

What Do Professors in Research and Doctoral Institutions Do All Week?

An Exploration of Faculty Time, Work, and Drive

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## Dedication

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## **Abstract**

This study addresses the issue of academic drive in terms of academic workload, specifically, the number of hours faculty members work. It examines the relationship between academic drive, the percentage of time faculty members allocate to seven academic work spheres (time allocation), and the difference between faculty members' actual and preferred work-sphere time allocations (time disconnection). The analysis is based on a sample of 3,812 full-time faculty members at research and doctoral institutions, using data from the 1999 U.S. National Study of Postsecondary Faculty (NSOPF:99) survey. The analyses demonstrate that time allocation is positively related to faculty drive, and show no statistically significant relationship between faculty drive and time disconnection. These findings suggest that how faculty members allocate time, not whether they prefer the work or not (time disconnection), is associated with the number of hours faculty members work per week.

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## CHAPTER 1

The nature of academic work is changing. Gappa, Austin, and Trice (2007) observe that these changes in higher education have “conspire[d] to create seemingly endless demands and expectations of faculty members” (p. 17). Faculty members are struggling with a growing list of academic tasks and increasing productivity demands (Gappa et al., 2007). Tension also exists between tasks that the public deems important for faculty to undertake and tasks that the academy deems important for faculty to pursue (Burke, 2005). The National Committee on Accountability (2005), for example, argues that “institutions (and faculty themselves) must make better use of academic time and talent, reducing less productive activity and allocating time more effectively to the highest priority goals in learning, research, and service” (p. 22).

The demographic profile of the professoriate is also changing, which is creating additional challenges to academic work and time allocation. The traditional 1960s academic population of male, tenured professors is giving way to a faculty cohort that is more diverse in terms of gender (Finkelstein, Seal, & Schuster, 1998), ethnicity (Finkelstein et al., 1998), and appointment type (Anderson, 2002). The full-time academic cohort, in the Fall of 2003, was comprised of 38 percent female faculty members and 20 percent racial and ethnic-minority faculty members (Cataldi, Fahimi, Bradburn, & Zimmler, 2005). Moreover, 30 percent of full-time faculty positions were not on the tenure-track, and 44 percent of academic positions were part-time (Cataldi, Fahimi et al., 2005).

This diverse faculty cohort faces many challenges in academic life. Early-career

faculty, especially, struggle to determine what work is most highly rewarded in their academic department (Rice, Sorcinelli, & Austin, 2000). They also struggle to find a balance between competing academic tasks, time pressures, and non-work demands (Rice et al., 2000). Minority faculty members face further work and time pressures from students who gravitate to them for advising and mentoring, as well as senior colleagues who want them to participate in academic committees because of their minority status in the department (Gappa et al., 2007). The new twenty-first century faculty cohort struggles with time pressures, time constraints, and long work hours with which older faculty cohorts in the 1960s arguably did not have to contend.

### **Statement of the Problem**

Time pressures are challenging faculty members at all career stages. Senior faculty members report dissatisfaction with balancing the time demands of teaching and research and of work and family (Berberet, Bland, Brown, & Risbey, 2005). Senior faculty members also report dissatisfaction with the time they have to produce high-quality work (Berberet et al., 2005). Mid-career faculty members report greater dissatisfaction with their workload compared to early-career faculty members and senior faculty members (Baldwin, Lunceford, & Vanderlinden, 2005).

Early-career faculty members express frustration as they struggle to manage the pressures of faculty life without adequate time to handle their growing workload (Rhoades, 2009; Rice et al., 2000). Sorcinelli and Billings (1993), using data from a survey on the University of Massachusetts' pretenure cohort, found that junior faculty members face "acute frustration in finding time and energy for work as well as for

partners, children, dual careers, and commuter relationships” (p. 13). Rhoades (2009) contends that early-career faculty are also “expected to publish more, generate more grants, teach more students in more contexts, and be responsive 24/7” (para. 3). Many junior faculty members struggle with a heavy workload filled with academic tasks that are “time-consuming and energy-draining” (Menges, 1999, p. 6). The time early-career faculty members need to complete their work, and the number of tasks for which they are responsible, are central concerns for the academy.

These problems in faculty worklife compel many new faculty members, especially female faculty members, to leave academia. Fogg (2003) explains that “Despite the widespread notion that academe is one of the most family-friendly environments, anecdotal evidence suggests that many female scholars are not finding the time and flexibility they would like for other priorities. Those include raising children, caring for sick and aging parents, and accommodating a spouse's job....[W]omen are [also] finding that the 60-hour week often required of successful academics leaves little left over for a satisfying family life. As a result, they are leaving tenured or tenure-track jobs, many after devoting grueling years to reach the most-coveted goal of their careers” (para. 6).

These retention concerns are likely not limited just to female academics because most academics are working long hours (Jacobs, 2004). Jacobs (2004) found that faculty members are working well over 50 hours per week, and many faculty members are working more than 60 hours per week. Jacobs (2004) also noted that faculty members often feel personally to blame for not being able to manage their work time better, instead of viewing time challenges as broader academic issues facing all faculty. The academy

has reinforced a work environment that associates academic success with working long hours, managing multiple and competing tasks, and struggling with insufficient time to attend to non-work or family responsibilities.

Aspiring faculty members learn about the academic environment through their graduate school experience. Austin (2002) found that doctoral students watch their faculty members experience time struggles, challenges in balancing work and non-work demands, and unrelenting pressures to excel in many time consuming tasks. Many graduate students do not want to emulate their advisors' working lives (Mason, Goulden, & Frasch, 2009). They, instead, want to pursue careers outside academia that are more family-friendly, and allow for a work-life balance (Mason et al., 2009). Goldsmith and Cooley (2000), in their study of National Science Foundation-supported graduate student fellows, found that graduate school training teaches students negative views of academic worklife, as evidenced by the following two quotes from their study: "graduate school definitely taught me one thing: it is impossible to have a happy family life and be a professor" (p. 14); and, "I see how my professor lives, and I'm not particularly interested in it" (p. 14).

These negative accounts of academic life are leading many graduate students to reconsider the pursuit of an academic career (Austin, 2002). A survey of doctoral students at the University of California found that only 36 percent of male doctoral students and 27 percent of female doctoral students wanted to pursue an academic career at a research institution (Mason et al., 2009). Higher education needs to address these faculty time, workload, and recruitment issues if it wants to attract the brightest young scholars to be part of its faculty.

## Research Question

This study addresses the issue of academic drive in relation to academic workload, specifically, the number of hours faculty members work. It explores the relationship between faculty drive, time allocation, and time disconnection. Faculty drive is defined as the average total number of hours faculty members work per week on the following four activities: all paid activities at the institution; all unpaid activities at the institution; any other paid activities outside the institution; and, unpaid (*pro bono*) professional service activities outside the institution.

Time allocation is defined as the number of work spheres to which faculty members allocate their time and the percentage of time faculty members allocate to each work sphere. The seven academic work spheres are teaching undergraduate students, teaching graduate or first professional students, research and scholarship, professional growth, administration, service and outside consulting, and other academic work.

Time disconnection is defined as the difference between faculty members' actual time allocations and their preferred time allocations in the seven work spheres. This variable is captured with three different measures: the total percentage difference between actual and preferred time allocations for all seven work spheres; preference for allocating more time to more work spheres; and, preference for allocating less time to fewer work spheres.

This study uses a conceptual model grounded in the higher education and management literature. The model suggests a comprehensive view of variables affecting faculty drive, including a broad range of academic tasks and faculty characteristics. The model proposes that time allocation, time disconnection, teaching load, research load,



service load, satisfaction, and sociodemographic characteristics are related to faculty drive. Said another way, the extent to which faculty members are driven to do academic work is associated with their allocation of time; their connection or disconnection with the work they are conducting; their academic teaching, research, and service; their levels of satisfaction; and, their personal demographic characteristics.

This study is guided by the following research question: *To what extent are time allocation and time disconnection associated with faculty drive in terms of the hours faculty members work?* To answer this question, this study uses data from the 1999 U.S. National Study of Postsecondary Faculty (NSOPF:99). The U.S. Department of Education's National Center for Education Statistics administered the NSOPF:99 survey. The NSOPF:99 survey included nearly 18,000 faculty members from approximately 1,000 degree-granting higher education institutions across the United States (National Center for Education Statistics, n.d.). Items from the NSOPF:99 dataset were chosen based on their relationship to the conceptual model. One item that measures the dependent variable (faculty drive as measured by hours worked) and 62 items that measure the independent variables were included in this study. Descriptive statistics, one-way analyses of variance, and a correlation analysis were first conducted to understand better the items in this study. A stepwise multiple regression was then conducted with these 63 items to determine the explanatory power of the independent variables.

### **Organization of the Study**

This study is organized into five chapters. Chapter 1 includes background information about faculty life, the problem addressed in this study, and the research

question. Chapter 2 presents literature that pertains to the issue of faculty drive and the number of hours faculty work. Chapter 3 discusses the conceptual model, the dataset, the items and measures, and the statistical analyses used in this study. Chapter 4 reports the findings obtained from the descriptive analyses, the one-way analyses of variance, the correlation analysis, the stepwise “block” multiple regression analysis, and the stepwise multiple regression analysis. Chapter 5 discusses this study’s findings, suggests implications for theory, policy, and practice, and provides suggestions for future research.

## CHAPTER 2

### Review of the Literature

Many faculty members and graduate students believe that faculty work is unmanageable in terms of hours worked and tasks to be done. Rice, Sorcinelli, and Austin (2000) found that time constraints related to the challenges of balancing work-life issues, the tenure process, and the complex collegiality model are central to all pressures facing junior faculty members. Many early-career faculty members believe that long hours and academic success are related: “I got the sense that the more overworked you were the better faculty person you were” (Tierney & Bensimon, 1996, p. 60). Many graduate students believe that an academic work life is “crazed” and that a “faculty day is very hectic and stressful, that teaching often takes a back seat to research, and that new faculty are under intense pressure to meet tenure expectations” (Rice et al., 2000, p. 7).

This study is premised on literature about these work and time challenges and seeks to explain why many faculty members believe that academic work is unmanageable. It also explores literature to find answers to the following research question that guides this study: “To what extent are time allocation and time disconnection associated with faculty drive in terms of the hours faculty members work?”

First, this study examines the literature to determine if academic time concerns are based in broader societal concerns of work-life balance. This study also examines the literature to determine if time pressures are a common theme in qualitative studies of junior faculty work, and in quantitative studies of faculty work issues such as stress, satisfaction, and rewards. Second, the question of whether faculty members are working

more total hours now than in the past is examined. Third, the question of whether faculty work has changed in terms of the nature and types of tasks faculty members complete is examined. Fourth, the literature is analyzed to determine if the time faculty members allocate to teaching, research, and service has changed, and if this change reflects broader changes in the number of academic tasks for which faculty members are responsible.

### **Academic Time Concerns and Broader Societal Concerns of Worklife Balance**

Increasingly, mainstream media depict the following image of a modern worker: works increasingly long hours, struggles with balance issues related to work and family, and has little leisure and vacation time (Gappa et al., 2007; Schor, 1992). Modern workers are increasingly overworked and highly stressed (Schor, 1992). Modern workers are also challenged “physically, mentally, and emotionally to manage all their competing responsibilities” (Gappa et al., 2007, p. 48). This image extends beyond traditional workers, who lack control of many aspects of their work, to include managers, professional employees, and academics who have much greater control over how they allocate their work time (Feldman, 2002; Gappa et al., 2007; Schor, 1992).

In order to determine whether academic time concerns are based in broader societal concerns and issues facing the modern worker, this study first examines the historical evolution of the concepts of work and time. Second, it narrows the discussion of work and time to professionals and provides information on how professionals are different from other workers in terms of work and time allocation. It then examines the extent to which professionals and academics are working long hours and identifies individual, institutional, and societal factors that contribute to this phenomenon. Finally,

this study examines time as an issue in studies of faculty worklife.

### **History of work and time.**

In order to appreciate recent conversations about the challenges facing modern workers (including academics) in balancing work and non-work demands, it is essential to understand how the concepts of work and time have evolved. Work and time had significantly different meanings to individuals during agrarian, industrial, and knowledge societies and these differences provide important benchmarks for understanding current meanings of work and time (Schor, 1992). Work in the medieval agrarian society was regulated by daylight (Schor, 1992). Workers were expected to work during the entire daylight period (Schor, 1992). These long days, however, were interspersed with many periods for meals, naps, and breaks (Schor, 1992). The agrarian way of working included more leisure time in terms of breaks and holidays, slower pacing of work duties, and greater attention to work as a means for providing basic needs instead of materialistic desires (Schor, 1992).

The concepts of work and time changed with the introduction of capitalism and the industrial revolution (Schor, 1992). In this era of mechanization, workers were forced to work longer and harder to achieve employer-imposed rules of productivity and efficiency (Schor, 1992). Workers were pushed to exhaustion through the manipulation of time (with the introduction of clocks), daylight hours (with the introduction of artificial lighting), production speed (with the introduction of the conveyor belt), and earnings (with the introduction of a daily wage and employment rent) (Schor, 1992).

During the 20<sup>th</sup> century, white-collar workers who held managerial and

professional (M&P) positions entered the workforce (Schor, 1992). M&P employees often earned a much higher wage than blue-collar workers; however, they were also required to work longer hours, be fully committed to their work, spend more time at the office on evenings and weekends, and spend time outside of work on work-related responsibilities (Kanter, 1977; Schor, 1992; Stier & Lewin-Epstein, 2003). These expectations continue for managers in many types of organizations including large multinational firms, small agencies, governmental offices, and the academy (Schor, 1992). M&P employees must work “long hours as a signal of commitment, productivity, and motivation for advancement” (Clarkberg & Moen, 2001, p. 1116). While M&P employees have greater job control than blue collar workers, they also have higher levels of responsibility, engage in numerous tasks, and work at an “unrelenting pace” (Mintzberg, 1971, pp. B-99).

### **Professionals.**

Professionals vary from non-professional employees in several ways. Professional work often cannot be standardized; this type of work demands the use of many skills and talents to address an array of complicated and overlapping tasks (Baldrige, Curtis, Ecker, & Riley, 1983). While professionals may enjoy some level of routine in a set of tasks undertaken, the nature and scope of these tasks defy daily or cyclical routinization (Baldrige et al., 1983). Baldrige, Curtis, Ecker, and Riley (1983) summarize four common characteristics shared by professional employees:

- “1. Professionals demand *autonomy* in their work. Having acquired considerable skill and expertise in their field, they demand freedom from supervision in

applying them.

2. Professionals have *divided loyalties*. They have ‘cosmopolitan’ tendencies and loyalty to their peers at the national level may sometimes interfere with loyalty to their local organization.
3. There are strong tensions between *professional values* and *bureaucratic expectations* in an organization. This can intensify conflict between professional employees and organizational managers.
4. Professionals demand *peer evaluation* of their work. They believe that only their colleagues can judge their performance, and they reject the evaluations of others, even those who are technically their superiors in the organizational hierarchy” (p. 13, emphasis in original).

Initially, medicine, law, and theology were society’s only three professions (Brubacher & Rudy, 2002).

During the nineteenth century, the academy began in earnest to hire older, more experienced, permanent faculty members (Schuster & Finkelstein, 2006). Younger, less experienced, temporary academic tutors, who had historically comprised the academic core of teachers, were moved to a separate track so that the permanent faculty members could become the core of the academy (Schuster & Finkelstein, 2006). This change helped transform the concept of an academic career from short-term work conducted by academic tutors to life-long work conducted by professional experts with formal graduate education (Schuster & Finkelstein, 2006).

This new academic faculty profession was based on a “peculiar combination...of academic guilds and administrative and bureaucratic structures” (Trow, 1998, p. 21) and

was premised on four interconnected principles. The first principle involved academic freedom, which allows academics “the freedom...to pursue truth wherever it leads, without fear of punishment or of termination of employment for having offended some political, methodological, religious, or social orthodoxy” (Berdahl, Altbach, & Gumpert, 1999, p. 6).

The second principle involved academic tenure, which allows academics “after the expiration of a probationary period...[to be awarded] permanent or continuous tenure, and their service should be terminated only for adequate cause, except in the case of retirement for age, or under extraordinary circumstances because of financial exigencies” (American Association of University Professors, n.d., p. 4). The purpose of tenure extends far beyond lifetime employment. Tenure is grounded in “persistent academic desires...for intellectual independence, collective autonomy and the time and financial security needed to carry on scholarly and scientific work” (Horn, 1999, p. 261).

The third principle involved shared governance, which afforded faculty “internal control...[over] the discipline of students and the direction of instruction” (Brubacher & Rudy, 2002, p. 29), and afforded “a role for faculty in the selection of administrators, in the formulation and control of educational policy, and in the appointment and promotion process” (Schuster & Finkelstein, 2006, p. 31). External control was granted to lay boards, who were responsible for “the formation of policy and the allocation of financial resources to carry out policy” (Brubacher & Rudy, 2002, p. 29). Shared governance is premised on the “concepts of academic freedom and peer review” (Hamilton, 2000, p. 16).

The final principle of the academic profession was collegiality (Baldrige, 1971).



In this collegial model, decisions are made through discussion and consensus by a community of scholars (Tucker, 1993). The collegial model is premised on “faculty members...feel[ing] that they belong to a mutually respectful community of scholars who value each faculty member’s contributions to the institution and feel concern for their colleagues’ well-being” (Gappa et al., 2007, p. 305).

### **Professional hours.**

Managerial and professional (M&P) employees work upwards of 50 hours per week (Hochschild, 1997). Clarkberg and Moen (2001) suggest that this increase in working hours helps explain why many professionals are more overworked than nonprofessional workers. Professionals, such as bankers, lawyers, and residents, often work an average of 70 to 80 hours per week and many managers average 60 to 70 hours per week (Schor, 1992). Schor (1992) reports that during the 1980s, senior executives started working even longer hours and stopped taking vacation. Schor (1992) also found that, at the end of the twentieth century, “overwork at the upper echelons of the labor market had become endemic” (p. 19). Clarkberg and Moen (2001) found that professional couples (in which one or both are professional employees) are 50 to 90 percent more likely to be overworked than their nonprofessional couple counterparts.

The Australian Centre for Industrial Relations Research and Training (ACIRRT) (1998) has identified the following negative outcomes of working long hours over an extended period of time:

“the declining quality of working life; increased stress, fatigue and isolation, giving rise to adverse health consequences; a general deterioration in the quality

of life outside of work as a result of both the encroachment of work on family, community and social life, and a decrease in the degradation of common leisure time; and an effective cut in pay as a result of the breakdown between hours worked and hours paid for” (ACIRRT, 1998, p. 23, as cited by Wooden & Loundes, 2001, p. 1).

Longer work hours and increased workloads are linked to higher levels of stress and sleep deficits as employees feel more rushed to be productive at work (Schor, 1992).

