). The U.S. National Science Foundation ADVANCE program has particularly urged such policies to effect institutional transformation to attract, retain, and promote STEM women into leadership positions (Bilimoria & Liang, 2012; Rosser & Chameau, 2006). Yet many of these efforts assume that only women need flexible, familyfriendly workplaces. This assumption leads to the perception that the resulting policies constitute “special treatment” for women faculty and a disinclination for men to use the policies (Drago et al., 2006). We ask, Do only women need family-friendly policies to stay in the academy? We examine this assumption and challenge the notion that only a minor

evolution of policies will suffice to recruit and retain contemporary faculty members. Because women are disproportionately more likely to leave STEM fields, it is important to empirically assess who could potentially benefit from work/life policies. These policies, if used by men and women, could help women stay in STEM fields and help transform STEM fields to be less all-consuming for all faculty.

Family-Friendly Policies as a Solution

For White middle-class families in the United States the presumption is that women not only have, but also raise, children (Risman, 1999). Shifts toward joint or predominantly men raising children have been slower to emerge than women entering paid-labor (Casper & Bianchi, 2002). The demands of intensive parenting for middle-class families (Lareau, 2002) and gendered expectations about parenting (Gerson, 2010) suggest that family-friendly policies should be more important for women than men. In the academy, the conventional timing of earning a Ph.D., working in a post doc, and then starting a tenure-track job generally happen during prime childbearing years. Delaying childbearing creates risks of infertility and health challenges for babies and mothers. Therefore family-friendly policies attempt to address the overlap of the tenure clock with the biological clock for women (De Wet, Ashley, & Kegel, 2002). This overlap arose when the American Association of University Professors created the tenure system after World War II and established the six-year probationary period for tenure (Metzger, 1965). This system reflects a culture that assumed that a faculty member could focus entirely on getting a tenure, either by being single or by having a stay-at-home partner (usually a wife) who provided all of the childcare and homecare for the family. In addition, the partner often did typing and other unpaid labor to support the husband's academic career (Damaske, Ecklund, Lincoln, & White, 2014)). The tenure system thus assumed a supported male as the "ideal worker" and his behavior the "ideal worker norm" (Drago et al., 2006; Williams, 2001). The result was an institutional structure in academia designed for a worker who has no childcare responsibilities.

Today both young men and women currently in graduate school and post-doctoral positions expect to have a relationship with an employed partner and not an unpaid support partner (Gatta & Roos, 2004; Gerson, 2010; Mason & Goulden, 2004a, 2004b; Schiebinger, Henderson, & Gilmartin, 2008; Williams, 2001). Not only graduate students and post-docs,

however, have this expectation: current faculty, men as well as women, need to navigate their own career as well as their partner's. Because expectations about sharing earning and child raising are increasing among many heterosexual couples in the United States (Askari, Liss, Erchull, Staebell, & Axelson, 2010) it is important to assess if men too might need work-life policies.

Is the Focus on Women Warranted?

Are programs designed to recruit and retain women only relevant for women? First we evaluate the implicit assumption that the faculty profile is aligned with the ideal-worker-norm (based on partner employment status). Second, we compare faculty whose partner/family characteristics are closer to and farther from the ideal-worker-norm on key demographics (Age, Rank, Children), in productivity (Total Work Hours, Publications, Salary, Unpaid Family Care Hours, Spouse Partner Work Hours), and Satisfaction and Work/Life Compatibility (Family to Work Interference, Family Support, Department Satisfaction). We look at all of these indicators using the focal independent variable in order to assess whether assumptions that ideal workers have greater productivity and less family to work interference are supported. Past research has shown that women faculty in science and technology fields are less satisfied with their departments and more likely to leave academic positions (Callister, 2006; Fox, 2008; Kaminski & Geisler, 2012). National data show that the effect of child-rearing on research productivity is temporary and the impact is gendered; it primarily impacts mothers with children under the age of 12. Gender differences in hours spent on research or publishing and overall productivity only occur in the early career stages (Misra et al., 2012). To our knowledge, no other researchers have looked at perceptions of how family life bleeds into work, or life to work interference, and no one has looked at these key work/life balance outcomes by partner status and partner characteristics.

