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Asked More Often: Gender Differences in Faculty Workload in Research Universities and the Work Interactions That Shape Them

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Guided by research on gendered organizations and faculty careers, we examined gender differences in how research university faculty spend their work time. We used time-diary methods to understand faculty work activities at a microlevel of detail, as recorded by faculty themselves over 4 weeks. We also explored workplace interactions that shape faculty workload. Similar to past studies, we found women faculty spending more time on campus service, student advising, and teaching-related activities and men spending more time on research. We also found that women received more new work requests than men and that men and women received different kinds of work requests. We consider implications for future research and the career advancement of women faculty in research universities.

KEYWORDS: gender differences, faculty, workload, time diary, workplace interactions

Scholars have gained important insights into how organizational workplaces, including research universities, reflect and maintain gendered inequalities (Acker, 1990, 2006; Avent-Holt & Tomaskovic-Devey, 2012; Britton, 2000; Dinovitzer, Reichman, & Sterling, 2009). Such scholars begin from the premise that orientations to and decisions about discretionary work activity, such as campus service, teaching and mentoring, and research, are neither stable nor biologically determined (Acker, 1990; Smith, 1990). Rather, gendered roles and practices stem from historical

patterns related to the division of labor in organizations, and socialization toward gender norms and expectations (Smith, 1990). Specifically, Acker's (1990, 2006) theory of gendered organizations highlights the ways in which divisions of labor and workload maintain and perpetuate gender inequality through role models, recognition systems, and routine interactions between individuals within the organization. The purpose of this study was to examine gender differences in higher education faculty workloads in research universities and the everyday workplace interactions that produce differences, with a particular emphasis on campus service.

Research on faculty workload found conflicting results regarding gender differences. Many studies indicate that factors associated with the amount of time faculty spend on different work activities include individual attributes and work contexts such as gender (Acker & Armenti, 2004; Winslow,

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2010), race/ethnicity (Baez, 2000; Griffin, Pifer, Humphrey, & Hazelwood, 2011), the intersection of race/ethnicity and gender (Griffin & Reddick, 2011), career stage (Misra, Lundquist, Holmes, & Agiomavritis, 2011; Neumann & Terosky, 2007), and institutional type (Tierney & Minor, 2004). Specifically, the vast majority of studies found that female faculty and faculty of color engage in more campus service than their White male colleagues and that this difference becomes more pronounced as faculty move along in their careers and focus more on teaching and teaching-related activities (Acker & Armenti, 2004; Carrigan, Quinn, & Riskin, 2011; Clark & Corcoran, 1986; Link, Swan, & Bozemann, 2008; Misra et al., 2011; Park, 1996; Winslow, 2010). Moreover, the kinds of campus service that women engage in are often less prestigious, more time-consuming, or "token" (Misra et al., 2011; Mitchell & Hesli, 2013; Porter, 2007; Twale & Shannon, 1996). Several studies, however, contradict these findings by showing that only a few gender differences in workload remain significant after controlling for variables such as rank, discipline, career stage, and institutional type (see Mitchell & Hesli, 2013; Porter, 2007; Singell, Lillydahl, & Singell, 1996). Conflicting findings seem to stem from scholars using different methods, controlling for different sets of variables, and not accurately accounting for all kinds of academic labor.

There are in fact important weaknesses of past studies of faculty workload. First, most faculty workload studies do not count "smaller" work activities such as writing letters of recommendation, mentoring a faculty member in one's department, and ad hoc requests by campus colleagues favoring instead reports of courses taught and publications completed. Second, most workload studies limit reporting to a single snapshot assessment, such as a one-time accounting of a past year's activity the day the survey or interview is conducted. Requiring faculty to estimate their activities retrospectively over a long period of time increases the likelihood of slippage and inaccuracy in accounting. Third, most studies of faculty workload leave out the processes by which workload is produced such as workplace interactions where faculty volunteer, are asked to engage in work activities, and make responses to requests. Although it has been well-argued that faculty are increasingly "managed professionals" (Rhoades, 1998, p. 4) with fewer choices about how they spend work time, it is also true that there is much discretion and choice built into the organization of tenure-track faculty workloads in research universities (Blackburn & Lawrence, 1995; Tierney & Bensimon, 1996). Given this, it is critical to understand workplace interactions that shape faculty workload.

In this study, we examined gender differences in how research university faculty spend their work time. We aimed to understand faculty work activities at a microlevel of detail, as recorded by faculty themselves over 4 weeks. We also explored the kinds of work requests made of faculty and who was making the requests. We studied faculty responses to work

requests and faculty reasons for those responses. Our examination of workload and processes shaping it was guided by research on gendered organizations and faculty careers.

Guiding Perspectives

We were guided by research on faculty careers within U.S. research universities and factors that influence how faculty spend their time (Blackburn & Lawrence, 1995; Fairweather, 1996; Tierney & Bensimon, 1996). Acker's theory of gendered organizations and gendered divisions of labor (Acker, 1990, 2006), Bird's (2011) view of academic institutions as cases of gendered bureaucracy, and Smith's (2005) conception of ruling relations helped us further contextualize ways in which men and women faculty might find themselves spending different amounts of time on various work activities despite operating in similar reward systems.

Although it is beyond the scope of this study, we further recognize that faculty workloads are influenced by social and institutional forces shaping higher education institutions, among other organizations (Ylijoki, 2013). Some of these forces include globalization, technology, and neoliberal ideologies. Such aspects of modern academic life speed up and intensify work in today's university and the ways in which academics work across sites in the United States and around the world (Grummell, Devine, & Lynch, 2009). Some examples are new automated advising and admissions programs or requirements for annual posttenure and graduate outcome assessments. Such new requirements take over faculty time that was previously dedicated to other tasks or add to the amount of time faculty work (Grummell et al., 2009). These new demands can come from external mandates for greater accountability, institutional efforts to mimic aspirational peers, or cost-cutting measures. Regardless of the source, an acceleration of academic work can lead to an overextension of faculty and the dissolution of work-life balance (Gill, 2014; Ylijoki, 2013).

Demographic and Structural Influences on Workload

Among the many predictors of faculty workload and time allocation are institutional type, discipline, gender, critical mass of women in a work environment, race, and rank (Blackburn & Lawrence, 1995; Carrigan et al., 2011; Link et al., 2008; Winslow, 2010). These factors are not independent from the gendered nature of higher education organizations but are embedded within and are shaping the power relations and decision-making of these gendered bureaucracies (Bird, 2011). For the purpose of this study, we focus on structural influences of gender and rank. Although we were not able to examine race in this study, many studies have shown the disproportionate amount of service completed by faculty of color based on service to student groups of the same background, a desire to have diverse faculty on committees, and

because of faculty commitments to student development and mentoring (Antonio, 2002; Baez, 2000; Griffin & Reddick, 2011; Umbach, 2006). Intersectionality is important to consider as well, as women of color may be involved in more campus service based on the intersection of gender and race (Griffin & Reddick, 2011).

Gender is argued to be "embedded in the structure of academic careers" (Winslow, 2010, p. 786). Faculty decide how they will allocate time based on gender socialization, perceived expectations, preferences, commitments, and everyday work interactions within gendered department contexts (Acker & Dillabough, 2007; Blackburn & Lawrence, 1995; Winslow, 2010). Therefore, gender has long been a predictor of faculty allocation of time to different work activities (Bellas & Toutkoushian, 1999; Carrigan et al., 2011; Link et al., 2008).