### **Factors Contributing to Long Hours for Professionals**

Several factors must be considered when attempting to understand why managers and professionals continue to work long hours. Included in these factors are individual, organizational, and societal issues. Individual factors such as gender, marital status, and family status help explain why increasing numbers of workers are working longer hours regardless of negative personal consequences (Feldman, 2002). Home and family time is constrained by the number of hours individuals work, suggesting that analyses of time should include both work and home activities (Jacobs & Gerson, 2001). Women are still more likely than men to be responsible for house-related tasks and less likely to work full-time hours outside the home (although the trend is changing) (Hochschild, 1997; Schor, 1992). Individual personality traits like self-monitoring, conscientiousness, and achievement motivation are also related to the amount of time individuals are willing to expend on work tasks (Feldman, 2002). The extent to which individuals are involved in hobbies and leisure activities also affects the number of hours available for work. Schor (1992) suggests that leisure time is on the decline, while others contend that there is more

time for leisure in today's work environment (Robinson & Godbey, 1997). In addition to these individual variables, environmental variables also affect how long a person works.

The organizational environment in which professionals work affects how long and hard they work. Organizations "tend to overvalue the tendency to work long hours, particularly when other objective measures of productivity are hard to come by" (Clarkberg & Moen, 2001, p. 1119). Schor (1992) found that organizational pressures force more and more hours out of salaried employees in the name of "commitment, initiative, and flexibility" (p. 19). Clarkberg and Moen (2001) also found that professionals and non-professionals are equally unable to achieve work-life balance, and suggest that environmental factors beyond an individual's control impact the number of hours worked by M&P employees. Feldman (2002) suggests that a manager's tendency to work longer hours is affected by the visibility of work, tangibility of results, performance appraisal criteria, nature of work, work schedules, telecommuting opportunities, and work conditions.

In addition to these individual and environmental (organizational) factors, societal factors also contribute to M&P employees working longer and harder. Society has cultivated a strong work ethic that teaches American workers that working long and hard is acceptable and required in order to be a productive citizen (Porter, 2004). Many M&P employees are working to the brink of exhaustion (Moore, 2000). This section explores how the American work ethic developed and evolved into an ethos of work excess and work exhaustion.

The work ethic concept, historically, was tied to Judeo-Christian beliefs that work was something given to people as a punishment for actions (Porter, 2004). Similar work

ethic concepts were found in Greek and Roman societies (Porter, 2004). Then, during the sixteenth century Protestant Reformation, work was seen as a way to serve God (Porter, 2004). In the United States, the pioneer's harsh working environment was "given a biblical connotation and enduring the struggle in this new land gave settlers a sense of self and purpose" (Porter, 2004, p. 429). In the eighteenth century, capitalism embraced the work ethic of long hours because it intensified pressure for workers to conform to the new economy in which hard work, organizational profit, and productivity were linked (Porter, 2004).

The American work ethic was reinforced again in the nineteenth century when the country became industrialized and employers needed to convince workers that, even though they were working long hours, maintaining an unrelenting pace, and experiencing decreasing control of their work, this effort was necessary because it fostered personal self-worth and success (Porter, 2004). The American work ethic was crafted so that internal self-worth was based on external indicators of success as determined by the factory or organization (Porter, 2004).

There is a generational impact on the work ethic definition. Each generation believes that it epitomizes the American work ethic and worries that the next generation will slacken the definition of hard work and success (Ciulla, 2000). While the work-ethic concept is societal in nature, the work-ethic definition is tied to individual beliefs and generational tendencies (Porter, 2004). This generational impact can be seen in different perspectives of people born during the Baby Boom generation (Baby Boomers) and those born in Generation X generation (Gen Xers). According to Cordinez (2002), Baby Boomers "entered the workforce...driven and dedicated...equat[ing] work with self-

worth, contribution, and personal fulfillment” (p. 239). Cordinez (2002) also describes how Gen Xers watched the effect of this work ethic, as “their parents struggle[d] with rightsizing, downsizing, and layoffs after years of dedication to the corporate mission” (p. 240). The tension between these generations is captured by research from Santos and Cox (2000) who found that typical Baby Boomers hold negative perceptions and impressions of Gen Xers, while typical Gen Xers do not hold these same feelings about their elder colleagues. This generational tension speaks not only to different interpretations of the American work ethic, but also to challenges in workplace dynamics as these two generations try to relate to each other.

Research has shown that this strong American work ethic is related to many professionals’ working to exhaustion to meet societal expectations of hard work for good pay (Moore, 2000). Work exhaustion is “a state of physical, emotional, and mental exhaustion” (Moore, 2000, p. 142), and has been used to help define job burnout (Moore, 2000). Several factors can lead to work exhaustion, including work overload, role conflict, and role ambiguity (Moore, 2000). Oftentimes, the worker who exhibits the strongest work ethic, and who is working the longest number of hours, may also be working in a state of exhaustion (Moore, 2000).

Attentive supervisors are aware that exhaustion is an outcome of environmental variables, not individual deficiencies, and seek to help individuals cope with their environment (Moore, 2000). In the short run, many professionals can thrive, but over time the challenges of heavy workloads, challenging deadlines, and lack of time can lead professionals to suffer from work exhaustion (Moore, 2000). Societal demands of a strong work ethic, combined with workplace demands on professionals, create a setting

for high rates of work exhaustion. This setting, along with long hours, can contribute to workaholism as a troublesome outcome.

Workaholics “are addicted to the process of work and the outcomes are important only as they supply external rewards for temporary boosts in self-esteem” (Porter, 2004, p. 434). Workaholics work all the time, exclude all other activities, and derive satisfaction only from work accomplishments (Porter, 2004). From an organizational standpoint, workaholics are the best kind of workers because they are productive, committed, and do not exhibit health or performance problems (Porter, 2004). From an individual perspective, workaholics often battle severe mental health issues that are reinforced during the routine of each work day (Porter, 2004). The structure of work rewards can feed the workaholic’s needs, creating a destructive cycle of behavior. If workers are suffering from workaholism, then research is needed to understand better how long work hours impact workers and how societal factors, as well as individual and organizational factors, impact the propensity of professionals to work long hours and develop addictive work behaviors.

The societal-focused literature confirms that M&P employees, along with academic faculty members, are experiencing long work hours and negative consequences from work norms. The literature on M&P employees is useful in understanding how broader societal pressures, organizational structures, and personal factors are related to employees’ working long hours. The literature, however, does not include adequate information to discern if M&P employees are working more hours now than in the past, what factors are motivating this hard work, or how many people are deciding against M&P careers because of long work hours (or related issues such as stress). This M&P

literature provides a basis from which to compare the academic literature (discussed below) to see if the same issues, concepts, and concerns arise.

The next section explores the individual, organizational, and societal factors that focus on how faculty members experience time and work. It begins by examining the extent to which time is a common theme in qualitative studies of junior faculty worklife and quantitative studies of faculty worklife issues such as stress, satisfaction, and rewards. The literature on how faculty work hours and faculty worklife have changed is then discussed. Finally, the literature on how faculty time allocations are related to core academic tasks (teaching, research, and service), and how these allocations have changed over time, are examined.

### **Time as an Issue in Studies of Faculty Worklife**

Time appears as a major theme in research investigating faculty worklife (Rice et al., 2000; Tierney & Bensimon, 1996), satisfaction (Jacobs & Winslow, 2004; Olsen & Crawford, 1998; Sorcinelli & Billings, 1993), stress (Gmelch, Wilke, & Lovrich, 1986), intention to leave (Barnes, Agago, & Coombs, 1998; Zhou & Volkwein, 2004), and rewards (Fairweather, 1993).

Rice, Sorcinelli, and Austin (2000) found, in a qualitative study of 350 junior faculty members and graduate students, that time constraints are central to all pressures facing junior faculty members, including challenges with the tenure process, challenges with collegiality, and challenges with achieving a work-life balance. Tierney and Bensimon (1996) found, in their study of pre-tenure faculty members, that the majority of faculty members are working days, evenings, and weekends to complete a heavy

academic workload. The hectic pace of academic worklife is captured by three faculty members in their study: one faculty member stated that “I work seven days a week...and I mean seven days a week” (Tierney & Bensimon, 1996, pp. 59-60); another faculty members stated that “[academic] work is never-ending here, and the pace is relentless” (Tierney & Bensimon, 1996, p. 61); and, a third faculty member suggested that “the problem [with working in academia] is that you never know how much is enough, and if you want to do a good job, if you take yourself seriously, that means you just keep working” (Tierney & Bensimon, 1996, p. 61).

Olsen and Crawford (1998), using longitudinal data on 54 junior faculty members, found that as new faculty members who had no previous work experience progressed from their first year to their fifth year in academia, their dissatisfaction increased. One area in which these faculty members were dissatisfied was with “the time they have to complete their work” (Olsen & Crawford, 1998, p. 47). Sorcinelli and Billings (1993), using data from a survey on the University of Massachusetts’ pretenure cohort, found that first-year junior faculty members can experience high satisfaction and high stress: “the opportunities for personal and intellectual growth offset the stresses of balancing multiple demands and anxieties about ‘extrinsic’ rewards” (p. 5). Sorcinelli and Billings (1993) also found that new faculty members struggled to find enough time to meet the needs of their academic and non-academic lives. Jacobs and Winslow (2004), using data from the 1998 National Study of Postsecondary Faculty (NSOPF:99) survey, found that the number of hours faculty work is negatively related to faculty satisfaction: “evidence suggests that the more hours that faculty report working, the more likely they are to complain about an excessive workload. This is a simple and perhaps not surprising



idea, but it runs counter to the notion that people working the longest hours are all doing so simply out of a love of their job” (p. 115). More specifically, faculty members who work fewer than 50 hours per week are more satisfied with their workload than faculty members who work 50 to 59 hours per week and faculty members who work more than 60 hours per week (Jacobs & Winslow, 2004). Jacobs and Winslow (2004) also found that faculty members who work the most hours per week are also the most research productive. This finding suggests that faculty members work long hours because long hours contribute to research productivity, which then contributes to academic success.

Faculty members are also experiencing stress from “the plethora of roles (e.g., teacher, adviser, researcher, university citizen, and departmental colleague) and the existence of numerous factions demanding attention produce a multifaceted complex of strains on individuals in the academic role” (Gmelch et al., 1986, p. 267). Gmelch, Wilke, and Lovrich (1986), using data from the Faculty Stress Index survey, found that younger faculty members and female faculty members perceive more stress from time constraints than older faculty and male faculty members, respectively.

Zhou and Volkwein (2004), using data from the 1999 National Study of Postsecondary Faculty (NSOPF:99) survey, found that workload has a direct impact on intention to leave for tenured faculty members. Barnes, Agago, and Coombs (1998), using data from the Carnegie Foundation for the Advancement of Teaching 1989 National Survey of American Professorate, found that stress from faculty time commitments had the strongest relationship with a faculty member’s intent to leave. Fairweather (1993), using data from the 1988 National Survey of Postsecondary Faculty, found that time spent on research is more strongly related to increases in salary than time

spent on teaching.

Research on academic worklife has shown that time is related to several aspects of academic work. The issue of time is embedded in broad worklife concepts, and its prevalence suggests a need to discover which variables best predict the number of hours faculty work and how faculty members allocate their time. As these issues are better understood, researchers will be able to identify ways to make faculty life more attractive to new and incoming recruits and more satisfying and less stressful to current academic faculty members.

### **Faculty hours worked over time.**

There is minimal published information on the total number of hours faculty members work. This lack of information is understandable when viewed through a historical lens. Faculty work was not of great public concern until the 1960s when societal concerns were raised about the relevance of academic work and higher education (Altbach, 1999). During the 1980s, the public wanted greater evidence that faculty members were working hard to educate their children, and several types of studies were used to gather data on faculty members' activities, instructional workloads, and productivity (Layzell, 1996; Meyer, 1998). Instructional workload studies and productivity analyses are not examined in this study because they are too institution-specific. This study does examine research from faculty activity studies that use national datasets and focus on national trends impacting faculty worklife. Only in specific cases are studies that use non-national datasets included to supplement national findings.

National surveys of faculty work issues and hours worked per week have been

conducted for decades. The Carnegie Foundation for the Advancement of Teaching conducted national faculty surveys in 1969, 1975, 1984, 1989, 1992, and 1997 (Huber, 1998; Schuster & Finkelstein, 2006; The Carnegie Foundation for the Advancement of Teaching, n.d.). The Higher Education Research Institute (HERI) conducts national faculty surveys to identify national faculty norms (Cooperative Institutional Research Program, n.d.). HERI data collection began in 1989, and then continued every three years thereafter (Cooperative Institutional Research Program, n.d.; Schuster & Finkelstein, 2006).

The National Center for Educational Statistics (NCES) collects national data through the National Study of Postsecondary Faculty (NSOPF). These studies were conducted in 1988 (NSOPF:88), 1993 (NSOPF:93), 1999 (NSOPF:99), and 2004 (NSOPF:04) (National Center for Education Statistics, n.d.). These studies include samples of faculty members from all institutional types (National Center for Education Statistics, n.d.). Faculty workload data have also been collected by the National Science Foundation (Bowen & Schuster, 1986) and the American Council on Education (Milem, Berger, & Dey, 2000; Schuster & Finkelstein, 2006), although these datasets are used to a much lesser extent in the literature.

Two prominent studies by Bowen and Schuster (1986) and Schuster and Finkelstein (2006) provide evidence of the number of hours faculty members worked in the 1970s. Bowen and Schuster (1986), using data from the National Science Foundation's 1978-79 Activities of Science and Engineering Faculty in Universities and 4-Year Colleges survey, found that university faculty members in 1978-79 worked an average of 48.2 hours per week. Schuster and Finkelstein (2006), using data from the

American Council on Education survey on teaching faculty in academe (ACE-72), found that university faculty members in 1972 worked an average of 43.7 hours per week. These studies use different samples, which may explain the different results for hours worked in the 1970s. The overall picture, then, is of faculty members working more than the standard 40-hour work week.

The National Center for Education Statistics (NCES) releases research reports documenting the number of hours faculty members work at the conclusion of each survey cycle of the National Study of Postsecondary Faculty (NSOPF) survey (see Cataldi, Bradburn, Fahimi, & Zimble, 2005; Kirshstein, Matheson, Jing, & Zimble, 1997; Zimble, 2001). Table 1 compares the number of hours faculty members worked in the 1988, 1993, 1999, and 2004 NSOPF surveys. As indicated in Table 1, the average overall number of hours faculty members worked between 1988 and 2004 increased by less than one hour per week (from 52.7 hours in 1988 to 53.4 hours in 2004). The average number of hours worked, however, masks a range of differences in hours worked when the data are disaggregated by institutional type and disciplinary field.

Table 1 also compares the number of hours faculty members worked in 1988, 1993, and 1999, by institutional type. Changes to the 2004 NSOPF survey prevent institutional comparisons of the number of hours faculty members worked in 2004 with prior survey data; as such, the discussion of institutional differences is limited to data from 1988 through 1999. As indicated in Table 1, faculty members in research and doctoral institutions work more hours per week than faculty members in comprehensive universities and two-year colleges (for all three survey years). Table 1 also compares the number of hours faculty members worked between 1988 and 2004 by disciplinary field.

Table 1

*Average Total Hours Worked by Full-Time Faculty, by Survey Date<sup>1</sup>, Institutional Type, and Selected Disciplines*

Date	Overall	Institutional Type				Selected Disciplines			
		Research	Doctoral	Comprehensive	Two-Year	Social Sciences	Natural Sciences	Engineering	Business
1988 <sup>2</sup>	52.7	56.8	54.7	52.7	46.9	53.5	54.0	55.0	52.7
1993 <sup>2</sup>	52.5	56.4	55.1	52.4	46.9	54.2	55.2	56.7	52.7
1999 <sup>3</sup>	53.3	55.8	56.0	52.4	49.1	53.5	54.4	55.1	51.4
2004 <sup>4</sup>	53.4	n/a	n/a	n/a	n/a	54.7	54.3	56.1	53.7

1. Data based on National Study of Postsecondary Faculty survey reports.

2. Source: Kirshstein, Matheson, Jing, and Zimbler (1997).

3. Source: Zimbler (2001).

4. Source: Cataldi, Bradburn, Fahimi, and Zimbler (2005).

As indicated in Table 1, engineering faculty members work the most hours per week and business faculty work the fewest hours per week (for all four survey years). Schuster and Finkelstein (2006) analyzed the number of hours faculty members work using data from the following five surveys: the 1972-1973 Teaching Faculty in Academe survey; the 1984 National Survey of Faculty; The National Survey of Faculty 1996-1997; and, the 1993 and 1999 National Study of Postsecondary Faculty surveys. They presented data on the mean number of hours worked overall and by institutional type, discipline, race and ethnicity, and gender (Schuster & Finkelstein, 2006). They found that the number of hours faculty members work per week increased from 42.9 hours to 48.6 hours between 1972 and 1998 (Schuster & Finkelstein, 2006). Schuster and Finkelstein (2006) also found that, in the 1972 and 1998 survey years, faculty members in research institutions, faculty members in the social sciences, Asian faculty members, and male faculty members worked the most number of hours per week, compared to faculty members in other institutions, disciplines, races and ethnicities, and female faculty members respectively.

Antony and Raveling (1998), using data from the 1993 National Study of Postsecondary Faculty survey, found that tenured faculty members worked more hours per week than pre-tenure faculty members, not on tenure track faculty members, and faculty members working at institutions with no tenure system. Bland, Center, Finstad, Risbey and Staples (2006), using data from the 1999 National Study of Postsecondary Faculty survey, found significant differences in faculty work and productivity across different appointment types. Bland et al. (2006) found that tenured faculty members worked 4.3 hours more per week than non-tenure-track faculty members. Bland et al.

(2006) also examined hours worked by institutional type and appointment type and found that for faculty members who work in research and doctoral institutions, tenure and tenure-track faculty members worked 6.1 hours more per week than non-tenure-track faculty members.

Research also finds significant differences in total hours worked by experience and rank. Cox (1991), using data from a survey on academic accountants, found several meaningful relationships between rank, experience, and total hours worked. He found that the most experienced full professors allocate significantly fewer hours per week to research than the least experienced full professors (Cox, 1991). He also found that assistant professors with three to five years of experience allocate significantly more hours per week to service than assistant professors with one to two years of experience (Cox, 1991). It is important to note that while Cox (1991) does not use national data, his findings are included in this study because they suggest a significant relationship between hours worked, experience, and rank.

The literature suggests that a variety of variables affect the number of hours faculty work, but a comprehensive analysis of hours worked using all of these variables has not yet been conducted. The present study is designed to conduct this comprehensive analysis.