Materials and Methods

The survey for the Faculty Network and Workload Study (FNWS) was conducted in March, 2011. The survey population comprises full-time

faculty with a tenure home in one of the 24 STEM departments at a Mid-western Research I University (Watanabe, 2010). Faculty are excluded from the sample if any of the following apply to their position: (1) they work at an extension center; (2) they primarily hold an administrative appointment (i.e., have little or no Full-Time Equivalence (FTE) in their tenure home department, e.g., Deans); or (3) they were on an extended leave of absence. The survey intended to measure faculty networks, climate perceptions, and faculty productivity. Overall, there was a 75.1% individual response rate, giving a total sample size of 361 faculty in 24 STEM departments. The focal variable in the analysis is the categorical measure of how similar or different respondents are from the ideal type scientist. Using crosstab tables and mean differences between groups we identified similarities and differences by type of spouse/partner education and employment status. Because the FNWS was designed as a census of all STEM faculty, not a random sample, significance testing was not utilized.

Focal Independent Variable

The focal concept for this study is the gender by partner by partner employment status. We use the inclusive term “partner” to capture cohabiting as well as married couples. Next, we separated partnered faculty into those whose partners were employed, and those whose partners were not employed. We further separated faculty who have a partner with higher education – potentially eligible for a faculty position, that is, Dual Career – from those whose partner could not qualify for a faculty position. We also separated groups by gender to test whether women need flexible workplace policies more than men. There are potentially 10 categories when we order and group faculty according to their spouse/partner work situation (Table S1; Figure 1): (1) men with an unemployed Partner ($N = 31$); (2) women with an unemployed partner ($N = 0$); (3) men with an unemployed partner who has a professional degree ($N = 17$); (4) women with an unemployed partner who has a professional degree ($N = 0$); (5) men without a partner ($N = 21$); (6) women without a partner ($N = 8$); (7) men with an employed partner ($N = 95$); (8) women with an employed partner ($N = 12$); (9) men with an employed partner who has a professional degree ($N = 141$); and (10) women with an employed partner who has a professional degree ($N = 36$).

Of the 361 faculty in the sample, irrespective of gender, 79% ($N = 284$) had a partner who was employed, 8% ($N = 29$) did not have a partner, and 13% ($N = 48$) had an unemployed partner. Of the 284 faculty with a partner, 59% (192) had a partner who is employed and has a professional degree. STEM women are more likely to have a dual career partner than STEM men (74% vs. 56%). Overall the relationship status categories highlight that most faculty – men and women – have an employed partner.

Demographic Variables

Age was measured in years. *Rank* is captured by dummy variables to show the proportion in each ideal worker category that are full professors. Similarly, for *children*, we used an indicator variable for faculty who reported having any biological, adopted, or stepchildren. *Total work hours* was measured by combining self-reports of hours in teaching, research, service, and consulting. *Productivity* is measured by a dichotomous variable that indicates having more than six publications between 2008 and 2011 or having six or less. Salary is self-reported and measured in \$10,000 increments. *Family Care work* was measured in hours, faculty were asked to estimate how many hours they spend in a typical week on family responsibilities, food preparation, shopping, yard work, laundry, cleaning, dependent care, and other home/family responsibilities. *Partner work hours* were the estimated weekly hours worked by the respondent's spouse/partner.

Work/Life Balance Variables

Family to work interference measures how much family interferes with work. Respondents were asked to what extent did they agree or disagree with following statements: (a) "The time I spend with family often keeps me from spending time on work activities that could be helpful to my career," (b) "Due to stress in my family/personal life, I am often preoccupied with personal matters at work." This scale has adequate reliability with a Chronbach's alpha of .61. *Family Support* is a scale created out of two variables. Respondents were asked to what extent did they agree or disagree with the following statements: (a) "If I need to work nights or on the weekends, I can count on someone to take care of things at home," (b) "When I am frustrated by my work, members of my family try to

understand.” This scale has less than adequate reliability with Chronbach’s alpha of .43, although each variable had a loading above .8, explaining 66% of the variance in one construct and 34% in another. *Department Satisfaction* is an ordinal variable; respondents were asked, on a scale from 1 (very dissatisfied) to 5 (very satisfied) how much they agreed with the statement, “All things considered, how satisfied or dissatisfied are you with your department as a place to work?”