Rank also plays a key role in predicting faculty workload because expectations change from one faculty rank to another (Tierney & Bensimon, 1996). Assistant professors in research universities are generally expected to do less campus service and teaching, so they can focus on research, which counts most for tenure in research university reward systems (Trower, 2012; Ward, 2003). It is important to note though that this is often not the case for faculty of color for reasons previously mentioned. Associate professors, on the other hand, tend to have the heaviest campus service and teaching workload (Misra et al., 2011; Modern Language Association of America, 2009; Neumann, 2009; Neumann & Terosky, 2007; Stout, Staiger, & Jennings, 2007; Valian, 1998). Rank also influences the opportunities that faculty have to serve on certain committees. Full professors may have access to high profile and more valued service roles than assistant and associate professors (Tierney & Bensimon, 1996). There is, however, a relationship between gender and rank (Xu, 2012). Male faculty hold a higher percentage of highly ranked positions and women are more likely than men to leave academic positions before reaching higher ranks (Xu, 2012). Therefore, to understand gendered divisions of labor in time devoted to teaching and service versus research, it is important to examine rank and gender side by side.

Work Interactions That Shape Workload

In the previous section, we outlined demographic and structural factors that shape workload. In other words, being a woman or being an associate professor has been found to predict faculty time allocation to different roles. Another important consideration is how and why such factors shape the way faculty spend work time. This is where Acker's (1990, 2006) work on gendered organizations and Smith's (2005) work on "ruling relations" are helpful.

Acker's (1990, 2006) theory of gendered organizations posits that all contemporary organizations, including research universities, are gendered, meaning they are organized in ways that create and reproduce inequality

for women when compared to men. This occurs in many ways, but for the purposes of this study, we focus on how work is assigned or taken up by workers and valued by the organization. In gendered organizations, men are positioned in locations of greater organizational power and women in more vulnerable, peripheral, or undervalued positions (Kanter, 1977). This takes place through hierarchy and titles but also through the nature of work employees do and whether that work is considered skilled or unskilled (Acker, 1990). For example, in many organizations, women managers are more often responsible for tasks that are widely defined as organizational housekeeping, while men are more often tasked with problem-solving, visioning, and strategic planning (Acker & Dillabough, 2007; Ely & Meyerson, 2000). In these cases, a division of labor wherein women are engaged in unskilled labor and men in skilled tasks reproduces gendered assumptions about their value and capabilities as workers. Likewise, many feminist scholars have observed that academic reward systems do not value institutional housekeeping and campus service activities, which have become defined as "women's work" (Acker & Armenti, 2004; Clark & Corcoran, 1986; Park, 1996). Research and work in professional societies and for journals, often considered "cosmopolitan" faculty activity, are likely to add to one's prestige in a field as well as the institution's, whereas teaching and service are considered "local" contributions, less likely to add to the stature of individual faculty (Rhoades, Kiyama, McCormick, & Quiroz, 2008). Thus, gendered organizations place greater value on work more often taken up by men and less value on work more often taken up by women.

However, in turning to how work is "taken up," it is important to note that both women and men faculty have agency and make choices (Baez, 2000; Neumann, 2009). Most faculty in public research universities negotiate their workload from agreed upon parameters within their departments for course load, expected external grant funding, and general service expectations. However, experiences differ beyond this common template, which explains differences in workload. Feminist standpoint theorist Dorothy Smith (2005) offers a concept helpful to framing how workplace interactions might differ for women and men in a gendered university. Smith (2005) observes that men and women are subject to different "ruling relations," or the organization of people by hierarchies and privilege into work experiences (p. 13). Ruling relations in this context could include campus policies and practices requiring that a woman or person of color serve on search committees but not necessarily on campus APT committees. Such arrangements make it more likely for women and faculty of color to be invited to serve on search committees than male White peers as there are generally more White male faculty to invite. Ruling relations can be general sets of expectations about what is possible and legitimate (e.g., membership in campus APT committees being only full professors), social interactions embedded with power (e.g., a department chair asking an associate

professor who wants to advance to lead the department's accreditation review), and the way in which certain groups, like women, are expected to play certain roles (e.g., academic mother) (Smith, 2005). All three kinds of ruling relations could lead to cumulative disadvantage (Merton, 1968) for women's careers. In sum, there are formal and visible aspects of research university cultures and organization as well as informal norms and expectations that shape workplace interactions likely to result in gender differences in workload. This could play out in at least three ways.

First, women faculty may choose to engage in more teaching and service than men. Most research studies exploring gender inequality in faculty workload begin from the premise that women are assigned more campus service and advising than men, as opposed to women faculty seeking out certain activities to impact issues and groups they value. Yet this is often the case. Being involved in teaching and campus service may be a form of agency to influence their programs and diversity issues in ways that are important to women (Baez, 2000; Griffin, Bennett, & Harris, 2013; Griffin & Reddick, 2011; Stanley, 2006; Turner, 2002; Umbach, 2006). Acker and Feuerverger (1996) found that women faculty strongly believed in improving their academic programs, supporting colleagues and students, and being good citizens of their department, though they felt disappointed in male colleagues' lack of passion for these activities. Likewise, studies of women of color have found a personal commitment to mentoring and diversity work that might explain work choices (Griffin & Reddick, 2011; Griffin et al., 2011; Stanley, 2006; Turner, 2002). Determining whether women faculty choose to engage in this work out of personal interest is difficult, as they are influenced by gendered organizational practices and cultures. Tierney and Bensimon (1996) noted that engagement in teaching and service activities may help women feel less isolated and invisible in an environment where they are underrepresented and experience sexism. Therefore, differences in workload may occur by women volunteering for more teaching and service and men choosing to spend more time on research, but these "choices" occur within the context of and are shaped by existing hierarchies, power relations, and internalized gender roles.

Second, administrators and colleagues may invite women faculty more often than men to become involved in teaching and campus service. Research found that women are asked more often because administrators and colleagues want to add diversity to a committee, anticipate that women will say yes, perceive women as being good at teaching and service, and know that many women are deeply committed to the activities being pursued (Padilla, 1994; Tierney & Bensimon, 1996; Turner, 2002). Pyke (2015) highlighted that women may also be typecast as critical to caretaking and institutional housekeeping tasks and therefore asked more often to engage in teaching, advising, mentoring, and campus service. Social role theory indicates that the historical division of labor between women, whose

responsibilities revolved around the home, and men, who worked outside the home, has led to expectancies for male and female behaviors, which continue to be transmitted to future generations through socialization (Eagly, 1987). Gender stereotypes describe women as more concerned with the welfare of others, willing to accept other's directions, interdependent, and collective in their thinking, while men are seen as being more individualistic, self-reliant, and assertive (Cross & Madson, 1997). Society at large embraces these stereotypes and different expectations of women and men. Individuals, consciously and unconsciously, reinforce such expectations through micro-interactions with others. For example, students expect women faculty more than men to be helpful, approachable, available, and warm (Anderson, 2010; Basow, 2000). Women faculty may actually reinforce these expectations themselves as they report devoting more time than men to teaching-related involvements and to using student-centered pedagogies (Eagan & Garvey, 2015). When individuals do not live up to these gender stereotypes, they are often perceived in a negative light (Heilman, Wallen, Fuchs, & Tamkins, 2004; Rudman, 1998). For example, women, who are successful at traditional male tasks or embrace typically male traits and behaviors, are perceived as less likeable and may face personal derogation (Heilman et al., 2004). Because of social role expectations (Eagly, 1987), unconscious bias (Williams, 2003), and gender schema prevalent in society and higher education institutions (Valian, 1998), women may be asked more often than men to participate in teaching, advising, and academic house keeping and recognize they will suffer greater consequences for saying no.