### **Changes in faculty worklife.**

The literature suggests that the total number of hours faculty work per week is related to how faculty members allocate their time to core academic tasks. As such, it is reasonable to investigate whether faculty work has changed over time and if these

changes need to be captured in faculty time studies. There are several ways to conceptualize academic worklife. At the broadest level, faculty members approach their work with a notion of an academic ethic (Shils, 1984). In 1969, Sir Eric Ashby delivered a speech on the academic profession and the obligations of university professors (Shils, 1984). Shils (1984) later examined Sir Ashby's speech and revealed the constructs of an academic ethic embedded in its content. The academic ethic suggests that freedom must be tempered with academic responsibility and that faculty members should commit to the university, to the knowledge being researched and taught, and to their students (Shils, 1984).

As part of the academic ethic, academics are obligated to students, research, teaching, service, university relations, colleagues, society, and, above all else, to the "pursuit and transmission of truth" (Shils, 1984, p. 41). For the academic ethos to be fully observed, every obligation must be upheld (Shils, 1984). Shils (1984) expressed concern that faculty members are not attending to all their academic responsibilities. Some faculty members are instead focusing their time and effort on a narrower range of academic work norms, tasks, and responsibilities (Shils, 1984).

Academic work tasks and the time involved to complete them have been categorized into four domains of scholarship: discovery, integration, application, and teaching (Boyer, 1990). Edgerton (1993) states that these domains are designed to integrate a notion of scholarship in all aspects of faculty work: "the formulation invited faculty to take responsibility, as economists, biologists, and so forth, not only for advancing the knowledge base of their fields but for representing that knowledge base to others" (para. 14).



Faculty work is more commonly understood to be the sum of time spent on teaching, research, and service duties. Teaching time includes time spent on instruction, preparation, advising, marking and grading, and curriculum development (Braskamp & Ory, 1994; Colbeck, 2002; Milem et al., 2000). Research work includes conducting research, producing creative works, editing and managing creative works, and leading and managing funded research and creative projects (Braskamp & Ory, 1994, p. 43). Institutional and community service work includes participation in professional and public activities both on-campus (internal) and off-campus (external) (Braskamp & Ory, 1994). On-campus service is largely comprised of service to academic governance committees, task forces, and advisor roles for student-related, on-campus programs (Blackburn & Lawrence, 1995; Schuster & Finkelstein, 2006). Off-campus service includes paid consulting, unpaid consulting, service to professional organizations, service to an accrediting body and service to professional associations (Blackburn & Lawrence, 1995; Schuster & Finkelstein, 2006). Braskamp and Ory (1994) suggest five broad areas of academic service: conducting applied research and evaluation, disseminating knowledge; developing new products, practices, or clinical procedures; participating in partnerships with other agencies; and, performing clinical service (p. 47).

Academic work is not limited to these core academic tasks. Faculty members must also be prepared to adapt to a changing work environment and to utilize new skills and talents in the twenty-first century. Austin and Wulff (2004) assert that future faculty members must:

“have command of a range of research abilities, appreciation for a variety of ways of knowing, and awareness of the ethical responsibilities researchers will

encounter... understand how teaching and learning processes occur... be effective teachers... know how to use technology in their teaching and understand the meaning and practice of engagement and service appropriate for their institutional type... be effective in communicating to diverse audiences... know how to work effectively, comfortably, and collaboratively with various groups both inside and outside the academy... [and] understand how to be responsible institutional citizens, comprehending the challenges facing higher education and the implications of these challenges for their roles in the academy and as academics in society” (p. 10).

Faculty time is also consumed with several other academic struggles: the time needed to complete administrative tasks that were once handled by academic support staff (Gappa et al., 2007); the constant pressure from technology, computers, and emails, to be available day and night to respond quickly to questions from students and faculty (Gappa et al., 2007); and, the time demands of participating in formal faculty mentoring programs (Bland & Risbey, 2006).

Faculty members believe that their worklife is becoming “fragmented by too many tasks and too little time to complete them....[and that] their time and attention are spread thin across too many and sometimes conflicting duties” (Rice et al., 2000, p. 17). Faculty members further struggle with how to balance their intense academic workload with their family and non-work responsibilities (Rice et al., 2000). For many faculty members, this time struggle is a zero-sum game: “gains in [one’s] professional life result in perceived losses in [one’s] personal life” (Verrier, 1994, p. 122). As faculty members work becomes more complex and tasks and responsibilities continue to expand, faculty

members have started to integrate teaching and research tasks in earnest so that multiple tasks can be completed in a shorter amount of time (Colbeck, 1998). Colbeck (1998) found that faculty members spend on average 20 percent of their time engaged in work that integrates teaching and research tasks. Integrating work helps faculty members become more productive and time efficient (Colbeck, 1998). As academic workloads continue to grow, faculty members may have to integrate more of their tasks in order to remain productive and successful.

Faculty workloads in the twenty-first century are much more complex and intense compared to faculty workloads of prior generations. Faculty members now must complete new and additional tasks, place greater emphasis on scholarly work in all areas of academic work, integrate their roles, complete multiple tasks at once, and attempt to find a balance between work and family demands. Faculty members are being challenged to produce high-quality work while managing a longer list of workload expectations. The next section examines how faculty members are allocating time to teaching, research, and service tasks.

### **Faculty time allocation to core academic tasks over time.**

There is little empirical research on how faculty members allocate their time to various tasks. The literature that is available has the same limitations as the literature on total number of hours worked: the data are highly aggregated, different definitions of percent time are used, and the data are largely descriptive. In addition, the literature only focuses on core academic tasks of teaching, research, and service; the new reality of faculty work is not captured in the research on the percent of time faculty allocate to their

varied work tasks. The following is a synthesis of the literature on the percent of time faculty members allocate to core academic tasks.

The National Center for Education Statistics' (NCES) research reports on the National Study of Postsecondary Faculty (NSOPF) data (NSOPF:88, NSOPF:93, NSOPF:99 and NSOPF:04) indicate that the percentage of time faculty members allocate to core academic functions has changed (see Cataldi, Bradburn et al., 2005; Kirshstein et al., 1997; Zimble, 2001). Table 2 compares the percentage of time faculty members allocated to teaching, research, administration, and other academic activities. Changes to the 2004 NSOPF survey do not allow for comparisons of percentage of time faculty members allocated to administration and other academic work hours to prior survey data; as such, the discussion is limited to data from 1988 through 1999 for administration and other work. As indicated in Table 2, faculty members allocate over half of their time to teaching, nearly one-fifth of their time to research, and over one-tenth of their time to administration and other academic duties (for all survey years). Data from 1999, compared to data from 1988, indicate that faculty members are allocating less time to research (from 17.3 percent to 15.2 percent), the same percentage of time to teaching (approximately 57 percent), more time to administration (from 13.2 percent to 13.9 percent), and more time to other academic duties (from 12.5 percent to 14.3 percent).

Even with the increase in time spent on teaching and research in NSOPF:04, the time allocation patterns identified in Table 2 contrast to the reward models at most institutions where research is highly valued. As the pressure to conduct research increases, faculty members in 2004 are trying to accomplish more research tasks in nearly the same amount of time they had allocated for research in 1988. Faculty members are

Table 2

*Average Percent of Time Full-Time Faculty Allocate to Academic Roles, by Survey Date<sup>1</sup>*

Date	Percent of Time Allocated to Academic Tasks			
	Teaching	Research	Administration	Other
1988 <sup>2</sup>	57.1	17.3	13.2	12.5
1993 <sup>2</sup>	54.4	17.6	13.1	14.7
1999 <sup>3</sup>	56.6	15.2	13.9	14.3
2004 <sup>4</sup>	61.7	18.2	n/a	n/a

1. Data based on National Study of Postsecondary Faculty survey reports.

2. Source: Kirshstein, Matheson, Jing, and Zimbler (1997).

3. Source: Zimbler (2001).

4. Source: Cataldi, Bradburn, Fahimi, and Zimbler (2005).

allocating less than 20 percent of their time to the most rewarded academic activity. It is important to note that research tasks often require focused time, and, with little time available, it is clear why faculty members are likely to feel stress from their research demands and the lack of time to complete them. In addition, faculty members are allocating nearly the same percentage of time to administration and other academic tasks as they do to research, further suggesting that academic roles are misaligned with academic rewards in higher education. These data, however, are highly aggregated and must be interpreted with caution, because meaningful trends and differences are likely masked.

Other research suggests a different pattern of behavior in terms of the percentage of time faculty members allocate to core functions. Milem, Berger, and Dey (2000), using data from the 1972 American Council on Education study and the 1989 and 1992 Higher Education Research Institute (HERI) faculty studies, found that faculty members in the early 1990s allocated a significantly greater percentage of time to research, teaching, and advising than did faculty members in the early 1970s. Again, these data are highly aggregated and may mask a range of differences when variables like gender, experience, appointment type, or institutional type are taken into account.

When the NSPOPF data are disaggregated by appointment type (tenured versus not on tenure-track) and faculty status (full-time versus part-time), changes in how faculty members allocate their time become apparent. Antony and Raveling (1998), using data from the 1993 National Study of Postsecondary Faculty, found that tenured faculty members allocated less time to teaching, research, and service, and more time to

administrative work, than did pre-tenure faculty. Bland, Center, Finstad, Risbey, and Staples (2006), using data from the 1999 National Study of Postsecondary Faculty, found that tenured faculty members allocate more time to teaching and research, and less time to administration and service work, than did faculty members who were not on the tenure-track. Chen (2002), using data from the 1999 National Study of Postsecondary Faculty survey, found that part-time faculty members allocated a greater percentage of time to undergraduate teaching (53.5 percent), than did full-time faculty members (44.2 percent). Chen (2002) also found that full-time faculty members allocated a greater percentage of time to graduate teaching, research, and administration, than part-time faculty members.

Differences in time allocations may also be related to other variables like gender, ethnicity, and family status. Bellas and Toutkoushian (1999), using data from the 1993 National Study of Postsecondary Faculty survey, found statistically significant differences in time allocation by gender, ethnicity, and family status. They found that female faculty members allocated less time to research, more time to teaching, and roughly the same percentage of time to service, than did male faculty members (Bellas & Toutkoushian, 1999). Bellas and Toutkoushian (1999) also found that Black faculty members allocated less time to teaching and more time to service, Latino faculty members allocated more time to service, and Asian faculty members allocated more time to research, than did White faculty members. Bellas and Toutkoushian (1999) also found that married faculty members allocated less time to service, than did non-married faculty members, and faculty members with dependents allocated more time to service, than did faculty members with no dependents.

These research findings identify a trend in faculty time allocation and suggest how this trend is impacted by several individual and institutional characteristics including gender, ethnicity, appointment type, status, and discipline. Research indicates that faculty members are, to some degree, allocating the same percentage of time to teaching, less time to research, and more time to administrative and other work functions. With research being highly rewarded in most institutions and administrative and other work not being as highly rewarded, time allocations of faculty members indicate a disturbing disconnection between how faculty members allocate their time and how they are rewarded. This disconnection could be a key factor in why faculty members are facing time pressures because they are allocating time to academic tasks that are not rewarded. Allocating less time to research also increases the pressure for faculty members to be research productive in fewer hours per day. Further research on how faculty members allocate their time is needed to understand what factors are influencing these changes and the magnitude of change that is occurring in the amount of time faculty members are allocating to teaching, research, and service. Further research on the range of new academic tasks that faculty members are now responsible for conducting as part of their academic life is needed to understand better academic time allocation decisions.

## **Summary**

The impetus for this study came from concerns expressed by graduate students and junior faculty members that an academic life was becoming unattractive because of work and time pressures. Indeed, research shows that there is a growing perception that academic work involves an unmanageable workload, long work hours, and difficulties in



balancing intense work demands and non-work responsibilities.

There is evidence that all professional workers work long hours and that over time these long hours have become even more pronounced. Research on academic worklife issues suggests that while faculty members are satisfied with their careers, they are also stressed by their work and aspects of academia such as tenure and the reward process. Available literature on faculty time suggests that faculty members, in the aggregate, are working somewhat longer hours and allocating different percentages of time to academic tasks, compared to faculty members in the 1970s. More recent data suggest that changes in the hours faculty members work and how they allocate their time have been fairly stable over the past 15 years; these data, however, are largely descriptive and are based on reports from the National Center for Education Statistics (NCES). Finally, the literature indicates that the nature of academic work is changing so that faculty members are now undertaking more academic roles and tasks and work in a technological environment that increases demands on time and effort.

This conclusion, though, is based on a body of literature that is skewed to the negative aspects of academic life. There are, of course, several aspects of academic life that are positive and satisfying. In addition, the literature on the number of hours faculty members work is scarce. This study provides insights into the variables that affect faculty drive, as measured by the number of hours faculty members work, including time allocation, time disconnection, teaching, research, service, satisfaction, and sociodemographic characteristics.

## CHAPTER 3

### Conceptual Framework and Methodology

This study uses the National Study of Postsecondary Faculty's 1999 national faculty survey dataset (NSOPF:99) conducted by the United States National Center for Education (NCES) to examine the relationship between faculty drive (as measured by the number of hours faculty members work per week), and faculty time allocation and faculty time disconnection. This study includes a comprehensive framework of academic life that includes sociodemographic characteristics that are predominant in faculty work literature, as well as teaching, research, service, satisfaction, time allocation, and time disconnection characteristics. This study also examines how different aspects of academic work affect faculty drive.

Current literature on variables predicting faculty drive and hours worked focuses largely on sociodemographic characteristics that do not capture a comprehensive picture of the nature of academic work or the issues of time allocation and time disconnection. In this study, a broad range of faculty work issues are incorporated into a conceptual model and are tested using stepwise multiple regression analysis. This chapter states the study's research question and describes the conceptual model of academic work that guides this research study. Next, the data source and the items and measures used in the study are described. Finally, the statistical analyses used in this study are outlined.

#### Conceptual Framework

This study uses a conceptual framework that is premised on events occurring in

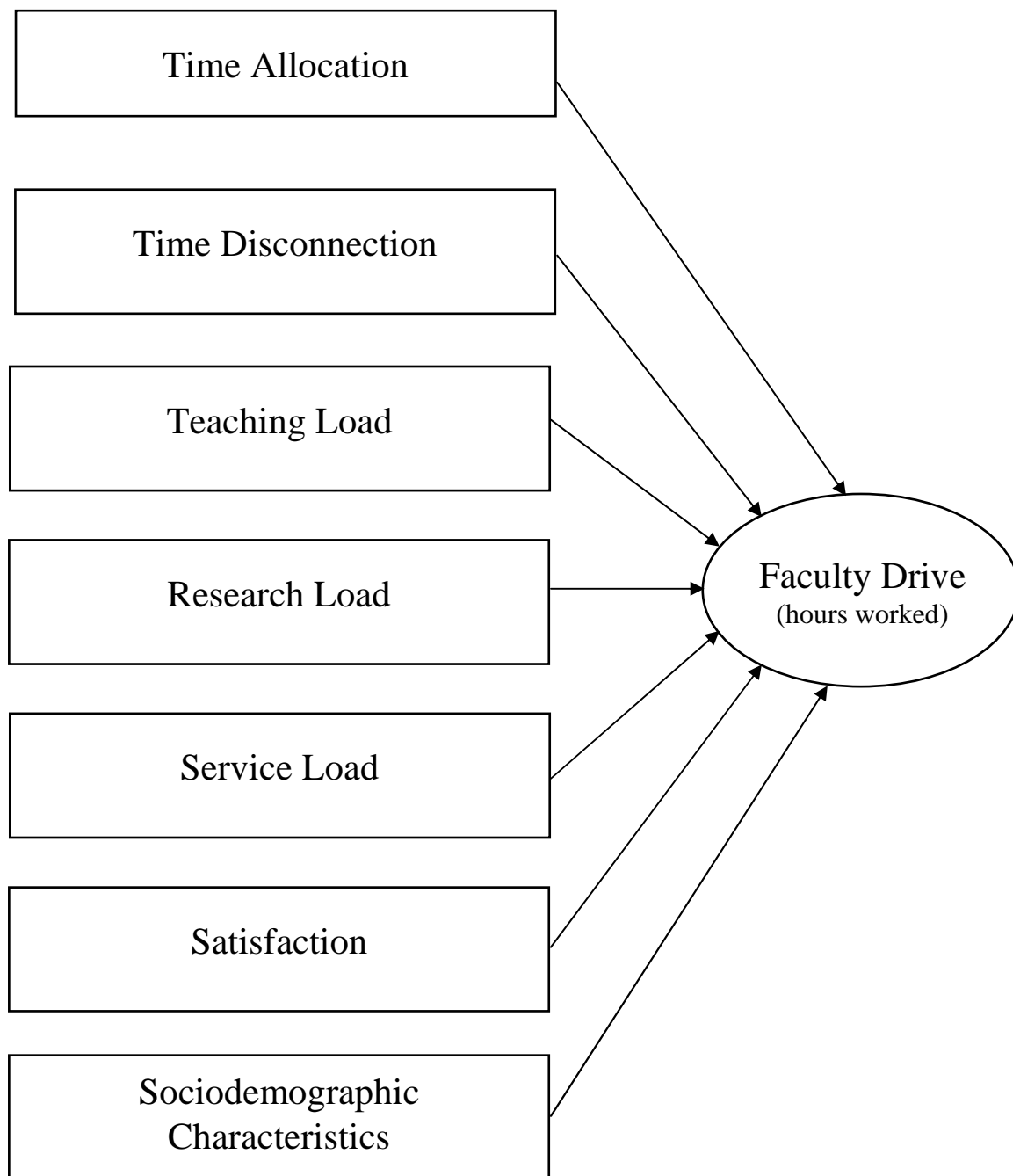
non-academic settings where professionals are working longer hours, experiencing greater workloads, and having less leisure time (Kanter, 1977; Schor, 1992; Stier & Lewin-Epstein, 2003). This study is designed to answer the following research question: “To what extent are time allocation and time disconnection associated with faculty drive in terms of the hours faculty members work?” The conceptual framework suggests that faculty *time allocation, time disconnection, teaching load, research load, service load, satisfaction, and sociodemographic characteristics* affect *faculty drive* as measured by the number of hours faculty members work per week (See Figure 1). Each variable in this conceptual model is described below.

**Dependent variable.**

The dependent variable in this model is *faculty drive*, conceptualized as the total number of hours faculty members work in an average week. Research shows that the total number of hours faculty members work varies by institutional type (Schuster & Finkelstein, 2006), discipline (Schuster & Finkelstein, 2006), appointment type (Antony & Raveling, 1998; Bland et al., 2006), gender, ethnicity, and status (Bellas & Toutkoushian, 1999), and rank and experience (Cox, 1991). This study’s conceptual model incorporates these findings and includes these sociodemographic items.

Research also shows that faculty members are struggling with long work hours and academic work tasks. Verrier (1994) found that for tenure-track faculty members, academic life is all-consuming. Reynolds (1992) identified a common theme of work intensity in the first years of academic life. New faculty members are overwhelmed with other work tasks and expectations to teach, advise students, interact with departmental

Figure 1

*Conceptual Framework*

committees, in addition to the pressure of becoming a top researcher (Reynolds, 1992). This study's conceptual model incorporates these findings and suggests a relationship between *time allocation, time disconnection, workload, satisfaction, and sociodemographic variables* that affect *faculty drive*.