Results: Profile of the Current Stem Faculty

Thirteen percent of the men faculty fit the ideal-worker-norm by having a partner who does not work outside the home. None of the women surveyed are supported by an unemployed partner (Figure 1). Most (65%) faculty members at this university are men with an employed partner, and more have a partner with a professional (33%) rather than a nonprofessional (22%) degree. These findings directly challenge the assumption that most men faculty fit the ideal-worker-norm. Of the faculty with employed partners, a substantially higher proportion of both women (3:1) and men (1.5:1) have partners with a professional degree than no professional degree. We presume that faculty members whose partners have

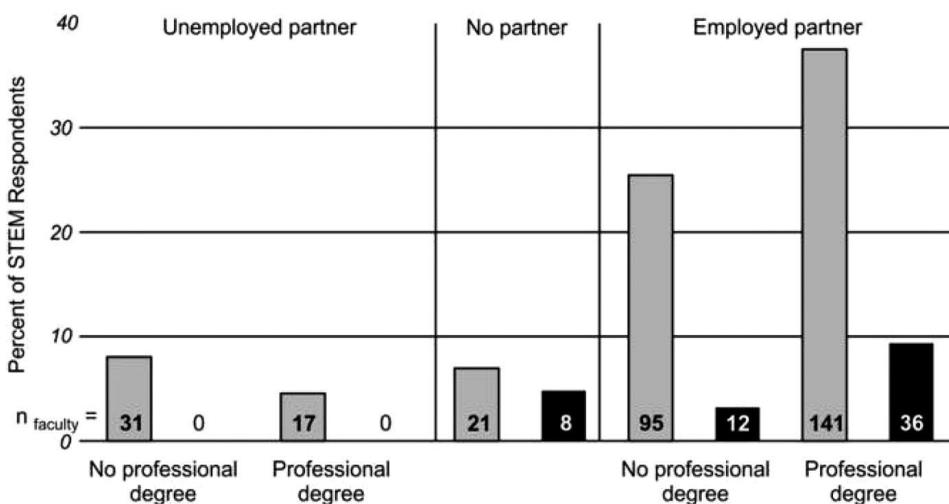


Figure 1. Numbers of Faculty Respondents in Each Category of Partnership Status.

professional demands will have the highest need for flexible work-life policies. The patterns reported here negate the assumption that flexible work-life policies are necessary for women faculty only, and instead reinforce the notion that few faculty members fit the historical implicit ideal.

In Table 1 we summarize the characteristics of faculty in various relationship types by providing means for continuous variables and proportions for categorical variables. We categorize characteristics by demographic characteristics, work-life integration, and policy variables. The mean age across all groups was 51 years, with a range of 27–78. Substantially more men than women are full professors for each category as well. For example, in the category of couples in which the partner does not have an advanced degree, 64% of the men and 25% of the women are full professors. The pattern is similar for the other categories, but the percentage of single men who are full professors is lower (35%) than men in the other categories. Less than one fifth of the faculty who are single, men or women, have children (men = 19%, women = 17%). Most of the faculty members in relationships have children, but the proportion ranges from 58% to 81% across the categories. Among faculty with a partner who has a professional degree, fewer women (58%) than men (74%) have children. Mean total work hours (includes teaching, research, service, and consulting) varied little between categories—the lowest was $M = 50.43$ hours for STEM with employed partners with professional degrees. The most productive group is single men (67% have 6+ publications) and the least productive group is single women (38% have 6+ publications). Salaries differ considerably between groups—in part corresponding to the percentage who are full professors. For all of the partnered men, mean salaries are over \$100,000. For all of the women, mean salary is less than \$90,000. Average hours spent on unpaid labor at home (including food prep, yard work, laundry, dependent care, etc.) and spouse/partner hours at work vary considerably between groups. For all of the groups, women report more hours of home responsibilities than men.