Third, when asked to engage in new work activities, women may say yes more often than men for many reasons. For example, faculty may feel vulnerable in saying no to requests because they are of a lesser rank than the colleague asking them. Given women are underrepresented in higher ranks, many times the person asking women faculty to take on additional non-research-related work are men of higher rank. As noted earlier, women saying "no" to work requests may violate the requestor's gender stereotypes, causing the woman faculty member to be perceived as cold, selfish, and not a team player (Moss-Racusin & Rudman, 2010). Also, men and women differ in approaches to negotiation: Women tend to prefer job environments with set rules or understandings for compensation and resources for various activities over environments where compensation for various activities is ambiguous (Leibbrandt & List, 2012). In environments where such rules exist, there are few gender differences; in environments with ambiguity, men negotiate more. Many teaching and service tasks occur in ambiguous environments where it is not clear what rewards or penalties are associated with the decision to say yes or no. Even when women and men both say "yes," men may ask for more resources than women to support the additional work. One of the only studies to look at whether women are volunteering more for non-research-related work or are being asked more was Mitchell and Hesli's

(2013) cross-sectional survey of political science faculty. They found women faculty were asked to engage in service and said yes to requests more often, but women did not volunteer more often.

In sum, research on faculty careers and the gendered nature of universities indicates that gender, rank, and workplace interactions influence faculty work time. We wanted to explore how these factors impact faculty work time but enhance the literature by using time-diary methods. Also, we sought to understand whether, and if so how, new work requests were gendered.

Methods

We employed a modified time-diary approach to understand whether gender differences exist among associate and full professors in 13 universities that are members of the Big 10 Conference, the oldest Division I collegiate athletic conference in the United States, and the Association of American Universities. We specifically looked at (a) the amount of time faculty were spending on different work activities, (b) the number and kinds of new work requests faculty received each week, (c) who was making those requests, (d) faculty responses to work requests each week, and (e) the reasons faculty provided for their responses to work requests. Participants were first asked to complete an in-take survey that provided a general sense of their semester workload. Then, participants were asked to report time spent on weekly activities in an open write-in format. After collecting faculty responses, we coded the reported activities into categories of research, teaching, student and faculty advising, campus and professional service, and institutional housekeeping. At the end of the time-diary instrument for each week, we asked about work requests that the participants received. In this section, we describe our modified time-diary approach, sample and participants, analysis, and limitations.

Modified Time-Diary Approach and Instrument

Time-diary approaches have a long history in social science research to understand events that occur in a specific period of time and participant meaning-making about those events, in real time (Hofferth & Sandberg, 2001; Juster & Stafford, 1985). The time-diary method has been used reliably to study diverse topics such as how often parents read to children (Hofferth, 2006), the amount of leisure time of people living in poverty (Merz & Rathjen, 2014), and the relative amount of housework men and women complete (Bianchi, Sayer, Milkie, & Robinson, 2012). However, time diaries have not been a popular method in studies of faculty workload and time use. Most of these studies come from cross-sectional national surveys such as the National Study of Postsecondary Faculty (NSOPF), the Higher Education Research Institute's (HERI) Faculty Survey, and the Collaborative on Academic Careers in Higher Education's (COACHE) survey. Participants

are asked on a single occasion to estimate their workload allocation in broad categories over the last year or semester. This means that faculty participants are estimating their workloads up to 11 months from when work was done, and in broad brush strokes rather than in detail. In contrast, this study is one of the few illuminating work activities that participants are involved in throughout a 24-hour period. The time-diary approach used in this study has been gaining popularity over recall estimate (*stylized*) measures, because it provides more complete, systematic, rich, contextual, and less biased description of daily behavior (Juster, Ono, & Stafford, 2003; Robinson, Martin, Glorieux, & Minnen, 2011). Juster and Stafford (1985) first recognized that this 24-hour format provides the most precise and accurate time-use estimates. It allows faculty to record their work activities in their own language in real time as the activities are happening. Therefore, a time-diary approach offers a more comprehensive way of understanding gender differences in faculty time allocation and workload, because it allows us to study faculty work activities at a microlevel or in fine-grain detail, so that we can see whether differences exist in the kinds of work activities that women and men faculty are completing within each area of teaching, research, campus service, and professional service.

Our time-diary instrument asked participants to record their work activities in 5-minute increments. We also asked participants to avoid recording being on email alone as a task but to note the kind of task they were completing on email. Other than these two modifications, our instrument followed the typical time-diary form of asking participants to record their activities in their own language, chronologically, throughout or at the end of each day using 5-minute increments for 4 consecutive weeks.

Prior to completing the time diary, all participants completed an in-take survey, which included questions about background demographics (tenure status, discipline, marital status, and partner's employment status, whether they had dependents and how many) and work activities for the current academic semester (Spring 2014). Specifically, we asked about teaching (number of courses and advisees, dissertations, master's theses, and undergraduate capstone projects chaired), research and grant activity (numbers of articles, book chapters, conference papers submitted, presentations, manuscripts reviewed for journals, editorial positions, grants directed and submitted), on- and off-campus service activities (ongoing campus leadership roles, mentoring other faculty, number and kind of campus committees), and whether participants felt that overall the distribution of service work in their department was fair.

The in-take and weekly time-diary instruments were pilot tested with 10 research university faculty who served on an advisory board for this project. Feedback was received by email and conference calls, and minor revisions were made to instruments before they were approved by the authors' Institutional Review Board.

Participant Selection

We chose to study gender differences among associate and full professors, and exclude assistant professors, for several reasons. Many assistant professors, when looking at faculty as a whole and not focusing on faculty of color specifically, are protected from campus service assignments pretenure and have smaller course loads (Ponjuan, Conley, & Trower, 2011; Trower, 2012). This makes assistant professors different in some distinct ways from their posttenure colleagues as they can focus more time on research. Requests for many kinds of work activities (e.g., campus service, editorial positions, requests to present research) are likely to increase as one advances in career, and requests were a focus of our study. A recent study of time allocation in a research university environment found gender differences the greatest among tenured associate professors (Misra et al., 2011). Finally, several studies have noted gender differences in career advancement from associate to full professor with women faculty taking longer. These studies suggest gender differences in work time allocation may help explain time to advancement differences (Modern Language Association of America, 2009; Neumann & Terosky, 2007; Stout et al., 2007). For each of these reasons, we chose to study associate and full professors only.