### **Independent variables.**

This study proposes that seven independent variables are associated with the number of hours faculty members work per week: (1) *time allocation*, (2) *time disconnection*, (3) *teaching load*, (4) *research load*, (5) *service load*, (6) *satisfaction*, and (7) *sociodemographic characteristics*. These independent variables are investigated in relation to *faculty drive*.

The first independent variable focuses on faculty *time allocation*. Time allocation represents how faculty members allocate their time to seven different academic work spheres and the percentage of time faculty members allocate to each work sphere. Faculty members and graduate students alike are expressing increasing concern about faculty life, in terms of what faculty members are responsible for doing and how many hours faculty members spend completing their work (Austin, 2002; Rice et al., 2000; Sorcinelli & Billings, 1993). There is evidence that higher education is becoming more entrepreneurial and managerial (Neave, 1998), that faculty members experience stress from activities they perceive as wasting their time or effort (Narayanan, Menon, & Spector, 1999), that faculty members struggle with a work-life conflict (Olsen, 1993), that faculty members express dissatisfaction with the amount of time they have to complete their work (Olsen & Near, 1994), and that faculty members express dissatisfaction with the amount of time

they have to stay current in their academic field (Jacobs, 2004). Research shows that faculty members at all academic career stages perceive pressures and dissatisfaction from time constraints (Baldwin et al., 2005; Berberet et al., 2005; Rice et al., 2000).

Several studies indicate that more research must be conducted to understand better how faculty members allocate their time amongst faculty tasks and how these time allocations affect faculty drive and hours worked (Menges, 1999; Sorcinelli & Billings, 1993).

Research suggests that the hours faculty members work are related to tasks undertaken, productivity levels, and satisfaction in complex ways. To explore these relationships, this study examines faculty time allocation in relation to the *number of work spheres* in which faculty members work. This study also examines faculty time allocation in relation to the percentage of time spent on each of the seven work spheres: *percent time spent on undergraduate teaching, percent time spent on graduate teaching, percent time spent on research, percent time spent on professional development, percent time spent on service, percent time spent on administration, and percent time spent on other academic work*. The final time allocation measure examines the *time concentration* of faculty work by determining if a faculty member is allocating 75 percent or more time to one academic work sphere. Literature suggests that faculty members who are able to focus largely on one role and allocate the majority of time to one academic work sphere may be able to work fewer hours per week (Bland et al., 2006; Bland, Risbey, Center, & Finstad, n.d.).

The second independent variable focuses on faculty *time disconnection*. Time disconnection represents the difference between how faculty members allocate their time (actual time allocation) and how they would prefer to allocate their time (preferred time

allocation). When faculty members “work substantially more than they say they would like...[they are] overworked” (Clarkberg & Moen, 2001, p. 1120) *Time disconnection, preference for more work spheres, and preference for fewer work spheres* are the time disconnection measures.

Professionals use many skills and talents to work on complicated and overlapping tasks (Baldrige et al., 1983) and research finds that, in the past few decades, professionals conduct these overlapping tasks over longer periods of time with little to no time off from work (Feldman, 2002; Hochschild, 1997; Schor, 1992). Long hours, multiple tasks, and overwork have become acceptable work norms for managers and professionals (Schor, 1992). These expectations further burden the growing number of dual-career professional couples in the United States (Clarkberg & Moen, 2001). Organizations often use long hours to measure professional and managerial productivity and commitment (Clarkberg & Moen, 2001) and benefit from professionals who are fulfilling more tasks and activities when working longer hours. In the short run, overworked individuals benefit an organization, but in the long run being overworked can lead professionals to exhaustion from trying to manage work overload, role conflict, and role ambiguity over a long period of time (Moore, 2000).

*Teaching load, research load, and service load* are the next three independent variables in the conceptual model. *Teaching load* focuses on faculty members’ teaching tasks, including *classes taught, student committees served, and individual student instruction*. *Research load* focuses on faculty members’ research productivity, including *grants, sole-authored publications and presentations, and joint-authored publications and presentations*. *Service load* focuses on faculty members’ service commitments,

including service on *personnel, governance, and other administrative committees*.

Research suggests that faculty members have difficulty managing the number of academic tasks they are required to complete (Reynolds, 1992; Sorcinelli & Billings, 1993). Reynolds (1992) found that faculty members are overwhelmed with work tasks and expectations that they teach, advise students, interact with departmental committees, and become top researchers. Sorcinelli and Billings (1993) found that first-year junior faculty members experience high stress from trying to balance multiple academic tasks and older pre-tenure faculty members are frustrated by greater workloads. Workload items related to the teaching, research, and service variables are included in the model to test their relationship with faculty drive (as measured by the total number of hours faculty members work per week).

The sixth independent variable focuses on *faculty satisfaction*. *Satisfaction* focuses on faculty members' perceptions of their academic worklife. Satisfaction is measured by faculty members' self-ratings in the following areas: *workload, time available for classroom preparation, time available to advise students, time available to keep current in their academic field of study, the effectiveness of faculty leadership, freedom to do consulting, and their job overall*. Johnsrud and Heck (1998) found that faculty members are satisfied with their chosen profession, but are dissatisfied with "the attack on their professional priorities, their lack of confidence in their institution to support and protect their personal and professional interests, and the erosion of their quality of life" (p. 540). This dissatisfaction likely stems from time pressures that constrain what a faculty member can accomplish during a day and how many tasks a faculty member can fulfill. Olsen and Crawford (1998) found that as new faculty



members progressed from their first year to their fifth year in academia, their dissatisfaction and stress levels increased. Jacobs and Winslow (2004) found that the more hours faculty members work, the more dissatisfied they are with their workload.

The last independent variable focuses on *sociodemographic characteristics*, which includes individual faculty characteristics, family characteristics, and academic experiences. This independent variable is examined most frequently in the literature on the number of hours faculty work. The literature suggests that faculty drive (as measured by hours worked) is associated with individual faculty characteristics, family characteristics, and academic experiences (Bellas & Toutkoushian, 1999; Jacobs, 2004; Jacobs & Gerson, 2001). The literature emphasizes the importance of *gender* in faculty work satisfaction studies and shows that male and female faculty members can have differing experiences of academic time and satisfaction (Gander, 1999; Sorcinelli & Near, 1989; Verrier, 1994). Research also finds that faculty members of different *races and ethnicities* experience faculty worklife differently in terms of workload and expectations (Bellas & Toutkoushian, 1999; Thompson & Dey, 1998). Faculty studies on *family and marital status* and *socioeconomic status* indicate a possible relationship between these items and the total number of hours faculty members work per week (Jacobs, 2004).

Research also indicates that academic experiences affect academic worklife and faculty drive (as measured by the number of hours faculty members work per week). Research shows that educational attainment (Anderson, 2002; Milem et al., 2000; Zhou & Volkwein, 2004) is an important item to consider in faculty work studies; as such, this study's conceptual model also includes the *highest degree obtained* by faculty members

and the *number of years since their highest degree was obtained* as sociodemographic items. *Academic rank* and the *number of years employed in one's higher education job* are included as items in the model because they are found to be related to workload and satisfaction levels (Rice et al., 2000; Tien & Blackburn, 1996; Zhou & Volkwein, 2004). Full-time faculty members may hold one of three academic ranks: *assistant professor*, *associate professor*, or *full professor* (Tien & Blackburn, 1996). The *number of years employed in one's higher education job* accounts for the total number of years faculty members have spent in their current position, which includes promotions from lower to higher status academic ranks as part of the same position. The *number of years employed in one's higher education job* equals academic career age.

*Appointment type* is also included in the model because of evidence that it is associated with faculty outcomes (Anderson, 2002; Bland et al., 2006; Tierney & Bensimon, 1996). This item encompasses *tenured* appointments in which tenure has been awarded, *tenure-track* appointments in which tenure can be awarded but has not, and *not on tenure-track* appointments in which tenure cannot ever be awarded (Bland et al., 2006). Ten major areas of faculty members' *discipline* are also included in the model: *agriculture and home economics, business, education, engineering, fine arts, health sciences, humanities, natural sciences, social sciences, and other* (Zimbler, 2001).

## **Methodology**

This study uses data from a national data source to investigate the research question: "To what extent are time allocation and time disconnection associated with faculty drive in terms of the hours faculty members work?" This section discusses the

data source used in the study. It then discusses how items in the data source are used to measure the variables in the study. Next, it describes the methodological approach used to answer the research question.

### **Data source.**

This study analyzes faculty academic work and faculty outcomes using data collected from the National Center for Education Statistics' (NCES) 1999 National Survey of Postsecondary Faculty (subsequently referred to as NSOPF:99) and tests the conceptual model presented above. Compared to other published studies on academic work hours, this study incorporates the broadest range of NSOPF:99 academic worklife items that may affect faculty drive. Researchers continue to use the NSOPF:99 dataset in studies of faculty worklife (Akroyd, Bracken, & Chambers, 2011; Hubbard & Stage, 2009; Xu, 2008).

The NSOPF:99 dataset is based on a stratified systematic sample of faculty and instructional staff at all types of higher education institutions in the United States, and includes data on demographics, workload, compensation, and satisfaction (Abraham et al., 2002). The faculty survey was designed to collect data that are nationally representative, with a target population of United States full-time and part-time faculty and instructional staff (Abraham et al., 2002). The National Center for Educational Statistics (NCES) conducted national NSOPF studies in 1988 (NSOPF:88), 1993 (NSOPF:93), 1999 (NSOPF:99), and 2004 (NSOPF:04) (National Center for Education Statistics, n.d.). These surveys included samples of faculty members from all institutional types: NSOPF:88 sampled 11,000 instructional faculty from 480 institutions; NSOPF:93

sampled 31,354 faculty and instructional staff from 974 institutions; NSOPF:99 sampled 28,600 faculty and instructional staff from 960 institutions; and, NSOPF:04 sampled 35,000 faculty and instructional staff from 1,080 institutions (National Center for Education Statistics, n.d.).

The National Center for Education Statistics (NCES) created the NSOPF:99 faculty dataset sample with a three-stage process (Abraham et al., 2002). First, NCES sent surveys to 960 higher education institutions from the Integrated Postsecondary Education Data System (IPEDS), and obtained data on these institutions' full-time and part-time instructional faculty (Abraham et al., 2002). Next, NCES selected nearly 28,600 faculty members, eliminated almost 1,500 faculty members due to ineligibility, and derived a sample of just over 27,000 faculty members to participate in the NSOPF:99 faculty survey (Abraham et al., 2002). Finally, NCES focused on survey non-responders to increase the NSOPF:99 response rate (Abraham et al., 2002). The sampling strategy resulted in 19,213 completed faculty surveys, from which 17,600 surveys were eligible for the final sample (Abraham et al., 2002).

The NSOPF:99 survey had a weighted response rate of 83.2 percent, which represented the final sample and data weights for subsampling of the population (Abraham et al., 2002). All research and doctoral institutions (n=235), medical schools (n=47), and large, public, master's institutions (n=30) were included in the institution sample, and NCES oversampled full-time female faculty members, Black faculty members, Hispanic faculty members, and Asian or Pacific Islander faculty members (Abraham et al., 2002).

This study employs a subsample of full-time faculty members who work in

research and doctoral institutions. By focusing on full-time faculty members in research and doctoral institutions, this study can examine what variables affect faculty drive in terms of hours worked. These faculty members are hired to work long hours at institutions that require faculty members to be productive in teaching, research, and service. This study excludes faculty members who are on sabbatical and faculty members who have a master's degree, bachelor's degree, associate's degree, or a certificate or diploma for completion of an undergraduate program. After excluding these faculty members, this study's subsample consists of 3,812 full-time faculty members in research and doctoral institutions. Listwise deletion of cases because of missing values reduced the sample size from 3,812 faculty members to 3,584 faculty members in the stepwise multiple regression analysis.

### **Measurement of Variables**

This study uses several items collected in the NSOPF:99 dataset to explore the relationship between academic work and faculty drive (as measured by the number of hours faculty members work). Appendix 1 presents the items used to measure the independent variables in this study, along with the associated conceptual framework variables, survey item numbers and names, item types, and survey response categories. The item used to measure the dependent variable in this study is described next, followed by a description of the 62 items used to measure the independent variables in this study.

#### **Dependent variable.**

The dependent variable in this study is *faculty drive* as measured by the average

total number of hours faculty work per week. The NSOPF:99 survey asked faculty members to identify, on average, how many hours per week they spent on four activities during the 1998 Fall term. Responses could range from zero to 99 hours per week. The four hourly activities include: all paid activities at the institution (Q30a); all unpaid activities at the institution (Q30b); any other paid activities outside the institution (Q30c); and unpaid (*pro bono*) professional service activities outside the institution (Q30d). The measure of faculty drive is computed by summing the hours associated with each of the four hourly activities listed above. Faculty drive represents the average total number of hours per week faculty members spend on paid and unpaid tasks, both inside and outside their home institution, during the 1998 Fall term.

### **Independent variables.**

The 62 items that measure the independent variables used in this study relate to the conceptual model's seven independent variables: *time allocation*, *time disconnection*, *teaching load*, *research load*, *service load*, *faculty satisfaction*, and *sociodemographic characteristics* (see Appendix 1). The first independent variable focuses on faculty *time allocation* and includes the following nine items: *number of faculty work spheres*, *percent time spent on undergraduate teaching*, *percent time spent on graduate teaching*, *percent time spent on research*, *percent time spent on professional development*, *percent time spent on service*, *percent time spent on administration*, *percent time spent on other academic activities*, and *time concentration (allocating 75 percent or more time to one work sphere)*.

This study examines how faculty members allocate their time to seven different

academic work spheres and the percentage of time faculty members allocate to each work sphere. Faculty members in the NSOPF:99 study were asked to report their percentage of time allocated, from zero to 100, to the following seven academic work spheres during the 1998 Fall term: *teaching undergraduate students, teaching graduate or first professional students, research and scholarship, professional growth, administration, service, and other academic work*. These time allocation measures are all linear combinations and require the use of a referent group for statistical analyses. The percent of time faculty spent on graduate teaching was chosen as the referent group.

To determine the total *number of faculty work spheres* in which faculty members work, this study created a measure that counts the number of work spheres to which faculty members report allocating time. Faculty members in the NSOPF:99 survey could work in a maximum of seven work spheres or in a minimum of one work sphere. This study also calculated a time allocation measure (*time concentration*) that indicates whether or not a faculty member allocates 75 percent time or more to one work sphere.

The second independent variable focuses on *time disconnection* and includes the following three measures: *time disconnection* (total percentage difference between actual time allocations and preferred time allocations for all seven spheres), *preference for more work spheres*, and *preference for fewer work spheres*. Faculty members in the NSOPF:99 survey reported their actual time allocations in seven academic work spheres and their preferred time allocations in seven academic work spheres by indicating the percentage of time, from zero to 100 percent, allocated to each sphere for the 1998 Fall term.

Faculty time disconnection is captured in three different ways. First, a *time disconnection* measure was created to capture the total percentage difference between

faculty members' actual time allocations and preferred time allocations for all seven work spheres for the 1998 Fall term. This measure was created by determining the absolute value of the total difference between actual and preferred time allocations for all seven work spheres and then summing the absolute values found for all seven work spheres. Faculty members in the NSOPF:99 survey were only able to indicate how they would like to reallocate their work time by indicating the spheres in which they would prefer to allocate more time and the spheres in which they would prefer to allocate less time. Faculty members had to indicate their time reallocation preferences using percentages of time: if faculty members wanted to allocate less time to teaching, then they needed to indicate the spheres in which they wanted to allocate more time so that their total percentage of time allocated to all seven work spheres equaled 100 percent. Faculty members were not provided the option to indicate their time allocation preferences based on hours worked. If they had been provided this option, faculty members could have reported *only* those spheres in which they wanted to allocate more *or* less time.

Next, two measures were created from the NSOPF:99 dataset that focused on the *preference for more work spheres*, and the *preference for fewer work spheres*. These measures were created by determining the total difference between actual and preferred time allocations for all seven work spheres during the 1998 Fall term. If faculty members indicated that their actual time allocation was greater than their preferred time allocation within a work sphere, then the difference between the two measures would be positive. For example, if a faculty member allocated 60 percent time to teaching and preferred to allocate 30 percent time to teaching, then the difference between these two measures would be positive. This positive value indicates that a faculty member would prefer to



allocate less time to teaching (*preference for fewer work spheres*). If faculty members indicated that their actual time allocation was less than their preferred time allocation within a work sphere, then the difference between the two measures would be negative. This negative value indicates that a faculty member would prefer to allocate more time to the work sphere (*preference for more work spheres*).

Positive differences between actual and preferred time allocation were assigned a value of one and negative differences between actual and preferred time allocations were assigned a value of negative one. The number of spheres (ranging from zero to six) in which the value of one had been assigned were counted to create the *preference for fewer work spheres* measure. The number of spheres (ranging from zero to six) in which the value of negative one had been assigned were then counted to create the *preference for more work spheres* measure.

The third independent variable is *teaching load* and it includes the following six items from the NSOPF:99 dataset: *number of classes taught, number of undergraduate committees served, number of graduate committees served, number of undergraduate students taught individually, number of graduate students taught individually, and number of first professional students taught individually*. Faculty members in the NSOPF:99 survey were asked to indicate the total *number of classes taught* during the 1998 Fall term. Faculty members could respond with a value from zero to 99 classes. Faculty members were also asked to indicate the *number of undergraduate committees served* and the *number of graduate committees served* (including thesis and dissertation committees) at the institution during the 1998 Fall term. Faculty members could respond with values between zero and 99. Faculty members also indicated the *number of*

*undergraduate, graduate, and first professional students taught individually* during the 1998 Fall term. The number of students who were taught individually for each of these three items could range from zero to 999.

The fourth independent variable is *research load* and it includes the following ten items from the NSOPF:99 dataset: *grant dollars obtained, number of grants obtained, number of sole-authored refereed articles published in the past two years, number of sole-authored non-refereed articles published in the past two years, number of sole-authored books and reports published in the past two years, number of sole-authored presentations in the past two years, number of joint-authored refereed articles in the past two years, number of joint-authored non-refereed articles in the past two years, number of joint-authored books and reports published in the past two years, and number of joint-authored presentations in the past two years.*

Faculty members in the NSOPF:99 survey reported their total *grant dollars obtained* by indicating the total amount of funds they received from all sources during the 1998-99 academic year as measured from \$0 to \$9,999,999. The actual amounts reported from faculty members are highly skewed (Bland et al., 2006) so the log of this item was used in this study.