Consistent with the idea that the academy is designed assuming that the faculty will not have care responsibilities, we find that men with an unemployed partner had the lowest average family to work interference (2.17). Among faculty with professional employed partners there is little difference in family support ($W = 4.51$, $M = 4.60$). Family to work interference was highest for women faculty with an employed partner without a professional degree (3.04), followed by men and women faculty with an employed partner with a professional degree (both 2.82). Men faculty with an unemployed partner, the “ideal worker,” were the most satisfied (4.47)

Table 1. Demographic Characteristics and Work/Life Satisfaction by Relationship Type.

	Unemployed Partner				No Partner				Employed Partner			
	No professional degree		Professional degree		No professional degree		Professional degree		No professional degree		Professional degree	
	M	W	M	W	M	W	M	W	M	W	M	W
N = 361	31	0	17	0	21	8	95	12	141	36		
Percentage STEM faculty	8.6%	.0%	4.7%	.0%	5.8%	2.2%	26.3%	3.3%	39.1%	1.0%		
<i>Demographic characteristics</i>												
Age	52.81		52.76		44.64	45.06	53.14	37.92	5.72	44.86		
Proportion full Prof.	.52		.53		.35	.11	.64	.25	.56	.25		
Proportion with any children	.81		.69		.19	.17	.77	.75	.74	.58		
Total work hours	5.77		5.62		54.77	56.19	51.21	54.00	55.24	5.43		
Proportion with >six pubs between, 2008 and 2011	.45		.65		.67	.38	.56	.50	.59	.53		
Total budgeted salary	\$100,120		\$104,451		\$97,846	\$82,849	\$117,056	\$87,885	\$102,790	\$83,155		
Typical hours home/family responsibilities	19.77		15.94		2.54	17.89	18.13	34.42	2.52	25.43		
Spouse/partner work hours	.00		.00				31.53	48.92	4.77	51.06		
<i>Work/life balance</i>												
Family/work interference	2.16		2.62				2.53	3.04	2.82	2.82		
Family support	4.92		4.82				4.89	3.83	4.60	4.51		
Department satisfaction	4.47		4.06		3.92	3.17	3.91	4.25	3.77	4.00		

followed by women with an employed partner with a professional degree (4.25). The least satisfied were single women (3.17) and women with an employed partner without a professional degree (3.91). Men who fit the ideal norm receive the highest family support ($M = 4.92$), although the mean is slightly lower for men with professional partners who are unemployed ($M = 4.82$). The biggest gender difference is between faculty members with nonprofessional employed partners—the women ($M = 3.83$) receive much less family support than the men ($M = 4.89$).

The ideal-worker-norm assumes that faculty do not have to deal with childcare demands, therefore, women will be less likely to have children, or children will interfere more with their careers. We find the proportion of faculty with children is similar across gender/partner employment statuses (Figure 2). Men who fit the ideal-worker-norm are the most likely to have children ($M = .81$); the proportion is slightly lower for men whose wives have a professional degree ($M = .69$). For both men and