We chose 13 Big 10 research universities as our setting because research universities are an institutional type with significant underrepresentation of women in higher ranks, where time spent on research and external funding matters most to advancement and career success (Curtis, 2011; Glazer-Raymo, 1999; Massachusetts Institute of Technology, 1999). The Big 10 institutions embodied within the Committee on Institutional Cooperation offered a subset of research universities that have similar public missions, external research funding, large faculties, and research and funding expectations for promotion and tenure (see http://www.cic.net).

Initially, we hoped to analyze faculty time allocation and critical mass of women in a discipline, using Xu's (2012) research design. Xu (2012) used National Research Council (NRC), National Science Foundation (NSF), and National Center for Education Statistics (NCES) data to create four categories of disciplines based on gender representation: those with 1%–25% of women faculty, 26%–50% of women faculty, 51%–75% of women faculty, and 76%–100% of women faculty (four disciplines chosen for each group). Thus, we invited men and women faculty from 16 different disciplines, hoping to have responses from disciplines where there tend to be more women, fewer women, and disciplines in between these extremes. Unfortunately, the final group of participants was not big enough to conduct this analysis but nonetheless represents faculty from 16 disciplines (see Tables 1 and 2 for the list of participant disciplines).

Table 1
Demographics, by Rank

		Associate Professors, % (n = 62)	Full Professors, % (n = 49)
Gender	Male	29.0**	59.2**
	Female	71.0**	40.8**
Disciplines	STEM total	24.2*	42.9*
	Engineering	14.5	20.4
	Mathematics	3.2	8.2
	Physics	1.6	6.1
	Biology	1.6	6.1
	Geology	3.2	2.0
	Non-STEM total	75.8*	57.1*
	Sociology	12.9	6.1
	Nursing sciences	8.1	6.1
	Special education	8.1	4.1
	Psychology	9.7	2.0
	Communication	6.5	6.1
	Foreign languages	6.5	4.1
	Speech-language pathology and audiology	4.8	4.1
	Teacher education	4.8	2.0
	Business administration	1.6	2.0
	Economics	0	2.0
	American literature	1.6	0
	Other	11.3	18.4
Race	Asian American	6.5	10.2
	Black/African American	1.6	4.1
	Hispanic	6.5	2.0
	White/non-Hispanic	85.5	83.7
Marital status	Married	87.1	87.8
	Divorced	4.8	6.1
	Separated	1.6	0
	Widowed	0	2.0
	Single	6.5	4.1
Spouse's employment	Works full-time at their institution	29.0	24.5
	Employed full-time elsewhere	30.6	14.3
	Works part-time at their institution	9.7	10.2
	Works part-time elsewhere	8.1	10.2
	Unemployed but looking for work	0	2.0
	Unemployed but not looking for work	9.7	16.3
	Student	0	2.0
	Retired	1.6	8.2
	Not applicable (no spouse)	11.3	12.2

*$p < .05$. **$p < .01$,

Table 2
Demographics, by Gender

		Women, % (n = 64)	Men, % (n = 47)
Rank	Tenured associate professor	68.8**	38.3**
	Tenured full professor	31.2**	61.7**
Disciplines	STEM total	25.0	42.6
	Engineering	14.1	21.3
	Mathematics	3.1	8.5
	Physics	3.1	4.3
	Biology	3.1	4.3
	Geology	1.6	4.3
	Non-STEM total	75.0	57.4
	Sociology	10.9	8.5
	Nursing sciences	12.5	0
	Special education	7.8	4.3
	Psychology	6.3	6.4
	Communication	0	10.6
	Foreign languages	4.7	6.4
	Speech-language pathology and audiology	6.3	2.1
	Teacher education	4.7	2.1
	Business administration	1.6	2.1
	Economics	0	2.1
	American literature	1.6	0
	Other	15.6	12.8
Race	Asian American	3.1	14.9
	Black/African American	1.6	4.3
	Hispanic	4.7	4.3
	White/non-Hispanic	90.6*	76.6*
Marital status	Married	82.8	93.6
	Divorced	7.8	2.1
	Separated	0	2.1
	Widowed	1.6	0
	Single	7.8	2.1
Spouse's employment	Works full-time at their institution	23.4	31.9
	Employed full-time elsewhere	34.4**	8.5**
	Works part-time at their institution	6.3	14.9
	Works part-time elsewhere	6.3	12.8
	Unemployed but looking for work	0	2.1
	Unemployed but not looking for work	6.3**	21.3**
	Student	1.6	0
	Retired	4.7	4.3
	Not applicable (do not have a spouse)	17.2**	4.3**

*$p < .05$. **$p < .01$.

Table 3
Invited Faculty and Participants by Gender, Rank, and Race

		Invited Faculty (N = 6,438)		Participants (N = 111)	
Gender	Male	4,713	73.2%	47	42.3%
	Female	1,712	26.6%	64	57.7%
	Gender not indicated	13	0.2%	—	—
Rank	Associate	2,402	37.3%	62	55.9%
	Full	4,036	62.7%	49	44.1%
Race	White faculty	5,138	79.8%	94	84.7%
	Faculty of color	1,170	18.2%	17	15.3%
	Race not decipherable	130	2.0%	—	—

Data Collection

We began data collection using a stratified sampling technique of randomly selecting a pool of 1,200 faculty balanced by gender, rank, and discipline with the goal of having a final sample of at least 300 participants. A sample of this size would enable us to control for gender, rank, and discipline in one model and to see significant differences, if present, along with a minimum detectable effect size. We chose to invite such a large number of participants because we knew under normal circumstances faculty responses to national surveys are typically around 25%–35% (Eagan & Garvey, 2015), but to complete a time diary for 4 consecutive weeks during a regular academic semester was a significant investment of time and energy and required an incentive. The length of the time diary significantly decreases the response rate: from over 50%–80% in a 1-day diary to 20%–25% in a 7-day diary, with the 7-day diary being the longest period for nationally representative time diaries ever collected (Fisher & Gershuny, 2015). Due to an initially low response rate, we had to increase the number of invitations up to 6,438 faculty (our entire original database). The demographics of those invited to participate are provided in Table 3. The demographics of the invited faculty are generally comparable to nationwide statistics of Research Universities with Very High Research Activity (RU/HV): In 2012, of all the tenure-track/tenured faculty at 108 RU/HVs, 68% were male and 32% female; 23% were assistant, 27% associate, and 50% full professors; and 70% were White faculty (Integrated Postsecondary Education Data System).

We sent faculty an email invitation with a link to participate in the Faculty Time Study. Participants were offered a $50.00 Amazon gift card if they completed an in-take survey and four weekly online time-diary surveys through Qualtrics. Our in-take survey acted as a screening device for participation in the weekly time-diary study. We asked participants if this was a typical semester for them or unusual work-wise, such as being on

sabbatical, being about to retire, being interim department chair, or on parental or sick leave. Out of 6,438 faculty who were invited to participate, 185 completed the in-take survey, but only 143 with a typical semester were eligible to participate further. Out of the 143 faculty, 15 participants completed 1 week of the time diary, 10 completed 2 weeks, 7 completed 3 weeks, and 111 completed all 4 weeks. In this paper, we report results from the 111 faculty participants who had a typical semester and completed both the in-take survey and 4 weeks of time diaries (for demographics, see Table 3).

Additional background characteristics can be found in Tables 1 and 2.