Faculty members in the NSOPF:99 survey also indicated the total *number of grants obtained* (including contracts) they received from all sources during the 1998 Fall term. Responses could range from zero to 99 grants or contracts. Faculty members also reported their research activity based on whether they had sole-author responsibility (e.g., only author on an article) or joint-author responsibility (e.g., a co-author on an article) on works they had published during the last two years. For each research activity (excluding

presentations made), faculty could report a value between zero and 99. Faculty could report a value between zero and 999 for the number of presentation made during the last two years.

This study includes the following eight research items from the NSOPF:99 dataset: (1) *the number of sole-author articles published in refereed professional or trade journals or creative works published in juried media*; (2) *the number of sole-author articles published in non-refereed professional or trade journals or creative works published in non-juried media or in-house newsletters*; (3) *the number of sole-author textbooks, other books, monographs, or research or technical reports disseminated internally or to clients*; (4) *the number of sole-author presentations at conferences, workshops, exhibitions or performances in the fine or applied arts*; (5) *the number of joint-author articles published in refereed professional or trade journals or creative works published in juried media*; (6) *the number of joint-author articles published in non-refereed professional or trade journals or creative works published in non-juried media or in-house newsletters*; (7) *the number of joint-author textbooks, other books, monographs, or research or technical reports disseminated internally or to clients*; and, (8) *the number of joint-author presentations at conferences, workshops, exhibitions or performances in the fine or applied arts*.

The fifth independent variable is *service load* and it includes three service-related items from the NSOPF:99 dataset. Faculty members in the NSOPF:99 survey were asked to indicate, during the 1998 Fall term, the *number of personnel committees on which they served*, the *number of governance committees on which they served*, and the *number of*

*other administrative committees on which they served.* Faculty members could respond with a value between zero and 99 for each service load variable.

The sixth independent variable is faculty satisfaction. Satisfaction items in the NSOPF:99 study were measured by faculty members' self-ratings. Seven NSOPF:99 satisfaction items are included in this study: *satisfaction with my workload, satisfaction with time available for class preparation, satisfaction with time available for working with students as advisors, mentors, etc., satisfaction with time available for keeping current in my field, satisfaction with the effectiveness of faculty leadership at the institution, satisfaction with the freedom to do outside consulting, and satisfaction with my overall job here.* These satisfaction items focus on faculty members' perceptions of time, and how satisfied they are with aspects of their time allocations. The NSOPF:99 study used an ordinal scale that ranged from very dissatisfied (1) to very satisfied (4) to measure faculty member's satisfaction levels for each of these items.

The last independent variable is *sociodemographic characteristics* and it includes items from the NSOPF:99 dataset about individual characteristics, family characteristics, and academic experiences. This study includes the following sociodemographic items from the NSOPF:99 dataset: *gender, race, family status, number of dependents, family income, highest degree obtained, number of years since highest degree obtained, academic rank, number of years employed in one's higher education job, tenure status, and academic discipline.* *Gender* is a dichotomous item in which faculty members in the NSOPF:99 dataset indicated whether they were male or female. Male faculty members were selected for this study as the referent group. Faculty *race* in the NSOPF:99 dataset is a categorical item in which faculty members indicated their race as American Indian or

Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, or White. A dichotomous item was created for this study to determine if faculty members were minority faculty members (i.e., faculty members identified as any race but White), or majority faculty members (i.e., faculty members identified as White). Majority faculty members were selected as the referent group for this study.

Faculty members indicated their *family status* in the NSOPF:99 dataset using the following four categorical options: single, never married; married; living with someone in a marriage-like relationship; and, separated, divorced, or widowed. This study collapsed the marital status item into a dichotomous item that indicated if a faculty member was single (which included single, never married faculty members and faculty members who were separated, divorced, or widowed) or married (which included married faculty members and faculty members living with someone in a marriage-like relationship). Married faculty members were selected as the referent group for this study.

Faculty members in the NSOPF:99 dataset also indicated the number of *dependents* they had during the 1998 calendar year. This item was recoded, in this study, into a dichotomous item to indicate whether faculty members had dependents or did not have any dependents during the 1998 calendar year. Not having any dependents was chosen as the referent group for this study. *Family income* was also included in this study. In the NSOPF:99 survey, faculty members were asked to indicate their total household income before taxes during the 1998 calendar year. Faculty members responded by indicating between \$0 and \$9,999,999 for their family income.

Faculty members were also asked in the NSOPF:99 survey to indicate their *highest degree obtained* based on the following seven categories: first professional

degree, doctoral degree, masters of fine arts or masters of social work degree, other master's degree, bachelor's degree, associate's degree or equivalent, or, certificate or diploma for completion of an undergraduate program. This study limited faculty members in the sample to those who held a doctoral degree or professional degree. A dichotomous item was created to indicate if faculty members held a doctoral degree or did not hold a doctoral degree (i.e., professional degree). Not holding a doctoral degree was chosen as the referent group for this study. Faculty members in the NSOPF:99 survey were also asked to indicate, as of 1998, the year their highest degree was obtained. (*number of years since one's highest degree was obtained*). Faculty members could respond that they had earned their highest degree between zero to 98 years ago. This study calculated the number of years since one's highest degree was obtained by subtracting the year faculty members earned their degree from 1998.

Faculty members identified their *faculty rank* in the NSOPF:99 study as professor, associate professor, assistant professor, instructor, lecturer, or other. The ranks of *professor*, *associate professor*, and *assistant professor* were included in this study and were recoded into three indicator items. The rank of professor was chosen as the referent group for this study.

Faculty members were also asked in the NSOPF:99 survey to indicate the year they had began the job they currently held at the institution during the 1998 Fall term (*number of years employed in one's higher education job*). Faculty members' current job includes promotions from one rank to another; that is, faculty members are not considered to have a new job after a promotion to a higher rank. Faculty members responded to this item in the NSOPF:99 survey by indicating the last two digits of the

year they began their current job (including all promotions between ranks). This study calculated the number of years in one's higher education job by subtracting the year faculty members began in academia from 1998.

Faculty members in the NSOPF:99 study were also asked about their *tenure status* at their current institution during the 1998 Fall term. Faculty members indicated if they were tenured, on tenure-track but not tenured, not on tenure-track although the institution has a tenure system, or employed at an institution with no tenure system. This study included faculty members who were in *tenure appointments*, *tenure-track appointments*, and *not on tenure-track appointments*. These three tenure status items were recoded into indicator items, and tenured appointments was chosen as the referent group for this study.

Faculty members in the NSOPF:99 study were also asked to indicate their principal field or discipline of research. Faculty members choose their discipline from an extensive list of principal fields or discipline codes. The NSOPF:99 dataset included an item that collapsed the extensive list of discipline codes into ten disciplinary areas (Zimble, 2001). The following ten *academic disciplines* were included as indicator items in this study: *agriculture and home economics*, *business*, *education*, *engineering*, *fine arts*, *health sciences*, *humanities*, *natural sciences*, *social sciences*, and *all other programs*. The humanities discipline was chosen as the referent group for this study.

### **Analytical Methods**

This study analyzed the NSOPF:99 survey data using SPSS version 14.0. Frequency tables for all items in the NSOPF:99 dataset were first conducted to identify which items needed correction for erroneous data or adjustments for erroneous data

outliers and non-normality. Descriptive statistics (frequencies, means, and distributions of the data) were then conducted on this study's 63 items and measures to understand better the profiles of the dependent and independent variables. A series of one-way analyses of variance were then conducted on all categorical items and measures in this study to determine their relationships to the dependent variable (faculty drive).

Next, a comprehensive correlation table was created to identify how items and measures in this study, and other items from the NSOPF:99 dataset that were subsequently removed from the dataset for multicollinearity reasons, were related. This correlation analysis identified instances of multicollinearity (instances where items or measures had a correlation greater than 0.75). Issues of multicollinearity were resolved by removing items and measures from this study; one item that measured the dependent variable and 62 items that measured the independent variables remained in this study after the issues of multicollinearity were addressed.

A stepwise multiple regression analysis was then conducted. First, the analysis focused on the stepwise aspect of the multiple regression model to determine the effect of each group (block) of items that measured the independent variables on each other and the dependent variable (as measured by the number of hours faculty members work). The groups of items and measures were entered (stepped) into the final stepwise multiple regression model in the following order: sociodemographic items, teaching load items, research load items, service load items, time allocation measures, time disconnection measures, and satisfaction items. The items and measures in each block of the stepwise multiple regression model were first added separately and then entered as a group. This process was repeated for each block of items: sociodemographic characteristics, teaching



load, research load, service load, time allocation, time disconnection, and satisfaction.

After each new block was entered into the model, results were scrutinized for changes in beta weights, significance levels, and variance inflation factors. These analyses provided insights into how the items and measures in the blocks were related to each other and to all the other items and measures in the stepwise multiple regression model.

Results of the stepwise multiple regression were then analyzed for insights into the relationship between this study's 62 items that measured the independent variables and the dependent variable (faculty drive) and for the explanatory power of the model. The next chapter discusses the findings from the descriptive and analytical analyses performed in this study.

## CHAPTER 4

### Analysis of Findings

This study is based on a conceptual model of relationships between time allocation, time disconnection, workload, sociodemographic characteristics, and faculty drive. This chapter presents findings from the descriptive and analytical analyses conducted for this study. The chapter begins by reviewing the descriptive analyses conducted on the 63 items and measures in this study. Next, findings from the correlation analysis are discussed. Findings from the stepwise multiple regression analysis are then presented. Findings from the stepwise component of the regression model are examined first and important blocks of items and measures are identified. Results from the multiple regression component of the regression model are discussed next and items and measures that are associated with faculty drive in terms of the hours faculty members work are identified.

#### Descriptive Findings

This study uses a sample of 3,812 full-time faculty members from research and doctoral institutions across the United States. The sample's descriptive profile is found in Table 3.

Faculty members in this study allocate their time to seven different work spheres: undergraduate teaching, graduate teaching, research, professional development, administration, service, and other activities. While faculty members could work in all seven work spheres, nearly half of the faculty members work in four or five work

Table 3

*Percentage Distributions of Faculty Respondents by Independent Variables (N=3,812)*

Independent Variables	Percent
Time Allocation	
Number of Faculty Work Spheres	
1	1.7
2	4.5
3	13.1
4	23.8
5	28.4
6	19.5
7	9.0
Percent Time Spent on Undergraduate Teaching	
None	30.8
1-19	16.5
20-39	24.2
40-59	14.7
60-79	9.8
80-100	3.9
Percent Time Spent on Graduate Teaching (referent group)	
None	19.5
1-19	32.7
20-39	32.8
40-59	10.2
60-79	3.3
80-100	1.5
Percent Time Spent on Research	
None	6.5
1-19	35.4
20-39	31.0
40-59	16.8
60-79	6.5
80-100	3.8

Table 3

*Percentage Distributions of Faculty Respondents by Independent Variables (N=3,812)*  
(continued)

Independent Variables	Percent
Time Allocation (continued)	
Percent Time Spent on Professional Development	
None	52.9
1-19	45.8
20-39	1.0
40-59	0.2
Percent Time Spent on Service	
None	37.9
1-19	48.3
20-39	7.1
40-59	3.2
60-79	2.5
80-100	0.9
Percent Time Spent on Administration	
None	19.7
1-19	54.3
20-39	14.9
40-59	5.7
60-79	3.3
80-100	2.1
Percent Time Spent on Other Activities	
None	65.8
1-19	31.1
20-39	1.7
40-59	1.0
60-79	0.3

Table 3

*Percentage Distributions of Faculty Respondents by Independent Variables (N=3,812)*  
*(continued)*

Independent Variables	Percent
Time Allocation (continued)	
Time Concentration	
No	83.1
Yes	16.9
Time Disconnection	
Time Disconnection	
None	12.8
1-19	8.0
20-39	25.2
40-59	25.6
60-79	14.3
80-100	9.4
101-201	4.7
Preference for More Work Spheres	
None	12.9
1	23.0
2	28.7
3	21.7
4	10.0
5	3.1
6	0.6
Preference for Fewer Work Spheres	
None	12.8
1	32.1
2	34.4
3	15.6
4	4.5
5	0.6

Table 3

*Percentage Distributions of Faculty Respondents by Independent Variables (N=3,812)*  
*(continued)*

Independent Variables	Percent
Teaching Load	
Classes Taught	
None	17.0
1	19.5
2	32.3
3	16.2
4-20	15.0
Number of Undergraduate Committees Served	
None	77.7
1	9.3
2	5.9
3-10	7.1
Number of Graduate Committees Served	
None	27.3
1-2	26.0
3-5	25.5
5-20	21.2
Number of Undergraduate Students Taught Individually	
None	62.3
1-7	26.9
8-100	10.2
101-125	0.6
Number of Graduate Students Taught Individually	
None	44.6
1-3	29.0
4-7	15.6
7-25	10.9

Table 3

*Percentage Distributions of Faculty Respondents by Independent Variables (N=3,812)  
(continued)*

Independent Variables	Percent
Teaching Load (continued)	
Number of First Professional Students Taught Individually	
None	82.1
1-7	8.4
8-20	5.4
21-60	4.0
Research Load	
Grant Dollars Obtained	
None	49.8
\$1-\$100,000	25.5
\$100,001-\$500,000	19.3
\$500,001-\$1,000,000	3.4
\$1,000,001-\$2,000,000	2.0
Number of Grants Obtained	
None	47.8
1-2	31.6
3-5	16.6
6-10	4.0
Number of Sole-Authored Refereed Articles Published	
None	44.6
1-2	27.3
3-5	15.7
6-40	12.4
Number of Sole-Authored Books/Reports Published	
None	77.0
1-2	16.1
3-5	4.0
6-40	2.9

Table 3

*Percentage Distributions of Faculty Respondents by Independent Variables (N=3,812)*  
(continued)

Independent Variables	Percent
Research Load (continued)	
Number of Sole-Authored Presentations	
None	24.2
1-3	24.8
4-10	28.4
10-30	15.3
30-160	7.2
Number of Joint-Authored Refereed Articles	
None	31.4
1-2	23.8
3-5	20.5
6-40	24.3
Number of Non-Refereed Joint-Authored Articles Published	
None	74.4
1-2	13.1
3-5	7.1
6-40	5.4
Number of Joint-Authored Books/Reports Published	
None	77.0
1-2	15.3
3-5	4.8
6-40	2.8
Number of Joint Presentations	
None	42.8
1-3	25.8
4-10	20.6
10-30	7.7
30-160	3.0



Table 3

*Percentage Distributions of Faculty Respondents by Independent Variables (N=3,812)*  
*(continued)*

Independent Variables	Percent
Service Load	
Number of Personnel Committees Served	
None	48.4
1	32.6
2-8	19.0
Number of Governance Committees Served	
None	50.1
1	29.0
2-8	20.9
Number of Other Administrative Committees Served	
None	47.5
1	25.5
2-8	27.0
Satisfaction	
Satisfaction with Workload	
Very dissatisfied	9.5
Somewhat dissatisfied	25.0
Somewhat satisfied	39.5
Very satisfied	26.0
Satisfaction with Time for Class Preparation	
Very dissatisfied	4.4
Somewhat dissatisfied	19.4
Somewhat satisfied	45.9
Very satisfied	30.2

Table 3

*Percentage Distributions of Faculty Respondents by Independent Variables (N=3,812)  
(continued)*

Independent Variables	Percent
Satisfaction (continued)	
Satisfaction with Time to Advise Students	
Very dissatisfied	4.3
Somewhat dissatisfied	19.1
Somewhat satisfied	45.8
Very satisfied	30.8
Satisfaction with Time to Keep Current in Field	
Very dissatisfied	12.6
Somewhat dissatisfied	35.4
Somewhat satisfied	34.9
Very satisfied	17.2
Satisfaction with Faculty Leader Effectiveness	
Very dissatisfied	18.7
Somewhat dissatisfied	33.4
Somewhat satisfied	37.9
Very satisfied	10.0
Satisfaction with Freedom to do Consulting	
Very dissatisfied	3.9
Somewhat dissatisfied	10.5
Somewhat satisfied	46.9
Very satisfied	38.7
Satisfaction with Job Overall	
Very dissatisfied	3.3
Somewhat dissatisfied	14.2
Somewhat satisfied	48.5
Very satisfied	33.9

Table 3

*Percentage Distributions of Faculty Respondents by Independent Variables (N=3,812)  
(continued)*

Independent Variables	Percent
Sociodemographic Characteristics	
Gender	
Male (referent group)	68.6
Female	31.4
Race	
Majority (referent group)	78.1
Minority	21.9
Family Status	
Married/Partner (referent group)	80.8
Single	19.2
Dependents	
None (referent group)	34.3
Any Dependents	65.7
Family Income	
\$0-\$75,000	24.3
\$75,001-\$120,00	27.7
\$120,001-\$180,000	23.9
\$180,001-\$1,000,000	18.4
\$1,000,001-\$1,500,000	5.6
Highest Degree	
No Doctoral Degree (referent group)	15.5
Doctoral Degree	84.5
Number of Years Since Highest Degree Obtained	
0-7	22.9
8-15	26.0
16-25	27.1
26-46	24.0

Table 3

*Percentage Distributions of Faculty Respondents by Independent Variables (N=3,812)  
(continued)*

Independent Variables	Percent
Sociodemographic Characteristics (continued)	
Academic Rank	
Professor (referent group)	39.7
Associate Professor	31.5
Assistant Professor	28.8
Number of Years Employed in One's Higher Education Job	
None (Employed Less Than 12 Months)	8.0
1-7	35.8
8-18	30.5
19-39	25.7
Tenure Status	
Tenured Appointment (referent group)	62.5
Tenure-Track Appointment	23.3
Not on Tenure-Track Appointment	14.2
Academic Discipline	
Humanities (referent group)	11.4
Agriculture & Home Economics	3.0
Business	5.2
Education	5.9
Engineering	7.7
Fine Arts	2.4
Health Sciences	17.4
Natural Sciences	24.2
Social Sciences	13.6
Other Disciplines	9.2

spheres. Roughly two-thirds of faculty members allocate time to undergraduate teaching and more than three-quarters of faculty members allocate time to graduate teaching. Nearly one-quarter of faculty members in this study report allocating 20 to 39 percent of their time to undergraduate teaching, and four percent of faculty members report allocating 80 to 100 percent of their time to teaching undergraduate students. Two-thirds of faculty members in this study report allocating up to 40 percent of their time to graduate teaching and two percent report allocating 80 to 100 percent of their time to graduate teaching.

Nearly all faculty members allocate time to research. Only seven percent of faculty members allocate no time to research. Two-thirds of faculty members allocate up to 40 percent of their time to research. Approximately half of the faculty members in this study did not allocate time to professional development, while roughly half of the faculty members in this study allocate up to 20 percent of their time to professional development activities. About half of the faculty members allocate up to 20 percent of their time to administration, about half of the faculty members allocate up to 20 percent of their time to service, and almost one-third of the faculty members allocate up to 20 percent of their time to other academic activities. Roughly one-fifth of faculty members allocate 75 percent or more time to one work sphere (time concentration).