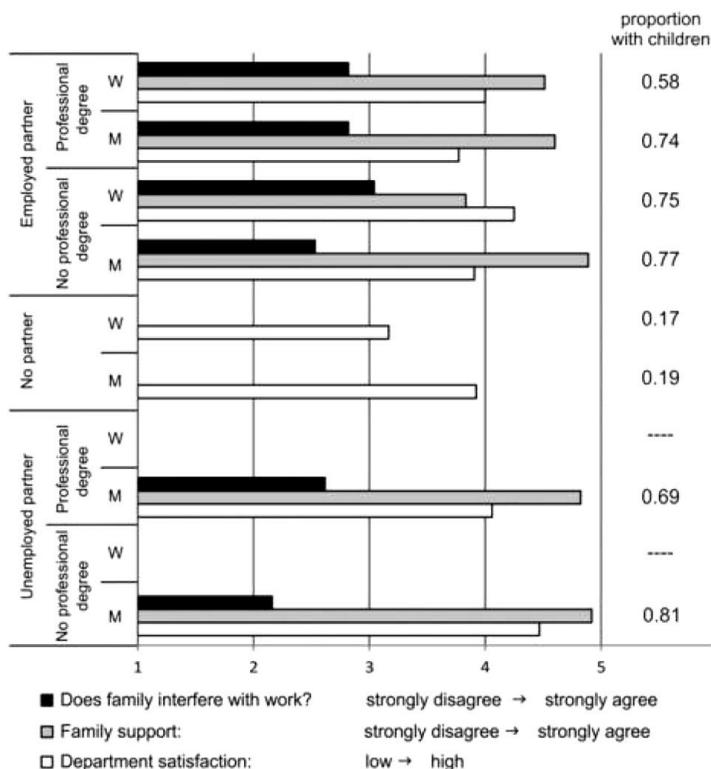


Figure 2. Proportion of Faculty Respondents with Children and Responses To Satisfaction Queries.

women without partners, the proportion with children is low (Men $M = .19$, Women $M = .17$). The biggest difference in the proportion of men and women faculty with children is among those with professional partners (Men $M = .74$, Women $M = .58$, difference = $.16$). These results are consistent with those found by Mason and Goulden (2004a, 2004b), who showed that only one in three women who takes a tenure-track university job before having a child ever becomes a mother.

Consistent with the assumption that men who fit the norm will have the least family interference, the family to work interference mean is lowest for this group ($M = 2.16$), despite that they are more likely to be parents (Figure 2). Women who have nonprofessional employed husbands have the highest mean family to work interference ($M = 3.96$), and they have more children than women with professional employed husbands. Overall reports of family to work interference are low (below the midpoint of 3). The overall pattern is consistent with the expectation that faculty who better fit the ideal-worker-norm situation will have lower family to work interference, but complicated by the differences between those with nonprofessional/ professional partners and by gender.

Perceptions of family support also differ by gender and fit with the ideal-worker-norm (Figure 2). As expected, men who fit the norm receive the highest support ($M = 4.92$), although the mean is slightly lower for men with professional partners who are unemployed ($M = 4.82$). The biggest gender difference is between faculty with non-professional employed partners—the women ($M = 3.83$) receive much less family support than the men ($M = 4.89$). Among faculty with professional employed partners there is little difference in family support ($W = 4.51$, $M = 4.60$). We did not expect that women with professional employed partners ($M = 4.89$) would receive more family support than women with nonprofessional employed partners ($M = 3.83$). In addition, we were surprised that men with nonprofessional employed partners would have scores similar to men with professional unemployed partners.

Is the fit with the ideal-worker-norm associated with work satisfaction? We also assumed that men who fit the profile will have the highest department-level satisfaction (Figure 2), and they do. We anticipated a steady decline in satisfaction for faculty further from this ideal, but do not find that. Instead, women without partners have the lowest department satisfaction, but there are few differences between women and men with employed spouses. Similar to the other outcomes, women with non-professional employed partners are a little bit different—in this case, they have a little bit higher satisfaction.

We also evaluated the assumption that faculty closer to the ideal-worker- norm will spend more time at work, be more productive, and have higher pay. This assumption is based on the idea that having full time athome family support facilitates greater dedication to the job.

We first examine work hours. Faculty in all categories report over 50 paid work hours a week (Figure 3). Contrary to the assumption, men in idealworker- norms report fewer hours per week ($M = 51$) than faculty in most other categories. Consistent with what we expected, women with a professional employed partner report the fewest hours, but the differences are very small between faculty groups. Also consistent with expectations, men with unemployed partners spend the least amount of time on domestic work, but the differences between these groups are small, a pattern similar to that in the wider workforce (Bianchi, Milkie, Sayer, & Robinson, 2000). There are larger differences between women. Contrary to expectations, women with nonprofessional employed partners report the most time on domestic work, perhaps to compensate for counter-gender-norm.