Data Analysis

First, descriptive statistics were calculated to determine the overall numbers and percentages of faculty involved in various work activities, work requests, and responses. Chi-squared statistics were calculated to determine whether the breakdown differed by gender or rank. One-way ANOVA analyses were conducted to determine whether there were significant differences in time spent on each type of weekly work activity based on gender and rank. To control for differences in time spent on reported activities depending on the week (when they spent less time on certain categories due to conference travel, exam week, etc.), we calculated the mean number of minutes and hours spent on each activity for all 4 weeks.

Then, controlling for gender and rank in the models, a regression analysis was conducted to determine significant differences in the main areas of work: research, teaching, student advising, faculty advising, professional service, campus service, institutional housekeeping, and total work hours. Interaction effects (Gender × Rank) were entered into the regression model for each work activity to test for significant interactions between the factors. When significant interactions were found, separate regression models were run by each group. Finally, regression analyses were conducted to estimate the effects of gender and rank on the number and kinds of work activity requests reported by faculty during the 4 weeks as well as the types of requestors and participants' responses to the requests.

Limitations

There were limitations to this research design. First, and most obviously, the selection of participants was not fully randomized due to the low response rate. Thus, when interpreting the results, one should keep in mind the demographic differences between the invited population and the final sample. Compared to the population of the invited faculty (n = 6,438), in the final sample (n = 111) women and associate professors were overrepresented, suggesting that faculty with higher service and/or teaching loads were more willing to participate. The final group was representative of

the population by race/ethnicity. As a result of the small final sample, we could not analyze findings by more than gender and rank. Additional contexts such as race and disciplinary categories are important contexts shown to influence faculty time allocation and should be analyzed in future research with a larger sample.

We acknowledge a possible existence of nonresponse bias in the study. Faculty participated on a voluntary basis, and we could only examine those who agreed to participate. We therefore do not know if the rest of the invited faculty declined to participate due to them being busier than the respondents or for other reasons. It is challenging to solicit research participation from email requests. This challenge was further compounded by the fact that we were soliciting participants who likely have significant demands placed on them (as tenured faculty in high-level research universities) and by the fact that the demands of the study (recording 5-minute intervals) were time-consuming.

Nonresponse bias is a function not only of the response rate but also of the differences between respondents and nonrespondents (Jowell, Roberts, Fitzgerald, & Eva, 2007). In fact, the response rate does not determine the level of nonresponse bias: A study with a very high response rate can still be subject to response bias if nonrespondents differ significantly from respondents, and vice versa (Menachemi, 2011). Although many factors, such as demographics, time, and willingness to participate, may contribute to nonparticipation, they do not all necessarily lead to response bias (Menachemi, 2011). Nevertheless, it is commonly accepted that a high response rate reduces response bias (Armstrong & Overton, 1977; Gore-Felton, Koopman, Bridges, Thoresen, & Spiegel, 2002; Leece et al., 2004).

Comparing demographics of respondents versus nonrespondents is the most common approach to test response bias (Armstrong & Overton, 1977; Etter & Perneger, 1997). Another approach involves comparing answers of participants who responded to different waves ("reminders") of the survey (Hikmet & Chen, 2003; Montori, Leung, Walter, & Guyatt, 2005). Our study design did not make comparing waves of participants possible, but the study design allowed us to compare demographics to infer about potential response bias.

Surveys requiring participant involvement over an extended period of time tend to suffer from a high nonresponse and attrition rate (Deng, Hillygus, Reiter, Si, & Zheng, 2013; Goldstein, 2009). We expected that recording every work activity in 5-minute increments over 4 weeks would present a challenge for faculty during the busy time of the year. However, we intentionally did not implement our time diary in the summer because faculty schedules may differ significantly from their typical work during a regular semester. Furthermore, we wanted faculty to record their work activities over a long enough time to control for differences in their schedules due to "unusual" weeks of travelling, conferences, etc. As such, the

length of the study was intentional but likely decreased the response rate. However, we also believe it helped to increase the accuracy of the reported workload. Analysis of reliability and validity of the time-diary method in several studies, even with small and unrepresentative samples, showed consistent, positive results about the basic generalizability of the data (Robinson, 1999). Thus, the time-diary approach is more comprehensive in recording work activities than methods used in past studies. Also, while the sample is not fully representative of a larger population of faculty, the data allow us to consider how gender may shape workplace interactions. The arguments developed in the paper can be further tested with more random samples in future research.

Despite these limitations, these data provide a comprehensive and unique portrait of the daily workload experiences of research university faculty to be built upon in future studies. To our knowledge, the only other studies to come close to this kind of inside view of faculty work are those done as structured observations where the sample was less random and the sample size much smaller (e.g., Colbeck, 2006, had 13 participants; Ziker et al., 2014, 30 participants). Thus, this study makes a novel and important contribution to the way faculty workload is studied.

Key Findings

Here we present findings regarding how our research university faculty spent their work time. Specifically, we present (a) how faculty allocated their time to teaching, research, and service; (b) the kinds of requests faculty received for new work activities and who the requestors were; and (c) the responses faculty gave to requests and their reasons for responses. As a reminder, we collected semester-long, ongoing workload data via an in-take survey and work time data, on a microlevel of detail, including (b) and (c) through weekly time diaries.

Faculty Time Allocated to Teaching, Research, and Service

In this section, we report statistically significant findings.

By gender. The in-take survey results showed statistically significant gender differences in many teaching, research, and service activities. For example, women were more likely than men to chair master's theses, comps papers, or undergraduate capstone projects in the current semester and to have submitted or to be planning to submit grants that semester. Men were more likely than women to serve as editor or associate/deputy editor of a journal and to have one or more submissions of journal articles that semester (Table 4).

Table 4
In-Take Survey Gender Differences in Teaching, Research, and Service

Activity	*M* (*SD*) or %	
	Women (n = 64)	Men (n = 47)
Teaching		
Master's theses, comps papers, or undergraduate projects chaired*	3.03 (4.55)	1.34 (1.68)
Professional service		
Faculty serving as a journal editor or associate/ deputy editor**	35.9%	68.1%
Research		
Faculty who had one or more submission(s) of this type of publication:		
Journal articles*	85.9%	97.9%
Faculty having or planning on submitting one or more grant(s)*	73.4%	51.1%

Note. Chi-square and ANOVA tests were conducted to determine statistical significance. All data refer to activities performed in a given semester.
*$p < .05$. **$p < .01$.

In their weekly activities, women reported more hours per week spent on reading dissertations, master's theses, capstone projects, and comps papers than men, while men reported spending more hours per week on lab, field work, and general research preparation than women, and total research activities. Men also reported spending almost twice as much time as women in professional conversations with colleagues (Table 5). We considered whether the intersection of gender and discipline influenced time spent on conversation with colleagues. Indeed, there were differences between the number of women (25%) in STEM vs. men in STEM (42.6%), however they were not significant. Therefore, we do not have enough evidence to find a correlation between the number of women in STEM, the time spent in labs with other colleagues vs. on their own, and professional discussion. There are women in STEM in our sample, and they were as likely to be based in a lab as men in STEM. Furthermore, while time spent in lab and professional communication may be correlated, these activities happened at different times. The activities coded in our study are unique to one category, such that the time reported being spent on professional conversations was not reported at the same time as (or as a part of) lab work but outside the lab activities.