Faculty members in this study also indicated how they actually allocate their time and how they would prefer to allocate their time in seven work spheres (time disconnection). Thirteen percent of the faculty members in this study reported no difference in how they actually allocate their time and how they would prefer to allocate

their time. Half of the faculty members in this study report that they would prefer to allocate between 20 percent and 59 percent of their time differently between the spheres compared to how they are currently allocating their time. Half of the faculty members in this study would prefer to allocate more time to one or two more work spheres than they are currently working (preference for more work spheres) and two-thirds of faculty members in this study would prefer to allocate less time to one or two fewer work spheres than they are currently working (preference for fewer work spheres).

Roughly one-fifth of faculty members did not teach a class, whereas fifteen percent of faculty members taught four or more classes. Nearly one-quarter of faculty members served on undergraduate committees and roughly three-quarters of faculty members served on graduate committees. About one-third of faculty members provided individualized instruction to undergraduate students, over half of faculty members provided individualized instruction to graduate students, and nearly one-fifth of faculty members provided individualized instruction to first professional students.

More than half of the faculty members have obtained a grant and one-quarter of the faculty members hold grants valued up to \$100,000. Over half of the faculty members published sole-authored refereed articles in the past two years and over one-third of the faculty members published sole-authored non-refereed articles in the past two years. Less than a quarter of the faculty members in this study published sole-authored books in the past two years, and more than three-quarters of faculty members made sole-authored presentations in the past two years. Faculty members in this study are also productive in terms of joint-authored research: over two-thirds of the faculty members published joint-authored refereed articles in the past two years, nearly one-quarter of the faculty members

published joint-authored non-refereed articles in the past two years, roughly one-quarter of the faculty members published joint-authored books or reports in the past two years, and over half of the faculty members presented joint-authored presentations in the past two years.

Faculty members in this study participate widely in personnel, governance, and other administrative committees. Roughly half of the faculty members serve on one or more personnel committees, roughly half of the faculty members serve on one or more governance committees, and roughly half of the faculty members serve on one or more other administrative committees. Approximately twenty percent of the faculty members in this study serve on more than two personnel committees, and approximately twenty percent of the faculty members serve on more than two governance committees. Over one-quarter of the faculty members serve on more than two other administrative committees.

Faculty members in this study report their levels of satisfaction on a number of questions related to academic life. Nearly one-quarter of the faculty members are not satisfied with their time to advise students, and nearly one-quarter of the faculty members are not satisfied with their time for classroom preparation. Roughly two-thirds of the faculty members are satisfied with their workload. Nearly half of the faculty members are dissatisfied with their time to keep current in their field, and over half of the faculty members are dissatisfied with faculty leader effectiveness. The majority of faculty members are satisfied with their freedom to do consulting and with their job overall.

Roughly one-third of the faculty members in this study are female and approximately one-fifth of the faculty members are minority faculty members. Nearly

twenty percent of the faculty members in this study are single and roughly two-thirds of the faculty members have dependents. Over half of the faculty members have a family income of \$120,000 or less.

Over four-fifths of the faculty members in this study have a doctoral degree. Nearly one-quarter of the faculty members obtained their highest degree seven or fewer years ago and roughly one-quarter of the faculty members obtained their highest degree 26-46 years ago. Faculty members are fairly evenly divided into three ranks: roughly one-third of the faculty members are assistant professors, nearly one-third of the faculty members are associate professors, and approximately one-third of the faculty members are full professors. Eight percent of the faculty members in this study are in their first year of employment in higher education, and over one-quarter of the faculty members have spent 19-39 years as a faculty member in their current higher education job.

Roughly two-thirds of the faculty members in this study are tenured, while fourteen percent of the faculty members are in appointments that are not on the tenure-track. Nearly one-quarter of the faculty members are in the natural sciences discipline and roughly one-quarter of the faculty members are in the humanities or social sciences disciplines. The fewest number of faculty members are in the fine arts and agriculture and home economics disciplines.

### **Analytical Results**

This study developed a stepwise multiple regression model to determine what variables were significantly related to faculty drive in terms of hours worked. To this end, the mean total number of hours faculty members worked per week was analyzed using all



categorical items and measures in this study. Significant differences in these one-way analyses of variance suggest relationships that are likely to be replicated in more complex analyses including stepwise multiple regression analyses.

### **Analyses of variance.**

Faculty members in this study worked on average 56 hours per week. Significant variations in faculty drive were identified when different categorical items and measures in this study were considered. A series of one-way analyses of variance (ANOVA) were conducted to determine how the number of hours faculty members work per week varies when time allocation, time disconnection, satisfaction, and sociodemographic items and measures are considered. There were no categorical items or measures of teaching load, research load, or service load; as such, these independent variables were not included in the ANOVA analyses. Results of the ANOVA analyses on the total number of hours worked for all categorical items and measures in this study are presented in Table 4.

Faculty drive, in terms of the total number of hours faculty members worked per week, varies in relation to many of the items and measures used in the ANOVA analyses. Faculty members work the highest number of hours per week when they allocate time to all seven work spheres. Faculty members who allocate time to two work spheres work the fewest number of hours per week; faculty members who allocate time to one work sphere work the second fewest hours per week. Differences in total hours worked were also found between faculty members who allocate 75 percent or more time to one work sphere, and faculty members who allocate less than 75 percent of their time to one work sphere, with the former working fewer hours than the latter.

Table 4

*One-Way Analysis of Variance of Total Hours Worked by Independent Variables  
(N=3,812)*

Independent Variables	Average Total Hours Worked
Time Allocation	
Number of Faculty Work Spheres	
1	51.3 ***
2	49.8
3	53.3
4	55.4
5	57.4
6	57.9
7	58.4
Time Concentration	
No (referent group)	56.6 ***
Yes	53.7
Time Disconnection	
Preference for More Work Spheres	
None	54.0 ***
1	55.6
2	56.3
3	56.8
4	57.5
5	56.0
6	60.1
Preference for Fewer Work Spheres	
None	54.0 **
1	55.9
2	56.5
3	56.9
4	57.7
5	59.0

Table 4

*One-Way Analysis of Variance of Total Hours Worked by Independent Variables  
(N=3,812) (continued)*

Independent Variables	Average Total Hours Worked	
Satisfaction		
Satisfaction with Time to Advise Students		
Very dissatisfied	58.9	***
Somewhat dissatisfied	58.6	
Somewhat satisfied	55.7	
Very satisfied	54.8	
Satisfaction with Time for Class Preparation		
Very dissatisfied	61.1	***
Somewhat dissatisfied	58.8	
Somewhat satisfied	55.7	
Very satisfied	54.4	
Satisfaction with Workload		
Very dissatisfied	60.9	***
Somewhat dissatisfied	57.9	
Somewhat satisfied	55.4	
Very satisfied	53.7	
Satisfaction with Time to Keep Current in Field		
Very dissatisfied	59.2	***
Somewhat dissatisfied	57.0	
Somewhat satisfied	54.9	
Very satisfied	54.5	
Satisfaction with Faculty Leader Effectiveness		
Very dissatisfied	58.1	***
Somewhat dissatisfied	56.0	
Somewhat satisfied	55.5	
Very satisfied	55.0	

Table 4

*One-Way Analysis of Variance of Total Hours Worked by Independent Variables  
(N=3,812) (continued)*

Independent Variables	Average Total Hours Worked	
Satisfaction (continued)		
Satisfaction with Freedom to do Consulting		
Very dissatisfied	57.7	
Somewhat dissatisfied	55.9	
Somewhat satisfied	56.0	
Very satisfied	56.2	
Satisfaction with Job Overall		
Very dissatisfied	60.0	***
Somewhat dissatisfied	56.9	
Somewhat satisfied	56.2	
Very satisfied	55.3	
Sociodemographic Characteristics		
Gender		
Male (referent group)	56.4	*
Female	55.4	
Race		
Majority (referent group)	56.4	*
Minority	55.2	
Family Status		
Married/Partner (referent group)	55.9	
Single	56.8	
Dependents		
None (referent group)	56.5	
Any Dependents	55.9	

Table 4

*One-Way Analysis of Variance of Total Hours Worked by Independent Variables  
(N=3,812) (continued)*

Independent Variables	Average Total Hours Worked	
Sociodemographic Characteristics (continued)		
Highest Degree		
No Doctoral Degree (referent group)	58.1	***
Doctoral Degree	55.7	
Academic Rank		
Professor (referent group)	57.5	***
Associate Professor	54.5	
Assistant Professor	55.9	
Tenure Status		
Tenured Appointment (referent group)	56.2	**
Tenure-Track Appointment	56.8	
Not on Tenure-Track Appointment	54.5	
Academic Discipline		
Humanities (referent group)	53.9	***
Agriculture & Home Economics	55.8	
Business	55.5	
Education	54.9	
Engineering	58.4	
Fine Arts	56.3	
Health Sciences	57.8	
Natural Sciences	56.6	
Social Sciences	55.8	
Other Disciplines	56.2	

Level of significance of F test: \*p < .05; \*\*p < .01; \*\*\*p < .001

Faculty members in this study also reported the time they actually allocated, and the time they preferred to allocate, to undergraduate teaching, graduate teaching, research, professional development, administration, service, and other activities (time disconnection). Significant differences in mean total hours worked per week were found for faculty members who preferred to work in more work spheres and who preferred to work in fewer work spheres. Faculty members who preferred to work in more spheres report working more hours per week than faculty members who preferred not to work in any more work spheres. Faculty members who would prefer to work in six more work spheres report the highest number of hours worked per week. The same trend occurs for faculty members who preferred to work in fewer work spheres. Faculty members who preferred to work in five fewer work spheres report the highest number of hours worked per week. Faculty members who have no preference for changing their time allocations between the spheres report working the fewest number of hours per week.

The number of hours faculty members work per week also differs by satisfaction levels. Dissatisfied faculty members work significantly more hours per week than satisfied faculty members for all satisfaction variables, with the exception of satisfaction with the freedom to do consulting. Faculty members who are very dissatisfied with their time to advise students, their time for class preparation, their workload, their time to keep current in the field, and their job overall work upwards of 60 hours per week. For all satisfaction items, with the exception of satisfaction with the freedom to do consulting, very satisfied faculty members report working the fewest number of hours per week.

Male faculty members work one more hour per week than female faculty members. Majority faculty members work almost one more hour per week than minority

faculty members. This one-hour difference is significant for both gender and race. Faculty members who do not hold a doctoral degree work more hours than faculty members whose highest terminal degree is a doctoral degree. Professors and assistant professors work significantly more hours than associate professors. Full professors work the highest number of hours per week, compared to associate professors or to assistant professors.

Faculty members on tenure-track appointments work more hours per week than faculty members who are not on tenure-track appointments, and work roughly one-half-hour more per week than faculty members on tenured appointments. Faculty members in engineering and the health sciences work the highest number of hours per week. Faculty members in the humanities work the fewest number of hours per week.

### **Correlation analysis.**

The purpose of this study is to determine the extent to which faculty time allocation and faculty time disconnection affect faculty drive in terms of the number of hours worked. The relationships between the 62 items measuring the independent variables and the one dependent variable (faculty drive) were analyzed using Pearson bivariate correlations. These correlations are found in Appendix 2.

Bivariate correlations indicate that many items and measures in this study are related to the dependent variable of faculty drive (as measured by the number of hours faculty members work). The next section describes the relationships between the dependent variable and the 62 items that measure the independent variables. These relationships, while significant, have a correlation coefficient of less than 0.2.

A positive correlation was found between the number of work spheres in which faculty work and faculty drive. Faculty members who work in more work spheres tend to work longer hours per week. Both the percentage of time faculty members allocate to undergraduate teaching and to time concentration (i.e., allocating 75 percent or more time to one work sphere) are negatively related to total hours worked per week. Faculty members who allocate a greater percentage of time to teaching and faculty members who focus their time primarily on one work sphere (time concentration) tend to work fewer hours per week. Positive correlations were found between faculty drive and the percentage of time faculty members allocate to administration, service, and other academic activities. The more time faculty members allocate to these activities, the more likely they are to work longer hours per week.

Faculty members who prefer to work in more work spheres and faculty members who prefer to work in fewer work spheres both tend to work more hours per week. A positive relationship was found between time disconnection (i.e., the total percent difference between faculty members' actual time allocations and preferred time allocations for the seven work spheres) and faculty drive.

In terms of teaching load, four of the six items in this study were positively related to total hours worked per week. Faculty members who serve on a greater number of undergraduate committees and faculty members who serve on a greater number of graduate committees tend to work more hours per week. In addition, faculty members who provide individualized instruction to graduate students and faculty members who provide individualized instruction to first professional students tend to work more hours per week. All ten research load items are positively related to total hours worked per



week. The highest correlations exist between total hours worked per week and the value of grant dollars obtained, number of grants obtained, number of sole-authored presentations completed, and number of joint-authored articles published in refereed publications. All three service load items are positively related to total hours worked per week.

All but one of the satisfaction items are negatively related to total hours worked per week. Faculty members' satisfaction with their time available to advise students, with their time available for class preparation, with their workload, with their time to keep current in their field, with the effectiveness of faculty leadership, and with their job overall are all negatively related to total hours worked per week.

Finally, negative correlations exist between the following sociodemographic items and total hours worked per week: being female, being a minority, having dependents, having a doctoral degree, being an associate professor, having an appointment not on the tenure-track, and working in the humanities discipline. Positive correlations exist between the following sociodemographic items and total hours worked: family income, being a professor, and working in the engineering or health sciences disciplines.

Bivariate correlations were also conducted to identify multicollinearity issues between the 62 items measuring the independent variables. A summary of the correlations between the items measuring the independent variables, where the correlation coefficient is greater than 0.5 but less than or equal to 0.75, is presented next. Items with correlation coefficients greater than 0.75 were further analyzed and one item of the item pair was removed from this study. The exception is found with being a

tenured faculty member and being an assistant professor. Based on findings from further examination, both of these items were kept in this study. Statistical affects from these two items in the stepwise multiple regression analyses were closely examined.

There were no relationships that exceeded a correlation of 0.5 between the time allocation measures and the other items measuring the independent variables in the study. A positive relationship was found between time disconnection and the number of additional spheres in which faculty members would prefer to work.

Items related to teaching load and service load did not yield high correlations with other items measuring the independent variables. With respect to research load, there was a positive relationship between the value of grant dollars obtained and the number of grants obtained.

With respect to satisfaction, there was a positive relationship between time available to advise students and time available for class preparation, and between time available for class preparation and workload. Satisfaction with workload was also positively related to time to keep current in the field and overall job satisfaction. Satisfaction with the effectiveness of faculty leadership was positively correlated with overall job satisfaction. Finally, satisfaction with time available to advise students was negatively correlated with being an assistant professor.

Several interesting relationships were found between the sociodemographic items. The number of years since one's highest degree was obtained was positively correlated with being a professor, holding a tenured appointment, and the number of years employed in one's higher education job. The number of years since one's highest degree was obtained was negatively correlated with being an assistant professor and having a

tenure-track appointment. Being a professor was negatively related to being an associate professor and being an assistant professor.

Being a professor was positively related to the number of years employed in one's higher education job and with having a tenured appointment. Faculty members who have worked in higher education for many years are more likely to be professors, hold tenure appointments, and be employed longer in one's higher education job. Being an assistant professor was negatively correlated with the number of years employed in one's higher education job, and was positively correlated with having a tenure-track appointment. The number of years employed in one's higher education job was positively correlated with having a tenured appointment. A negative correlation was found between having a tenured appointment and having an appointment that was not on the tenure-track.

Items measuring the independent variables that had high correlations (greater than 0.75) among them were analyzed and several variables were removed from this study due to violations of multicollinearity. The decision regarding which item within each pair of highly correlated items to remove was based on an analysis of the statistical variability (standard deviation) of the items and a determination of which item was more conceptually relevant to this study. All remaining pairs of items measuring the independent variables in this study have correlations that were less than 0.75.

The one exception relates to the following two items: tenured appointment and associate professor. These items are highly correlated but both items were kept in this study because the tenured appointment item was included in the correlation analysis as a dummy-coded item (either faculty members hold a tenured appointment or they do not), but in the stepwise multiple regression model, this item was treated as the referent group

for the tenure status items. This categorical item was only included in the correlation analysis to understand better the relationship between a faculty member having a tenured appointment and all the other items and measures in this study. As such, the high correlation between being a tenured faculty member and being an associate professor was deemed insignificant and both items were kept in this study.

### **Stepwise “block” multiple regression analysis.**

This study was designed to identify variables that affect faculty drive in terms of the number of hours faculty work per week. In order to create the stepwise multiple regression model, numerous stepwise multiple regressions were conducted to understand better the relationship between total hours worked per week and time allocation, time disconnection, teaching load, research load, service load, satisfaction, and sociodemographic characteristics. The purpose of conducting these stepwise multiple regressions was twofold: to determine which groups of items and measures (blocks) significantly added explanatory value to the model after other items and measures were included in the stepwise multiple regression model, and to identify individual items and measures within the blocks that were most significant at each stage of the stepwise multiple regression analysis.

This analysis was conducted because there is no existing research to suggest which items and measures, conceptually or from the NSOPF:99 survey, accurately capture the concepts of time allocation, time disconnection, teaching load, research load, service load, satisfaction, and sociodemographic characteristics. The block entries allowed for a better understanding of the associations between the items measuring the

independent variables and faculty drive and among each other.

The items and measures were entered into the stepwise multiple regression model in blocks, based on the conceptual framework used in this study. The blocks of items and measures were entered in the following order: sociodemographic characteristics, teaching load, research load, service load, time allocation, time disconnection, and satisfaction. A summary of the relative contributions of each block to the stepwise multiple regression model are presented in Table 5.

There are 24 models in the stepwise multiple regression analysis (with the 24<sup>th</sup> model being the final stepwise multiple regression model presented in the next section). While the blocks of items and measures were stepped into the stepwise multiple regression model as outlined above, the stepwise multiple regression model entered the items and measures in an order based on statistical measures and determinations. A discussion of these 24 models and the variance accounted for by each model is discussed next.