Figure 3. Self-Reported Paid and Home Work Hours for Women and Men by Partner Employment Status.

These results may indicate that these women are unconventional earners who are compensating in their partnerships for their higher occupational status (Tichenor, 2005).

Discussion

For over two decades gender and organization scholars have been unpacking Acker's (1990) notion that gendered assumptions are built into the way that jobs and hierarchies are structured (Britton & Logan, 2008). Efforts to change the job expectations for pre-tenure faculty to allow for longer time to tenure for those with child care responsibilities provide an important corrective to the model that assumed no childcare responsibilities. Yet creating programs that are sold as "for women" can create new problems for women in STEM fields. For example, many women in STEM fields want to de-emphasize gender and make their science, technology, engineering, or math identity more salient. When "family friendly" is the code for "special treatment for women" they could be hurt more than helped (Flaherty Manchester, Leslie, & Kramer, 2013). Based upon broader demographic trends in dual-career couples and research on greater egalitarian gender expectations for co-parenting, we explored just how many faculty fit the presumed "ideal worker."

What we found was that the idea that most STEM faculty are men with a full time homemaker wife should be history. Most jobs are designed with assumptions about the nonwork related characteristics of likely occupants (Britton & Logan, 2008) and professors are no exception. The notion that faculty members would not be encumbered by family demands was built into the job when the AAUP adopted the six-year probationary period for tenure (Gappa et al., 2007), inadvertently overlapping the tenure clock with women's biological clocks (De Wet, Ashley, & Kegel, 2002). Only a small percentage of faculty currently have a relationship situation that matches the assumptions built into the job. As illustrated in the data from this large, Midwestern Research-intensive institution, most faculty, similar to many Americans (Bianchi et al., 2000), have employed partners. Therefore, increasing the flexibility of the academic workplace is not a "women's issue" — it is a faculty issue. Men with employed partners report that family responsibilities interfere with work time and have lower satisfaction with department work-life policies than their women counterparts. Part of this dissatisfaction may arise from well-documented

pressures on men faculty to not use work-life balance policies nor to spend work time dealing with family issues, including family emergencies (Drago et al., 2006).

Instead of adding programs and policies to help women manage home and work demands, we agree with those who urge the need to rethink faculty work and academic institutions entirely (Gappa et al., 2007). Most current faculty members do not have partners who will take care of all of their home needs while they focus on their academic work. It is high time to increase the flexibility of the academic workplace, particularly by flexing the requirement that tenure can only be achieved through a full-time appointment with a 6-year probationary period. It is time to recognize that most of our current faculty members—men and women—juggle family responsibilities and their need for flexibility of work responsibilities, is unlikely to subside in the future.

More flexibility in the academic workplace means adopting work-life balance policies and practices that include flexing the tenure clock (stop-the-tenure-clock), creating tenure-leading positions that are part-time or temporarily part-time, providing meaningful parental leave for childbirth and for adoptions, constructing childcare and lactation facilities, and accommodating faculty's working partners. In addition, it means making a culture in which exercising these practices—usually for a short time for a faculty member's overall career—normative and equally accessible for men and women (Drago et al., 2006). More work-life support also addresses the fact that many faculty members have partners with professional degrees that want appropriate employment, that is, the dual career opportunity. Nationally, most women faculty have an academic or professional partner: 54% of women faculty overall and 83% of STEM women faculty (Schiebinger, Henderson, & Gilmartin, 2008). Holmes (2012) describes a pragmatic approach to facilitating dual career hiring for academic institutions that should create win-win situations for faculty members and institutions. In addition, faculty must travel to build international reputations and to do collaborative work; therefore parents of young children are likely to need extra support, including reimbursement for childcare or assistance in bringing an extra child-care provider (nanny or family member) to the conference or field.