A pattern of the in-take survey showing women spending more time teaching and advising students (Table 4) continued throughout the weekly survey (Table 5).

Table 5
Gender Differences in Time Spent on Weekly Work Activities, in Hours

	M (*SD*)	
Work Activity	Male	Female
Research		
Total research time**	16.13 (11.26)	10.21 (7.25)
Lab/fieldwork/general research preparation**	5.20 (5.69)	2.72 (3.15)
Teaching		
Reading dissertations/theses/capstone projects/ comps papers*	0.51 (0.84)	1.17 (1.93)
Faculty advising		
Professional conversations*	1.01 (1.10)	0.59 (0.63)

*$p < .05$. **$p < .01$.

By rank. The in-take survey results showed some statistically significant rank differences in teaching, research, and service workload. Full professors were more likely than associates to consider themselves a primary mentor for faculty at their institution, to serve as editor or associate/deputy editor of a journal, to serve as PI of active grants, and to make off-campus professional presentations. Overall, associate professors were less satisfied with the fairness of service work distribution in their department (Table 6).

In their weekly activities, full professors reported more total work hours than associate professors. Full professors spent more time than associate professors on research activities: manuscript preparation; lab, fieldwork, and general research preparation; research group meetings; and their research overall. Associate professors reported spending more time on teaching and advising than full professors: course administration and advising undergraduate students (Table 7).

Gender and rank together. In the overall regression models, gender was a significant negative predictor of time spent on research, controlling for rank, and rank was a significant negative predictor of time spent on research and total weekly work activities, controlling for gender. On average, women reported spending 355 minutes, or 5.92 hours, per week fewer than men on research (*Beta* = –.232, adjusted R^2 = .134, $p < .05$). Associate professors reported spending 367 minutes, or 6.11 hours, per week fewer than full professors on research (*Beta* = –.248, adjusted R^2 = .134, $p < .05$), and 323 minutes, or 5.38 hours, fewer on all types of work activities combined (*Beta* = –.243, adjusted R^2 = .047, $p < .05$).

While regression analysis showed statistically significant gender differences only in time spent on research, women reported spending more time on all other categories except for faculty advising. Particularly, we

Table 6
In-Take Survey Rank Differences in Teaching, Research, and Service

Activity	*M* (*SD*) Associate Professors (*n* = 62)	*M* (*SD*) Full Professors (*n* = 49)
Campus service		
Number of faculty at their institution that they consider themselves the primary mentor for*	1.21 (1.19)	1.84 (1.53)
Faculty who believe that the distribution of service work in their department is fair*	43.5%	67.3%
Professional service		
Faculty serving as a journal editor or associate/ deputy editor*	40.3%	61.2%
Research		
Grants as PI*	0.87 (1.17)	1.47 (1.94)
Off-campus professional presentation this semester**	1.73 (1.5)	2.73 (2.3)

Note. Chi-square and ANOVA tests were conducted to determine statistical significance. All data refer to activities performed in a given semester.
*$p < .05$. **$p < .01$.

Table 7
Rank Differences in Time Spent on Weekly Work Activities, in Hours

Work Activity	*M* (*SD*) Associate Professor	*M* (*SD*) Full Professor
Total work hours**	40.37 (10.06)	45.76 (10.76)
Research		
Total research time**	10.02 (6.71)	16.13 (11.49)
Manuscript preparation*	2.55 (3.02)	3.82 (3.60)
Lab, field work, general research preparation*	2.99 (3.30)	4.75 (5.65)
Research group meetings*	0.98 (1.27)	1.72 (2.13)
Teaching		
Course administration*	0.36 (0.61)	0.16 (0.47)
Student advising		
Advising undergraduate students*	0.29 (0.55)	0.13 (0.25)

*$p < .05$. **$p < .01$.

found that campus service, student advising, and institutional housekeeping categories had the largest positive standardized regression coefficients, which may be an indicator of the time spent on these categories eating up the time that would otherwise be spent on research. However, the

differences on each of these categories separately were not big enough to stand out as significant within the sample size. Yet when categories of campus service and student advising were combined, regression analysis showed statistically significant gender differences, specifically women spending 142 minutes, or 2.37 hours, more than men on these two categories together (*Beta* = .189), $F(1, 109) = 4.036$, $p = .047$.

The interaction of gender and rank was significant for time spent on research: The relationship between gender and time spent on research activities differed for associate and full professors. The model accounted for 14.5% of the variance (adjusted R^2) in time spent on research, $F(3, 107) = 7.236$, $p < .001$. There were no other significant interactions between gender and rank with regard to time spent on work activities. Based on the results of the interaction effect tests, separate regression models were run for associate and full professors on time spent on research. The results showed that gender was a significant, negative predictor for full professors but not significant for associate professors. The regression model for full professors accounted for 8.2% of the variance in time spent on research, $F(1, 47) = 5.275$, $p = .026$. Female full professors reported spending on average 441 minutes, or 7.3 hours, per week less on research activities than male full professors (*Beta* = −.318), $t(47) = -2.297$, $p = .026$.

Requests for New Work Activities: Kinds of Requests and Requestors

Number of requests. Women reported a total of 378 and men reported a total of 118 new work activity requests during the 4 weeks. Across all 4 weeks, women consistently received a significantly higher number of work activity requests than men, on average 3.4 requests more than men in 4 weeks combined. Associate professors reported a total of 294 and full professors reported a total of 202 new work activity requests during the 4 weeks.

Controlling for gender and rank, the overall regression models showed that gender was a significant positive predictor of the total number of new work activity requests (*Beta* = .271), $t(108) = -2.784$, $p = .006$, while rank was not found to be a significant predictor. The model accounted for 5.2% of the variance (adjusted R^2) in the number of requests, $F(2, 108) = 4.008$, $p = .021$. The gender differences persisted both for associate and full professors: Female associate professors ($M = 5.98$, $SD = 8.95$) were more likely than male associate professors ($M = 1.72$, $SD = 1.78$) to receive work activity requests, $F(1, 60) = 3.969$, $p = .004$; female full professors ($M = 5.75$, $SD = 5.29$) were more likely than male full professors ($M = 3.00$, $SD = 2.89$) to receive work activity requests, $F(1, 47) = 5.494$, $p = .044$.

Kinds of requests. Of the total 496 work activity requests reported by participants, over half of them were related to professional service (27.8%) and campus service (29%), followed by student advising (20.7%), faculty advising (10%), teaching (7.7%), and research (4.8%).

Table 8
Percent of Received Work Activity Requests, by Kind

Request Category	Male	Female	Associate	Full
Research	8.0%	3.8%	3.5%	6.6%
Teaching	6.3%	8.1%	8.1%	7.1%
Student advising	17.9%	21.6%	22.8%	17.8%
Faculty advising	8.9%	10.3%	11.6%	7.6%
Professional service	29.5%	27.3%	21.8%	36.5%
Campus service	29.5%	28.9%	32.3%	24.4%

Note. The percent is based on the group total: e.g., 8% of all work activity requests received by men over the 4 weeks are research-related.