The items entered in Model 1 include all the sociodemographic variables. Model 1 accounted for 4.5 percent of the final stepwise multiple regression model's variance. Next, the teaching load block of items were stepped into the model, with the most significant predictors of total hours worked being added one at a time to the stepwise multiple regression model. The number of graduate committees served (Model 2), the number of undergraduate committees served (Model 3), and the number of graduate students that were taught individually (Model 4) increased the variance accounted for in terms of predicting faculty drive (as measured by total hours worked). The remaining teaching load items that were stepped into the model as part of the teaching load block

Table 5

*Stepwise "Block" Multiple Regression Analysis: R<sup>2</sup> and Change R<sup>2</sup> Values by Model (N=3,584)*

Model	R Square	R Square Change
1 (Constant), other disciplines, dependents, number of years employed in one's higher education job, fine arts, associate professor, family income, engineering, agriculture & home economics, education, business, minority, highest degree, social sciences, female, not on tenure-track, family status, health sciences, on tenure-track, natural sciences, number of years since highest degree obtained, assistant professor	.045***	
2 entered number of graduate committees served on	.052***	.007***
3 entered number of undergraduate committees served on	.057***	.005***
4 entered number of graduate students taught individually	.061***	.003***
5 entered number of classes taught, number of undergraduate students taught individually, number of first professional students taught individually	.062***	.001
6 entered grant dollars obtained	.077***	.015***
7 entered number of sole-authored articles refereed	.086***	.009***
8 entered number of sole-authored presentations	.090***	.004***
9 entered number of grants obtained	.092***	.002**
10 entered number of joint-authored books/reports, number of joint-authored articles nonrefereed, number of sole-authored books/reports, number of joint-authored presentations, number of sole-authored articles nonrefereed, number of joint-authored articles refereed	.094***	.002
11 entered number of governance committees served	.102***	.007***
12 entered number of other administrative committees served	.106***	.005***
13 entered number of personnel committees served	.108***	.001*
14 entered number of faculty work spheres	.118***	.010***

Table 5

*Stepwise “Block” Multiple Regression Analysis: R<sup>2</sup> and Change R<sup>2</sup> Values by Model (N=3,584) (continued)*

Model	R Square	R Square Change
15 entered percent time allocated to service	.122***	.005***
16 entered percent time allocated to undergraduate teaching	.126***	.003***
17 entered percent time allocated to other academic activities	.128***	.002**
18 entered percent time allocated to administration	.129***	.001*
19 entered percent time allocated to professional development, time concentration (allocated 75 percent or more time to a work sphere), percent time allocated to research	.130***	.001
20 entered time disconnection (total percent difference between actual time allocations and preferred time allocations for seven work spheres)	.131***	.001*
21 entered preference for more work spheres, preference for fewer work spheres	.132***	.000
22 entered satisfaction with workload	.149***	.017***
23 entered satisfaction with time available for class preparation	.150***	.001*
24 entered satisfaction with effectiveness of faculty leadership, satisfaction with freedom to do consulting, satisfaction with time to keep current in field, satisfaction with job overall, satisfaction with time available to advise students	.152***	.001

\*p < .05; \*\*p < .01; \*\*\*p < .001

did not significantly increase the explanatory value of the model.

The third block of variables stepped into the stepwise multiple regression model was the research load items. Of these items, the value of grant dollars obtained (Model 6), the number of sole-authored articles published in refereed journals in the past two years (Model 7), the number of sole-authored conference presentations made in the past two years (Model 8), and the number of grants obtained (Model 9) all added significant explanatory value to the model. The other research load items that were stepped into the model as part of the research load block did not significantly increase the explanatory value of the model.

The fourth block of items stepped into the stepwise multiple regression model was the service load items. The number of governance committees served (Model 11), the number of other administrative committees served (Model 12), and the number of personnel committees served (Model 13) increased the explanatory value of the model.

The fifth block of measures stepped into the stepwise multiple regression model was the time allocation measures. The number of spheres in which faculty worked (Model 14), the percentage of time allocated to service (Model 15), the percentage of time allocated to undergraduate teaching (Model 16), the percentage of time allocated to other academic activities (Model 17), and the percentage of time allocated to administration (models 18) each increased the variance accounted for when added to the model.

The sixth block of measures stepped into the stepwise multiple regression model was the time disconnection measures. The time disconnection item (model 20), which focuses on the total percentage difference between actual time allocations and preferred



time allocations for seven work spheres, increased the variance accounted for by the model slightly. The other time disconnection measures (preference for more work spheres and preference for fewer work spheres) did not add significant explanatory value to the model.

The final block of items stepped into the stepwise multiple regression model was the satisfaction items. Faculty satisfaction with workload (Model 22) and faculty satisfaction with time available for class preparation (Model 23) added significant explanatory value to the model. The other satisfaction variables did not add significant explanatory value when added to the model.

Findings from this stepwise multiple regression analyses suggests that a more complete illustration of academic life, that includes time allocation measures, time disconnection measures, teaching load items, research load items, service load items, and satisfaction items, in addition to sociodemographic items, increases the explanatory value of the regression model. The following items and measures added explanatory power to the stepwise multiple regression model: number of graduate committees on which served, number of undergraduate committees on which served, number of graduate students that were provided individualized instruction, the value of grant dollars obtained, sole-authored articles published in refereed journals, sole-authored conference presentations made, number of grants obtained, number of governance committees on which served, number of other administrative committees on which served, number of personnel committees on which served, number of spheres in which faculty members worked, percentage of time allocated to service, percentage of time allocated to undergraduate teaching, percentage of time allocated to other academic activities, percentage of time

allocated to administration, satisfaction with workload, and satisfaction with time available for class preparation. Not all of these items and measures, however, were significantly related to faculty drive in terms of hours worked once all of the items and measures were included in the final stepwise multiple regression model (model 24). A detailed review of Model 24, the final stepwise multiple regression model with all of the items and measures included, is presented next.

### **Stepwise multiple regression analysis.**

The final stepwise multiple regression model (model 24) includes all the items and measures in this study entered into the model together. Table 6 presents the overall stepwise multiple regression results (in standardized coefficients) of the 24<sup>th</sup> block of the stepwise multiple regression model. The stepwise multiple regression results suggest that a comprehensive model that includes many aspects of academic life better explains faculty drive in terms of hours worked than models that only include sociodemographic aspects of academic life. Results from the stepwise multiple regression analysis are discussed next.

The stepwise multiple regression model tested the association between time allocation and the total number of hours worked per week. Working in more academic work spheres had a positive association with the total number of hours worked per week.

The percentage of time spent on service, the percentage of time spent on other academic activities, the percentage of time spent on administration activities, and percentage of time spent on research activities all have significant positive associations with the number of hours faculty work when compared to the referent group (percentage

Table 6

*Standardized Stepwise Multiple Regression Coefficients for Total Hours Worked by Independent Variables (N=3,584)*

Independent Variables	Total Hours Worked
<b>Time Allocation</b>	
Number of Faculty Work Spheres	.066**
Percent Time on Graduate Teaching (referent group)	
Percent Time on Service	.096***
Percent Time on Undergraduate Teaching	-.024
Percent Time on Other Academic Activities	.066***
Percent Time on Administration	.051*
Percent Time on Research	.062*
Percent Time on Professional Development	.027
Time Concentration (75 Percent or More Time in Any Academic Work Sphere)	.005
<b>Time Disconnection</b>	
Time Disconnection (Total Percent Difference Between Actual Time Allocations and Preferred Time Allocations for Seven Work Spheres)	-.006
Preference for More Work Spheres	.011
Preference for Fewer Work Spheres	.006
<b>Teaching Load</b>	
Number of Graduate Committees Served	.023
Number of Undergraduate Committees Served	.052**
Number of Graduate Students Taught Individually	.026
Number of Classes Taught	.011
Number of Undergraduate Students Taught Individually	.025
Number of First Professional Students Taught Individually	.021

Table 6

*Standardized Stepwise Multiple Regression Coefficients for Total Hours Worked by Independent Variables (N=3,584) (continued)*

Independent Variables	Total Hours Worked
<b>Research Load</b>	
Grant Dollars Obtained	.058*
Number of Sole-Authored Refereed Articles Published	.067***
Number of Sole-Authored Presentations	.048*
Number of Grants Obtained	.047
Number of Sole-Authored Nonrefereed Articles Published	.016
Number of Sole-Authored Books/Reports Published	.023
Number of Joint-Authored Refereed Articles Published	.032
Number of Joint-Authored Nonrefereed Articles Published	-.015
Number of Joint-Authored Books/Reports Published	-.003
Number of Joint-Authored Presentations	-.002
<b>Service Load</b>	
Number of Governance Committees Served	.066***
Number of Other Administrative Committees Served	.049**
Number of Personnel Committees Served	.032*
<b>Satisfaction</b>	
Satisfaction with Work Load	-.117***
Satisfaction with Time Available for Class Preparation	-.050*
Satisfaction with Time Available to Advise Students	.015
Satisfaction with Time to Keep Current in Field	-.030
Satisfaction with Effectiveness of Faculty Leadership	-.015
Satisfaction with Freedom to do Consulting	.031
Satisfaction with Job Overall	.006

Table 6

*Standardized Stepwise Multiple Regression Coefficients for Total Hours Worked by Independent Variables (N=3,584) (continued)*

Independent Variables	Total Hours Worked
Sociodemographic Characteristics	
Male (referent group)	
Female	-.034
Majority (referent group)	
Minority	-.062***
Married/Partnered Relationship (referent group)	
Single	.040*
No Dependents (referent group)	
Dependents	-.047**
Family Income	.026
No Doctoral Degree (referent group)	
Doctoral Degree	-.052*
Number of Years Since Highest Degree Obtained	.017
Professor (referent group)	
Associate Professor	-.084***
Assistant Professor	-.026
Number of Years Employed in One's Higher Education Job	-.046
Tenured Appointment (referent group)	
Tenure-Track Appointment	.037
Not on Tenure-Track Appointment	-.052*
Humanities (referent group)	
Agriculture & Home Economics	-.002
Business	.046*
Education	-.007
Engineering	.055**
Fine arts	.021

Table 6

*Standardized Stepwise Multiple Regression Coefficients for Total Hours Worked by Independent Variables (N=3,584) (continued)*

Independent Variables	Total Hours Worked
Sociodemographic Characteristics (continued)	
Health sciences	.020
Natural sciences	.040
Social sciences	.024
Other programs	.023
R <sup>2</sup>	.152***
Adjusted R <sup>2</sup>	.138

Level of significance: \*p < .05; \*\*p < .01; \*\*\*p < .001

of time faculty members spent on graduate teaching). There were no positive associations between the time disconnection measures and faculty drive.

The stepwise multiple regression also included workload items relating to teaching and research. The only teaching load item that had a significant positive association with total hours worked was the number of undergraduate committees on which faculty members served. Three research load items had positive associations with faculty drive in terms of hours worked: the value of grant dollars obtained; the number of sole-authored articles published in refereed journals in the past two years; and, the number of sole-authored presentations at academic conferences in the past two years. All three service load variables had positive associations with faculty drive in terms of hours worked.

Satisfaction with workload and satisfaction with time available for class preparation had negative associations with the number of hours faculty members work per week. The more satisfied faculty members are with these two aspects of their academic life, the fewer hours they are likely to work per week.

Finally, among the sociodemographic items, being a minority faculty member was negatively associated with faculty drive. Minority faculty members work fewer hours than the referent group of majority faculty members. Having dependents was also negatively associated with faculty drive. Faculty members with dependents work fewer hours than faculty members without dependents. Faculty rank also had a negative association with the total number of hours faculty members work, with associate professors working fewer hours than the referent group of professors. Faculty members not on tenure-track appointments work fewer hours than the referent group of faculty

members on tenured appointments. Compared to faculty members in the humanities, the referent group, faculty members in business and engineering are likely to work more hours per week.

Overall, the stepwise multiple regression model accounts for 15.2 percent of the variance in determining faculty drive as measured by the total number of hours faculty members work per week.

### **Research Question and Results**

This study is based on the research question: “To what extent are time allocation and time disconnection associated with faculty drive in terms of the hours faculty members work?” Statistical analyses indicated that time allocation measures are positively associated with faculty drive. Faculty members who work in more work spheres, allocate a greater percentage of time to service, allocate a greater percentage of time to administration, allocate a greater percentage of time to other academic activities, or allocate a greater percentage of time to research are more likely to work longer hours. In the multivariate model, there were no significant relationships found between faculty time disconnection measures and faculty drive.



## CHAPTER 5

### Discussion and Conclusion

The context and culture of higher education are changing in new and significant ways (Gappa et al., 2007; Schuster & Finkelstein, 2006). The academy is grappling with changes that include demographic diversity, budget restrictions, enrollment increases, aging faculty cohorts, market demands, accountability and quality assurance pressures, technological changes, teaching and learning innovations, new faculty appointment types, loss of faculty autonomy, entrepreneurial activities, collaborative and interdisciplinary work challenges, ongoing professional development needs, and, most importantly to this study, expanding workloads (Gappa et al., 2007; Schuster & Finkelstein, 2006).

According to Schuster and Finkelstein (2006), these changes are “inextricably and profoundly linked with the volatile present circumstance and uncertain outlook for the academy’s core resource: the faculty” (p. 3). Gappa et al. (2007) contend that, with all the changes facing higher education, academic faculty members face a worklife where “there does not seem to be any limit to or boundary on the amount of work for faculty to do” (p. 18).

Little research has been conducted on how these increases in workload affect faculty members’ drive to excel in an ever-growing list of academic roles and tasks. The purpose of this study is to provide insight into the relationship between faculty members’ drive (as measured by the number of hours worked), time allocated to different spheres of academic work (time allocation), and actual versus preferred time allocations of faculty members for all work spheres (time disconnection). This study also examines how faculty

workload, satisfaction, and demographic characteristics affect faculty drive. The stepwise multiple regression analysis revealed that faculty members are more likely to work longer hours if they are working in more work spheres. Said another way, faculty members who work in four work spheres are likely to work more hours than faculty members who work in two work spheres. This finding confirms that an expanding scope of work likely affects faculty drive (as measured by the number of hours faculty members work).

## **Discussion**

Colbeck (1998) captures the intensity of faculty work in her finding that faculty members believe “that they...[have] more work to do than they could reasonably accomplish” (p. 663). To manage unreasonable workload demands, some faculty members focus on one task to the detriment of others, while other faculty members learn to integrate tasks to accomplish more work in less time (Colbeck, 1998). Time pressures are also contributing to faculty stress and increased intentions to leave (Barnes et al., 1998; Fisher, 1994; Gmelch et al., 1986; Olsen, 1993; Zhou & Volkwein, 2004). Time pressures are negatively affecting the newest cohort of academics (although all academics are challenged by longer hours and increased workload). Rice, Sorcinelli, and Austin (2000) found, in a qualitative study of 350 early-career faculty members and graduate students, that time pressures and challenges to find a work-life balance are common themes among junior faculty. Tierney and Bensimon (1996) found that many junior faculty learn that working long hours is the only way to accomplish an extensive list of teaching, research, and service tasks. One faculty member in their study summarized this time struggle: “I feel like I am asked to do everything at once and all the time” (Tierney

& Bensimon, 1996, p. 61). If the academy equates being overworked with being a good academic, research must be conducted to understand what variables are driving faculty members to work longer hours.

Research on faculty time is limited and only generally discusses the number of hours faculty work. Schuster and Finkelstein (2006) found that faculty members are working longer hours now than in the past: university faculty members worked 43.7 hours per week in 1972 and 50.6 hours per week in 1998. Bowen and Schuster (1986) suggest that faculty members in the sciences, engineering, and social sciences worked 48.2 hours per week in 1978-79. Using data from the 1998 National Study of Postsecondary Faculty (NSOPF:99), Jacobs (2004) found that faculty members work more than fifty hours per work and noted that “a fifty hour [academic] work week is normative....[and] a sixty hour work week is also common” (p. 7). The overall picture, then, is that faculty members are working longer hours now, as compared to thirty years ago, and that faculty members are currently working more than fifty hours per week.

Research also examines how sociodemographic variables are related to faculty drive in terms of the number of hours faculty members work. Differences in faculty work hours occur when institutional type (Schuster & Finkelstein, 2006), discipline (Schuster & Finkelstein, 2006), appointment type (Bland et al., 2006), experience and rank (Cox, 1991), and gender, ethnicity, and family status (Bellas & Toutkoushian, 1999) are considered. Research also examines what variables are related to how faculty members allocate their time (time allocation). Differences in faculty time allocation occur when institutional type (Milem et al., 2000; Singell, Lillydahl, & Singell, 1996), appointment type (Antony & Raveling, 1998; Bland et al., 2006), and part-time status (Chen, 2002)

are considered.

The present study investigates how faculty time allocation and faculty time disconnection (the difference between actual time allocations and preferred time allocations in seven work spheres) affect faculty members' drive to work long hours. The conceptual framework used in this study suggests a relationship between seven independent variables and the number of hours faculty work. The seven independent variables in the conceptual model are time allocation, time disconnection, teaching load, research load, service load, satisfaction, and sociodemographic characteristics. The conceptual framework guides the research analyses used to answer this study's research question: "To what extent are time allocation and time disconnection associated with faculty drive in terms of the hours faculty members work?" This study uses data from the 1999 National Study of Postsecondary Faculty (NSOPF:99) dataset of faculty members in research and doctoral institutions to answer the research question.

This study finds that the more spheres in which faculty members work, the more likely they are to work long hours. Faculty members who allocate more time to particular work spheres (service, other academic activities, administration, and research) are also more likely to work longer hours, as compared to time allocated to graduate teaching. These findings reinforce the concern that full-time faculty members are having to take on more academic governance and institutional service responsibilities to compensate for the growing number of part-time and contingent faculty members in the academy (Schuster & Finkelstein, 2006).

There were no significant associations between faculty time disconnection and the number of hours faculty work. The three faculty time disconnection measures used in this

study were not significant predictors of the number of hours faculty members work in the stepwise multiple regression model. These findings suggest that how faculty members allocate time, not whether they prefer the work or not, affects the number of hours faculty members work per week.

Allocating time to undergraduate teaching is not significantly related to the number of hours faculty work. Time allocated to teaching appears to form a baseline for the number of hours faculty work: the number of hours faculty members work increases when faculty undertake work in other academic work spheres. This study finds that the number of undergraduate committees on which faculty members serve is a significant predictor of the number of hours worked per week in the stepwise multiple regression model. Faculty members who are helping many undergraduate students may need to reevaluate how they are distributing their time, especially if they are feeling rushed and anxious about their academic work load and the hours required to accomplish all of their academic tasks.

This study also finds a positive relationship between all ten research load items and faculty drive. Moreover, this study finds that the number of sole-authored articles published in peer refereed journals, the number of sole-authored presentations made, and the value of grant dollars obtained are significant predictors of the number of hours faculty work in the stepwise multiple regression model. Taken together, these results suggest that faculty members who are research productive in terms of grants, articles, and presentations are likely to work long hours.

All three service load items have significant positive associations with the total number of hours worked per week. Faculty members who serve on governance

committees, faculty members who serve on other administrative committees, and faculty members who serve on personnel committees are all more likely to work more hours. Service to governance committees, personnel committees, and other administrative committees are also significant predictors of hours worked in the stepwise multiple regression model.

This study also found that dissatisfied faculty members work significantly more hours per week than satisfied faculty members. Faculty members' satisfaction with their time available to advise students, with their time available for class preparation, with their workload, with their time to keep current in their field, with the effectiveness of faculty leadership, and with their job overall are all negatively related to total hours worked per week. Faculty members who are very dissatisfied with their time to advise students, time for class preparation, time to keep current in the field, their job overall, and their workload work upwards of 60 hours per week. For all satisfaction variables, with the exception of freedom to do consulting, very satisfied faculty members report working the fewest number of hours per week.