Although many universities have adopted some, most, or all of these practices, faculty find it difficult to exercise them, particularly pre-tenure faculty (Drago et al., 2006). In day-to-day practice, we find faculty only vaguely informed of the existence of such policies and uncertain about how to implement them. If a younger faculty member wishes to use them,

senior faculty are at a loss as to how to evaluate any alteration from the standard six-year tenure clock. Administrators bear the full responsibility of informing faculty of these policies' existence (Gunsalus, 2006). A single e-mailing, notice on the website, or paper brochure in the mailbox does not suffice. Repeated blasts of information followed up by workshops on implementation are necessary to make these policies mainstream. In addition, administrators must help faculty work out the implementation of such policies within colleges and departments. Universities often have incongruous, gendered, bureaucratic structures that allow for a large disconnect between University policy and actual practice in a department (Bird, 2011). Therefore, mission statements and policies can have tenuous correlations with day-to-day workings in departments. Many department cultures are impervious to top-down declarations and more influenced by historical precedents, discipline-specific norms, and department chair leadership (Fox, 1995). Yet when administrators hold chairs and departments accountable for best practices, there is more evidence of change (Reskin, 2003).

For many years ADVANCE institutions have asked, "How should institutions of higher education be structured to increase the number of women STEM faculty?" We suggest that this question constrains our thinking. Instead we ask: "How should institutions of higher education be structured to match the current reality of faculty members, most of whom have employed spouses?" As gendered expectations about who should be responsible for earning money and raising children shift, assumptions about who should occupy various jobs and how jobs should be structured should also shift. Questioning the assumptions of what it takes to be a successful STEM scientist could influence rethinking the expectations for structuring careers. Recognizing the overlap of prime childbearing/rearing and tenure track years suggests a simple fix: extend the time period. Fortunately this kind of change is happening in many colleges and universities. Recognizing that most faculty would benefit from such changes – both men and women – is helping for pushing a rethinking of faculty work (Gappa et al., 2007). We look forward to seeing additional efforts to rethink faculty work arrangements in ways that should help to attract and retain diverse, talented scholars to the academy.

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References

- Acker, J. (1990). Hierarchies, jobs, bodies: A theory of gendered organizations. *Gender and Society, 4*(2), 139–158.
- Acker, J. (2006). Inequality regimes gender, class, and race in organizations. *Gender and Society, 20*(4), 441–464.
- Askari, S. F., Liss, M., Erchull, M. J., Staebell, S. E., & Axelson, S. J. (2010). Men want equality, but women don't expect it: Young adults' expectations for participation in household and child care chores. *Psychology of Women Quarterly, 34*(2), 243–252.
- Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? Trends in the gender division of household labor. *Social Forces, 79*(1), 191–228.
- Bilimoria, D., & Liang, X. (2012). *Gender Equity in Science and Engineering: Advancing change in higher education*. Routledge Studies in Management, Organizations, and Society. New York, NY: Routledge.
- Bird, S. R. (2011). Unsettling universities' incongruous, gendered bureaucratic structures: A case-study approach. *Gender, Work and Organization, 18*(2), 202–230.
- Britton, D. M., & Logan, L. (2008). Gendered organizations: Progress and prospects. *Sociology Compass, 2*(1), 107–121.
- Callister, R. R. (2006). The impact of gender and department climate on job satisfaction and intentions to quit for faculty in science and engineering fields. *The Journal of Technology Transfer, 31*(3), 367–375.
- Casper, L., & Bianchi, S. (2002). *Continuity and change in the American family*. Thousand Oaks, CA: Sage.
- Damaske, S., Ecklund, E. H., Lincoln, A. E., & White, V. J. (2014). Male scientists' competing devotions to work and family: Changing norms in a male-dominated profession. *Work and Occupations*. Abstract. Available online before print. Retrieved from <http://wox.sagepub.com/content/early/2014/08/07/0730888414539171>. Accessed on August 7, 2014.
- De Wet, C. B., Ashley, G. M., & Kegel, D. P. (2002). Biological clocks and tenure timetables: Restructuring the academic timeline. *GSA Today, 12*(11), 1–7.
- Drago, R., Colbeck, C. L., Stauffer, K. D., Pirretti, A., Burkum, K., Fazioli, J., ... Habasevich, T. (2006). The avoidance of bias against caregiving the case of academic faculty. *American Behavioral Scientist, 49*(9), 1222–1247.
- Flaherty Manchester, C., Leslie, L. M., & Kramer, A. (2013). Is the clock still ticking? An evaluation of the consequences of stopping the tenure clock. *ILRRreview, 66*(1), 1.
- Fox, M. F. (1995). Women and scientific careers. In S. Jasanoff, G. E. Markle, J. C. Petersen, & T. Pinch (Eds.), *Handbook of scientific and technology studies* (pp. 205–224). Thousand Oaks, CA: Sage.
- Fox, M. F. (2008). Institutional transformation and the advancement of women faculty: The case of academic science and engineering. In J. C. Smart (Ed.), *Higher education* (pp. 73–103). Amsterdam, The Netherlands: Springer.
- Gappa, J. M., Austin, A. E., & Trice, A. G. (2007). *Rethinking faculty work: Higher education's strategic imperative*. San Francisco, CA: Jossey-Bass.
- Gatta, M. L., & Roos, P. A. (2004). Balancing without a net in academia: Integrating family and work lives. *Equal Opportunities International, 23*(3–5), 124–142.