Controlling for gender, rank, and total number of work activity requests, the overall regression models showed that associate professors received fewer requests than full professors in professional service (*Beta* = −.181), $t(107) = -2.809$, $p = .006$. The regression model for professional service requests accounted for 58.5% of the variance, $F(3, 107) = 52.609$, $p < .001$. Descriptive statistics of the kinds of requests by gender and rank are reported in Table 8.

Requestors. Students and former students of the participants (23.4%) and off-campus colleagues in the participants' field (23.6%) were the primary categories of requestors, followed by another administrator at their university (13.5%), a peer colleague on campus (11.9%), their department chair (7.8%), a senior colleague on campus (5.1%), and a junior colleague on campus (3.1%). Controlling for gender, rank, and total number of work activity requests, the overall regression models did not show significant differences in the categories of requestors by gender and rank of the participants.

Over the 4 weeks, men received most work activity requests from male requestors (61.3% of all requests received by male faculty came from men), while women received most requests from female requestors (56.8% of all requests received by female faculty came from women). Controlling for gender, rank, and the total number of work activity requests, the overall regression models showed that the differences were significant. The regression model for a female requestor accounted for an impressive 87.9% of the variance, $F(3, 107) = 266.847$, $p < .001$. Female faculty were more likely than men to receive requests from women (*Beta* = .072), $t(107) = -2.809$, $p = .006$. The regression model for a male requestor accounted for a large 83.7% of the variance, $F(3, 107) = 189.658$, $p < .001$, showing that female faculty are less likely than men to receive requests from men (*Beta* = –.096), $t(107) = -2.307$, $p = .023$.

Table 9
Reasons for Saying "Yes"

	Percentage of Study Participants
Reasons for saying "yes"[1]	
This will allow me to support an issue, group, or person I care about	28.4
There are professional benefits for me	18.9
I wanted to show I am a good citizen or team player	16.7
I did not want to disappoint or cause conflict with the person who asked	9.8
No one else, or no one else good, will volunteer to do it	6.3
I felt uncomfortable saying no	5.1
There could be negative repercussions for me if I said no	2.5
I have no idea why I said yes, I just did	0.4
Primary reason for saying "yes"[2]	
This would allow me to support an issue, group, or person I care about	41.7
There are professional benefits for me	13.3
I wanted to show I am a good citizen or team player	10.6
No one else, or no one else good, will volunteer to do it	4.7
I did not want to disappoint or cause conflict with the person who asked	4.4
I felt uncomfortable saying no	4.2
There could be negative repercussions for me if I said no	1.4
I have no idea why I said yes, I just did	0.8

[1]Participants were asked to select all reasons for saying yes to a new work request.
[2]Participants were asked to select the primary reason for saying yes to a new work request.

Faculty responses to requests and reasons for responses. Controlling for gender, rank, and total number of work activity requests, the overall regression models did not show statistically significant gender or rank differences in the number of times the participants chose the suggested reasons for saying "yes." However, we have provided descriptive statistics on the most popular reasons for responses to work activity requests in Table 9 (e.g., supporting important issues, professional benefits, being a good citizen).

Discussion and Implications

We examined how 111 research university associate and full professors spent their work time using time-diary methods. We found women faculty spending more time than men on campus service, student advising, and teaching-related activities and male faculty spending more time on research-related activities. Interestingly men spent almost twice as much time as women in professional conversations with colleagues in their field. Men also spent more time than women in editor and associate editor roles and noted more article submissions that semester. Similar to previous studies

(Modern Language Association of America, 2009; Stout et al., 2007), we found that associate professors, who were less likely to feel the distribution of work in their department was fair, were engaged in more teaching and advising, course administration, and advising of undergraduates than full professors. Although there were also work activity areas where we did not find significant differences, these differences should be read as further evidence, through a different research method and lens, of gendered divisions of labor in research universities as well as evidence of workload constraints faced by women and associate professors (Misra et al., 2011; Winslow, 2010).

However, this study's most important contribution relates to gendered workplace interactions shaping workload. We examined several kinds of workplace interactions that could have been associated with gender differences in workload. Two of these interactions—the number of work requests and the kinds of work requests women received—are particularly important findings. Across all 4 weeks, women consistently received higher numbers of work activity requests than men. Over 4 weeks, women received 3.4 more requests for new work activities than men. Gender was a significant positive predictor of requests, with women receiving more requests, for both associate and full professors. It should be noted that these additional requests per week for women (4.26 more requests to women associate professors than male associate professors; 2.75 more requests to women full professors than male full professors) occurred during a semester when women faculty already reported spending more time engaged in teaching-related activities, while men reported spending more time in research-related activities. Receiving new requests would perhaps not be so harmful for women, if those requests were primarily to become more engaged in research activities or to pull women more into research conversations and communities. However, they were not as men were more likely to receive new research-related requests.

The kinds of new work requests women and men faculty received were different. Women received more requests to be engaged in teaching, student advising, and professional service than men. Thus, women began with more time allocated to non-research-related activities and then received more requests to be engaged in even more of this work. This finding of receiving more requests for service is consistent with Mitchell and Hesli's (2013) study of political science faculty wherein women were asked to serve in campus service roles more often than men.

A third workplace interaction we examined was who was asking for faculty to complete new work activities. Though little research has been done in this area, many scholars working to improve gender equity assume a key problem is male faculty and administrators, who are more senior in rank, asking women to become engaged in teaching and campus service in greater numbers than men. In this scenario, women feel vulnerable and must say yes or put their career standing in jeopardy. Given there are fewer women full professors in research universities, we also thought it likely new work

requests, especially for campus service, might come from male department chairs and colleagues. Yet we found that most requests for new work activities, for men and women, came from students or former students and off-campus colleagues in the participants' field. Consistent with previous studies of homophily in social network analysis that show gender patterns in mentoring, scholarly conversations, and publications (Feinberg, Watnick, & Sacks, 2009; Griffin & Reddick, 2011), we found women received more work activity requests from women and men more requests from men.

Returning to Smith's (2005) notion of different ways in which workplace interactions might reflect "ruling relations" that contribute to gendered organizations (Acker 1990), we see less evidence in our findings that unequal requests and kinds of requests are due to social interactions embedded with power (men with more power asking women to do more work requests). Instead, there seems to be more suggestion of workload inequity ordered, disciplined, and otherwise organized by sets of expectations, commitments, and roles enacted between women. This makes sense in at least two ways. First, those most involved in activities such as teaching, mentoring, and campus service are likely to be among the individuals asking others to become involved. Second, research recognizes women as well as men hold implicit biases toward other women as helpful and communal and hold expectations that women will play organizational housekeeping roles (Cross & Madson, 1997; Heilman et al., 2004; Rudman, 1998). Therefore, it should not be a surprise that women are gendering their organizations through workload requests to other women even as they are burdened by such requests in their own careers.

A final workplace interaction we examined was whether women were saying yes more often to new work requests. Although we found that women were slightly more likely than men to say "yes" to a new request, less likely to say "no," and less likely to delay their response, none of the differences were found to be significant. Women were not necessarily saying yes more often than men, nor were their reasons for saying yes or no that different; they simply had more requests and different kinds of requests. This differs from Mitchell and Hesli's (2013) study that found women said yes more often when asked, although the methods of the two studies were very different (cross-sectional survey versus time diary).

Our findings shed light on how workplace interactions within gendered organizations such as research universities reproduce inequality (Acker, 1990; Bird, 2011). Time is one of the most valuable resources faculty have to achieve career goals (Winslow, 2010). We found faculty time use was being shaped by a number of factors that fostered cumulative disadvantage for women faculty careers (Merton, 1968). Integrating our findings with previous research allows us to see the disadvantages accrued through the structures and workplace interactions embedded in academic careers. Women and men faculty begin their academic labor within a gendered research

university wherein organizational logic values research over teaching and service (Acker, 1990; Ely & Meyerson, 2000). Before the female faculty member even begins her work week, she is scheduled to be involved in more teaching-related activities than her male colleagues, whereas her male colleague is signed up to be involved as an editor, in preparing publications, and in professional conversations about research with colleagues. Now the work week begins, and she receives more new work requests than he does, and for teaching- and service-related activities. Research suggests she is likely to be committed to teaching and campus service in particular ways (O'Meara, 2016; Umbach, 2006; Winslow, 2010), and students have expectations that she is more available to them than her male colleagues (Anderson, 2010). She does not say yes or no more than her colleague; in fact, both she and her male colleague say yes about three-fourths of the time (women said yes to 72% of the requests received; men said yes to 82% of the requests received); however, she has to consider and come up with more responses. Also, more of the male faculty members' requests will be from off-campus colleagues who can advance his career and involve him in more research activities; more of the female faculty members' requests will be related to teaching and campus service, which, though these activities may be fulfilling, will not count much toward career advancement in her institution or field. Furthermore, more of her requests will be from other women who she recognizes expect her kinship and communal behavior (O'Meara, 2016). By the time these two faculty have reached midcareer, one has accumulated more of the social capital necessary to advance. They did not start as equals, but what happened in the organizing of work along the way, or what Smith (2005) refers to as "ruling relations," further enhanced the male faculty members' career advantage, reproducing a gendered organization.

Although our study examined work time and not family care, it is also important to consider the cumulative career effects of women faculty spending less time on research *and* more time than men faculty on family care, as many studies of academic parents found (Acker & Dillabough, 2007; Misra, Lundquist, & Templar, 2012). In this study, we found women full professors engaged in 7.3 less hours per week on research than male full professors, which is significant. Imagine that the same female professor is also spending 3 hours more per week on family care and housework than male peers. Martell, Lane, and Emrich (1996) showed that a gender difference in performance evaluations favoring men but accounting for only 1% of the variability in scores can produce an organizational structure over time in which only 35% of the highest level positions are filled by women. They make the point that "male-female differences are best determined not by the magnitude of the effect but its consequences in natural settings" (p. 158). Thus, if researchers find even a 30-minute per week difference in research time, long-term consequences need to be considered.

Turning to implications for further research, we observe that our study was not able to determine cause and effect between workplace interactions (such as women receiving more requests for teaching-related work and service) and actual workload (such as women spending more work time on teaching-related work and service). The relationships between workplace interactions and workload seem intuitive, but there are other factors shaping workload as well. This research makes an important contribution by pointing to some key kinds of workplace interactions likely to shape faculty time allocation. However, future research with a larger sample might try to understand which workplace interactions have the greatest direct impact on gender differences in workload and if this differs by race, discipline, and critical mass of women.

Also, associate professors were less likely than full professors to perceive the distribution of work in their department as fair. Although rank and gender are connected, both because gendered logics advance faculty for certain work activities and not others and because only about 28% of full professors (or less) in research universities are likely to be women (Curtis, 2011), it is important to tease apart what aspects of workload here are considered within these departments as earned privileges. For example, being able to make one's own office hours in many law firms is a privilege earned through becoming a partner. To what degree is spending a preferred amount of time on research considered to be an earned privilege of full professorship within these organizations? And if this is indeed a cultural norm, why are women associate professors finding it harder than male associate professors to make it through the "earning years" to this position? We found that even among full professors, women were engaged in less research each week, suggesting other factors, such as work-life demands and social networks, may be influencing research productivity and workload.

In terms of implications for practice, these findings provide a more complex picture of the individual, institutional, and field interventions needed to improve workload equity. For example, one of the traditional remedies for gender inequality in workload is to provide workshops for women that encourage them to be more strategic about agreeing to additional teaching and service requests (Pyke, 2015). These workshops include strategies for saying no to activities that will not advance one's career and yes to opportunities that can. Likewise, there are many career advice articles and book chapters that advise women on how to be more strategic about their work choices (Hogan, 2010; Rockquemore, 2015). This has been heavily critiqued as a "fix the woman" deficit approach, most recently by Pyke (2015), who compares these interventions to the "just say no to drugs" campaign that puts "the burden on individuals, rather than complex bureaucratic structures" (p. 83–84). This is an appropriate critique of "just say no" service workshops, particularly if they are done in isolation or exclusively to address workload inequity without structural interventions. No one has initiated "just say yes" workshops for men, and so the likelihood that men will spontaneously begin to pick up the work that women

will begin to say no to is doubtful. Also, such workshops focus on only one work interaction in the process—what to do when requests come in, which in this study was not found to be the most unequal part of the system per say. From this perspective, it is much more important to improve faculty (men and women) and department chair awareness of the social science research on implicit bias. Implicit bias workshops can provide strategies to reduce the likelihood that women are asked more often than men to play institutional care-taking and housekeeping roles (Mitchneck, Smith, & Latimer, 2016).

On the other hand, the fact that women received more work requests than men, and that they were more likely to receive them from other women, suggests the importance of helping women navigate requests. Research has shown that stress, emotional exhaustion, and burnout are associated with teaching-related faculty work, which was a primary area of requests for women (Watts & Robertson, 2011). Student and colleague expectations for women may create different demands on their time. Until universities engage in organizational practices that produce equitable situations related to these requests, professional development can play an important role in helping women navigate workload decisions in gendered organizations.

At the institutional level, it is critical that campuses create greater awareness of workload inequity by collecting data on it and sharing it widely. Creating campus dashboards of minimum, average, and high teaching, advising, and campus service workloads can increase faculty awareness of inequality and then spur action toward change in organizational practices (O'Meara, 2016). Examples of possible interventions that might be put in place are required rotations for time-intensive service roles, fair distribution of advising loads, and credit for faculty who take on more than their fair share through merit review processes.

In regard to field implications, one asset-based approach to workload equity in research universities may be to pull women further into research networks. Drennan, Clarke, Hyde, and Politis (2013) found that involvement in the wider research community through editorial positions and peer reviewing was a predictor of research productivity. Thus, disciplinary associations might work with programs like NSF-funded ADVANCE programs by trying to claim a bigger portion of the work week in which female associate professors engage with colleagues on research work. Another strategy would be for women in research universities to work together to monitor the requests made to other women, especially for less valued faculty roles. Just as feminist scholars have worked together to create vehicles for increasing awareness and reforming gendered language in letters of recommendation (The University of Arizona Commission on the Status of Women, n.d.) and for ensuring women's representation on panels at professional conferences (GenderAvenger, n.d.), women faculty might devise ways to increase awareness about differential requests, workloads, and types of work to change behavior toward more equitable outcomes.

Notes

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