- Gerson, K. (2010). *The unfinished revolution: How a new generation is reshaping family, work, and gender in America*. New York, NY: Oxford University Press.
- Gunsalus, C. K. (2006). *The college administrator's survival guide*. Cambridge, MA: Harvard University Press.
- Holmes, M. A. (2012). Working together. *Nature*, 489(7415), 327–328. Jacobs, J. A. (2004). Presidential address: The faculty time divide. *Sociological Forum*, 19(1), 3–27.
- Kaminski, D., & Geisler, C. (2012). Survival analysis of faculty retention in science and engineering by gender. *Science*, 335(6070), 864–866.
- Lareau, A. (2002). Invisible inequality: Social class and childrearing in black families and white families. *American Sociological Review*, 67(5), 747–776.
- Mason, M., & Goulden, M. (2004a). Do babies matter (Part II). *Academe*, 90(6), 11–15.
- Mason, M., & Goulden, M. (2004b). Marriage and baby blues: Redefining gender equity in the academy. *The Annals of the American Academy of Political and Social Science*, 596(1), 86–103.
- Metzger, W. P. (1965). Origins of the association: An anniversary address. *AAUP Bulletin*, 51(3), 229–237.
- Misra, J., Lundquist, J. H., & Templer, A. (2012, June). Gender, work time, and care responsibilities among faculty. *Sociological Forum*, 27(2), 300–323.
- Reskin, B. (2003). Motives and mechanisms in modeling inequality. *American Sociological Review*, 68, 1–21.
- Ridgeway, C. L. (2011). *Framed by gender: How gender inequality persists in the modern world*. Oxford: Oxford University Press.
- Risman, B. J. (1999). *Gender vertigo: American families in transition*. New Haven, CT: Yale University Press.
- Rosser, S. V., & Chameau, J. L. (2006). Institutionalization, Sustainability, and Repeatability of ADVANCE for Institutional Transformation. *The Journal of Technology Transfer*, 31(3), 335–344.
- Schiebinger, L. L., Henderson, A. D., & Gilmartin, S. K. (2008). *Dual-career academic couples: What universities need to know*. Stanford, CA: Stanford University.
- Tichenor, V. (2005). Maintaining men's dominance: Negotiating identity and power when she earns more. *Sex Roles*, 53(3), 191–205.
- Watanabe, M. (2010). Gender and race differences in job satisfaction and commitment among STEM Faculty: The influence of network integration and work-family balance.
- Williams, J. (2001). *Unbending gender: Why family and work conflict and what to do about it*. New York, NY: Oxford University Press.
- Xie, Y., & Shauman, K. A. (2003). *Women in science: Career processes and outcomes*. Cambridge, MA: Harvard University Press.