This study also finds that satisfaction with workload and satisfaction with time available for class preparation are significant predictors of faculty drive in the stepwise multiple regression model and are negatively related to the number of hours faculty members work. Faculty members who are more dissatisfied with their workload and with their time available for class preparation are more likely to work long hours than faculty members who are satisfied with these two aspects of academic work.

Finally, sociodemographic items also influence the number of hours faculty members work per week. Being a minority faculty member is negatively associated with

the total number of hours faculty members work per week, with minority faculty members working fewer hours per week than majority faculty members. Being single is positively associated with faculty drive. Single faculty members are more likely to work longer hours than faculty members who are married or in partnered relationships. Having dependents and having a doctoral degree are negatively associated with the number of hours faculty members work and are significant predictors of faculty drive in the stepwise multiple regression model. Faculty members who have dependents are more likely to work fewer hours than faculty members with no dependents, and faculty members who have a doctoral degree are more likely to work fewer hours than faculty members without a doctoral degree.

Being an associate professor and holding a faculty appointment that is not on the tenure-track are negatively associated with faculty drive: associate professors work fewer hours than professors and faculty members who have appointments that are not on the tenure-track work fewer hours than tenured faculty members. Academic discipline also has a significant effect on the total number of hours faculty members work. Faculty members in business and engineering are more likely to work longer hours than faculty members in the humanities. These sociodemographic findings reinforce earlier research that suggests that discipline, appointment type, race, and rank affect the number of hours faculty members work.

Overall, the stepwise multiple regression model accounts for 15.2 percent of the variance in determining the total number of hours faculty members work per week. These findings suggest that time allocation, teaching load, research load, service load,

satisfaction, and sociodemographic characteristics affect faculty drive. These findings also suggest that time disconnection does not affect faculty drive.

### **Implications for Theory**

The conceptual model is premised on a comprehensive view of academic work and includes time allocation, time disconnection, teaching load, research load, service load, satisfaction, and sociodemographic variables. This model proves to be useful in explaining 15.2 percent of the variance in faculty drive in terms of the hours faculty members work. More importantly, items and measures associated with each of the independent variables are found to be significantly related to the number of hours faculty members work, with the notable exception of time disconnection. These findings suggest that using a comprehensive conceptual model produces meaningful findings about the ways in which faculty members work and their drive to work long hours.

Prior research on the topics of time allocation and hours worked use conceptual theories that focus on specific aspects of academic life and include only a limited number of variables. Jacobs and Winslow's (2004) focus is on gender and marital issues, and their conceptual theory focuses on women, equity, and families. Milem, Berger, and Dey's (2000) focus is the institution and their conceptual model focuses on institutional isomorphism. Bellas and Toutkoushian's (1999) focus is on gender, race, and family effects, and their conceptual model focuses on human capital and structural barriers.

This study is based on findings, and lack thereof, of the body of research on faculty drive in terms of the hours faculty members work. The literature does not provide a theoretical rationale for examining faculty time or faculty hours, nor does the literature



include explanations for why items and measures relating to time allocation, time disconnection, teaching, research, service, satisfaction, or sociodemographic characteristics should or should not be included in this study's model. This lack of a theoretical rationale for studying faculty time or faculty hours suggests a need for a new conceptual model of faculty work as it relates to faculty drive.

This study's conceptual framework was guided by the comprehensive frameworks used by Blackburn and Lawrence (1995), Bland et al. (2006), and Braskamp and Ory (1994). All of these scholars have published books on varying aspects of academic work and all use comprehensive theoretical frameworks to guide their research. Blackburn and Lawrence (1995) utilize a theoretical framework in which "characteristics of individuals and their employing institution combine and lead to variations in faculty motivation, behaviour, and productivity" (p. 15). Their theoretical framework is comprehensive but provides a lack of transferability to this study on faculty drive.

Bland et al. (2005) use a comprehensive conceptual framework in their work on faculty productivity and faculty vitality. Bland et al. (2005) use a framework that suggests that "there is a defined set of research-facilitating characteristics which, when carefully attended to by any number of diverse strategies, can yield high levels of productivity that are sustainable over time" (p. 2). Their conceptual model includes individual, environmental, and leadership variables that affect faculty productivity. This model reinforces the need for a comprehensive picture of faculty work and helps identify how time issues affect faculty productivity. This model is not, however, directly transferable to this study on faculty drive.

Finally, Braskamp and Ory (1994) assert that "faculty assessment has three

interlocking elements: setting expectations, collecting evidence, and using evidence” (p. 26). Braskamp and Ory (1994) also contend that the “cycle of assessment is never-ending, with faculty always engaged in making sense of their own work and telling others about it, continually changing and improving with the help of self-reflection, and dialogue, discourse, and discussion” (p. 26). The elements of this framework capture the full cycle of assessment and the interlocking design captures the ongoing and evolving nature of assessment. This model underscores the need for a comprehensive framework in research on faculty work. This model is not, however, directly transferable to this study on faculty drive.

This study’s conceptual framework is also influenced by the literature on managers and professionals. Over forty years ago, Henry Mintzberg (1971) lamented that “the actual content of managerial work [is not] systematically and meaningfully described” (p. B-98). He then provided a conceptual model that described managerial roles and characteristic. Mintzberg’s (1971) model reinforces the need for a comprehensive model to describe faculty workloads, time allocations, and faculty drive.

Research has also shown that individual, organizational, and societal issues have contributed to the problems of heavy workloads and long work hours. Schor (1992) uses the theory of time squeeze to explain the shift to longer work hours and the challenges in balancing work and non-work demands. Stier and Lewin-Epstein (2003) use a supply and demand conceptual framework to explain the number of hours employees work: “from a supply-side point of view, working hours are seen as reflecting workers’ preferences” (pp. 303-304); and, from a demand-side point of view, working hours are determined by “the organization of work by employers” (p. 304). While none of these comprehensive

models are directly applicable to this study, together they provide insights into how the relationship between faculty time allocation, faculty time disconnections, and faculty drive can be conceptualized. Moreover, these models reinforce the importance of using a comprehensive conceptual model when researching questions about academic work and academic life.

Similar to Mintzberg's (1971) observation about managerial work, there is a lack of insight into the phenomenon of faculty work. The comprehensive framework used in this study was designed by examining and using higher education and management literature on faculty work hours and time allocation. The framework was designed to capture a broad reflection of academic worklife, faculty work tasks, and faculty drive. Future research on academic work could expand upon this framework to understand better the issues of faculty time allocation, faculty time disconnection, and faculty drive. New research on faculty work and faculty time could also introduce theories from different disciplines to broaden the understanding of academic work and academic life. This broader framework could then be applied to issues affecting faculty drive.

### **Implications for Policy**

The nature of higher education and academic work is changing in many different ways. Schuster and Finkelstein (2006) contend that these "seismic shifts [of change] are profoundly changing how knowledge is acquired and transmitted...[and] all this is unfolding at an unprecedented pace" (p. xvii). The academy is struggling with budget restrictions and accountability pressures (Gappa et al., 2007) and faculty members are struggling with more diverse student and faculty cohorts, innovations in teaching and

learning, technological advances, family demands, and increased workloads (Gappa et al., 2007; Schuster & Finkelstein, 2006). Academic departments are also struggling with generational challenges: “for the first time in recent memory, four generations have converged” (Fogg, 2008, para. 3). Cultural differences between the generations affect “recruiting efforts, tenure evaluations, and the changing definition of what constitutes important faculty work” (Fogg, 2008, para. 4). These complex changes are affecting the number of hours faculty members work to accomplish a heavier workload and a longer list of academic tasks and responsibilities.

The traditional academic work model of teaching, research, and service is being replaced with a general agreement that faculty members have to work harder at a growing list of academic tasks (Rhoades, 2009). Rhoades (2009) states that “at research universities....[p]romotion and tenure candidates must demonstrate ever-higher levels of publication ‘productivity’ and grant revenue, and their work is expected to have ever-greater national (and international) impact” (para. 4). Heavier workloads are affecting the amount of time faculty members have to allocate to teaching: “the increased demands of workloads outside of the classroom...result in teachers having less time for preparation, teaching and interaction with students” (King, 2002, para. 7).

Colbeck (1998) found that “all faculty [in her study]...felt that they had more work to do than they could reasonably accomplish” (p. 663). Findings from the 2007 Collaborative on Academic Careers in Higher Education (COACHE) survey suggest that early-career faculty members

“believe that expectations placed upon them as a scholar are the least reasonable....[and that there is a] lack of resources, time, and support to be an

excellent scholar **and** an outstanding teacher **and** a stellar colleague and campus citizen, all at once” (Collaborative on Academic Careers in Higher Education, 2007, para. 6, emphasis in original).

The Accreditation Council for Graduate Medical Education (ACGME) attempted to address the negative affects of working long hours on medical school residents by mandating that they not be allowed to work more than 80 hours per week (Philibert, Friedmann, & Williams, 2002). Wong and colleagues (2004) note that, prior to the mandate, the medical school acculturated and trained residents by making them “take up ‘residence’ in the hospital during...[the residency] period of their training” (p. 519). The mandate was implemented, in part, because of research that associated long work hours with sleep deprivation and sleep deprivation with increases in accidents, decreased safety, increased stress, decreased educational performance (Fletcher et al., 2005). According to Chung, Ahmed, and Chen (2004), the cap on the number of hours is premised on the idea “that reducing physical fatigue and eliminating noneducative tasks may lead to better learning efficiency, fewer errors, and more fulfilling residents” (p. 609).

This mandate forced medical schools to change their approaches to resident education, which disgruntled senior residents and medical school faculty members (Chung et al., 2004; Winslow, Berger, & Klingensmith, 2004). While short-term and long-term implications of this 80-hour work week mandate are difficult to ascertain, dialogue surrounding the mandate corresponds to issues discussed in this study (the relationship between faculty drive in terms of hours worked, time allocation and time disconnection). As the number of hours faculty members work continues to increase, the academy must decide if there is an upper limit to the number of hours faculty members

should be working.

Higher education is unlikely to implement a mandate on the number of hours faculty members work per week, but other workload and time policies may be considered if faculty workloads continue to grow and faculty members become disgruntled. This growth scenario is realistic considering the numerous and unprecedented changes already affecting higher education and the lack of a cohesive response to these changes. Change has been occurring all over the institution and each change has the potential to effect how long and hard faculty members work. The academy has already begun to adopt new policies that affect faculty work, including new family-friendly policies (Sorcinelli, 2000), new customer service standards (Raisman, 2002), new accountability models (Burke & Associates, 2004), new teaching pedagogies (Higher Education Research Institute, n.d.), new forms of interdisciplinary scholarship (Gonzalez, Niemeier, & Navrotsky, 2003), and new faculty appointment types (Bland et al., 2006). How these changes affect faculty workload and faculty drive must be considered, because, as this study suggests, how faculty members allocate their time is positively related to faculty drive in terms of the number of hours faculty members work and faculty members are already dissatisfied and stressed by the time required to complete their work.

### **Implications for Practice**

Many graduate students are disillusioned with the life of an academic. Austin (2002) found that doctoral students quickly learn that academic work involves time struggles to balance work and non-work demands and endless pressures to excel in a myriad of time consuming tasks. A survey at the University of California found that at

the beginning of their PhD programs at research and doctoral institutions, 39 percent of female graduate students wanted to become professors with a research emphasis (Mason et al., 2009). At the end of their programs, only 27 percent of female graduate students believed that becoming a professor is a viable track for them (Mason et al., 2009).

Mason, Goulden, and Frasch (2009) found that many graduate students do not want to emulate their advisors' working lives; many instead choose career paths that allow for work-life balance and provide family-friendly environments.

This frustration with academic life extends to junior faculty members as well. Sorcinelli and Billings (1993) found that pretenure faculty members are frustrated with the lack of time to focus on both work and family demands. Junior faculty members also perceive their work as endless and faculty members are finding it difficult to balance work and non-work demands (Menges, 1999; Rice et al., 2000). These challenges of faculty life are compelling many new faculty to leave academia (Fogg, 2003).

The belief that academic work consists of teaching, research, and service is overly simplistic and creates mistrust and confusion for graduate students and junior faculty members alike. The discourse needs to allow for an open discussion about how faculty members can, and often do, allocate time to the following seven different work spheres: undergraduate teaching, graduate teaching, research, service, administration, professional development, and other academic tasks. The discourse also needs to allow for an open discussion of the workload and time struggles faced by faculty members at all stages of their academic career.

Advisors should be able to discuss with their students and colleagues the array of tasks on which they work. Colleagues should be able to acknowledge the inherent

challenges of academic life and the specific challenges faced by new faculty members. Moreover, faculty members should also be able to discuss the challenges faced by a growing list of skills required for academic work in the twenty-first century. Faculty members must now “have command of a range of research abilities,....understand how teaching and learning processes occur,....know how to use technology in their teaching and....be effective in communicating to diverse audiences” (Austin & Wulff, 2004, p. 10). This open discourse will help increase the understanding of the relationships between tasks, time allocation, and faculty drive in terms of hours worked.

### **Limitations**

This study is based on secondary data analysis and is limited by the items available in the 1999 National Study of Postsecondary Faculty (NSOPF:99) dataset. The NSOPF:99 dataset was designed to capture national workload information for all instructional faculty members, and included many, but certainly not all, teaching-task variables. The NSOPF:99 dataset did not, however, include similar task variables related to research, service, administration, professional development, or other academic duties. As such, this study could not use tasks to define teaching load, research load, or service load. Instead, this study focuses on work outputs (e.g., classes taught, publications, committees served) as items and measures of the workload variables. A myriad of other task items and measures could have been included in the NSOPF:99 dataset which would have allowed for a more comprehensive investigation into the relationship between faculty members’ tasks, workloads, hours worked, time allocations, time disconnection, and faculty drive.



This study would have also been strengthened if the NSOPF:99 dataset had included more questions about the total number of hours faculty members would prefer to work for all seven work spheres and more questions that investigate how the role of technology is affecting faculty work in terms of teaching, research, and service and faculty hours overall. Colbeck's (1998) work identifies how academic work can be integrated and this study would have been strengthened if the NSOPF:99 study had included questions on faculty members' task integrations, and faculty members' perceptions on the need for, and usefulness of, task integration in academic work. Even if all these questions were included, this study would have assuredly missed items and measures that affect faculty drive.

This study provides insight into variables that predict faculty drive in terms of how many hours faculty members work per week and suggests a more comprehensive depiction of academic life, beyond the individual, family, and academic experience items explored in earlier studies. This depiction does not prove, however, that the variables in the conceptual model cause faculty members to work longer hours.

Another limitation of this study is that it is limited to full-time faculty members in research and doctoral institutions. Faculty members in research and doctoral institutions face tough challenges in terms of workload, hours worked, and the drive to excel as a research, scholar, and teacher. These findings cannot, and should not, be generalized to faculty members in other institutional types or appointment types.

Finally, this study uses cross-sectional data from 1999. As such, one should be cautious about applying the results too broadly. While this study uses a comprehensive model of variables to predict faculty drive in terms of the number of hours faculty

members work, these variables and the relationships among them may have changed in the years since the NSOPF:99 data were collected. As discussed above, the culture and context of higher education is experiencing unprecedented change. The length of time since 1999 suggests the need for future research to examine how the variables predicting faculty drive in terms of hours worked may have changed as a result of changes to the academy.

### **Future Research**

Higher education is facing numerous pressures for change and these changes are affecting how faculty members work. Research on faculty work, time allocation, and faculty drive in terms of hours worked is very limited. This study advances this limited body of research by providing and testing a conceptual model of academic work that includes demographic characteristics found in previous studies, as well as workload, satisfaction, time disconnection, and time allocation variables.

While this study provides evidence of a relationship between faculty drive and time allocation, further research is required to determine the relevance of this study's findings. This relevance could be determined if this study were replicated using data from the most recent 2004 National Study of Postsecondary Faculty (NSOPF:04) dataset. A direct replication of this study would determine if the associations found in this study still hold true for faculty members in the NSOPF:04 dataset. These findings could also be replicated for different institutional types to determine what academic work variables affect faculty drive for faculty members in different institutional types. These comparisons could then be used to help guide policy changes affecting faculty workload

in all institutional types.

Another gap in the literature is the lack of a comprehensive theoretical framework to guide studies on faculty time allocation, time disconnection, and faculty drive in terms of hours worked. This study uses a conceptual framework from higher education and management literature that creates a comprehensive picture of the nature of academic work. A similar lack of theory surrounded management work as identified by Henry Mintzberg (1971). This study's conceptual framework could influence future research on faculty work. As this framework is tested and refined, researchers could develop a broader understanding of academic work that could better explain faculty drive and the number of hours faculty work.

Even with using numerous items and measures in the analyses, this study's model only predicts 15.2 percent of the variance in faculty drive. This study is based on secondary data that constrain the number and type of items due to the questions used in the NSOPF:99 study. Researchers are encouraged to develop surveys that use this study's conceptual model and to include questions to address a broader concept of academic work. These studies could include questions about tasks involved in conducting teaching, research, and service, and expand work spheres to include new forms of administrative work, collaborative and interdisciplinary work, and task integration. Future studies could also focus on the relationship between motivation, expectations, satisfaction, and stress on faculty drive. In addition, these studies could focus on full-time and part-time faculty members and faculty members in different appointment types. The addition of these items and measures to this study might have increased the explanatory value of the stepwise multiple regression model.

This study also underscores the need for continued research on faculty drive. Changes in the academy are affecting faculty work, and faculty members are already being challenged to meet the needs of their current workload. If faculty members lose their drive to conduct academic work, then the academy will suffer. Unlike workload studies of the past, new research should be conducted with the purpose of highlighting to individuals, departments, schools, institutions, and the public that faculty work is complex and multi-faceted. Surveys could be designed to see how faculty workload changes after major changes occur inside or outside academia. Results of this new research could be used to confirm the central role faculty members play in the academy and to ensure that the concept of academic work is broadly understood.

Future research could also investigate how efficiently institutions operate based on the number of hours faculty members work. Institutions may find it very effective to create a system that influences faculty drive so that faculty members are willing to work more hours within a stable reward structure. The cost of restricting the number of hours faculty members work could be very high, as indicated in studies of the cost of the mandated 80-hour work week in medical schools (Thomas, 2009). Faculty members who are driven to pursue academic work without regard to the number of hours required could also be investigated. This investigation would be especially useful if examples of such faculty members were identified in each of the four cohorts currently existing in academia (Fogg, 2008).

Future research also needs to focus on the relationship between academic tasks, hours worked, and reward structures. This study finds that faculty members who allocate more time to service, administration, research, and other academic activities work longer

hours. These workload activities are required of faculty members, but they are not being rewarded. With research being highly rewarded in most institutions, and administrative and other work not being as highly rewarded, this study indicates a disturbing problem with how faculty members allocate their time and how they are rewarded. This problem could be a key factor for why faculty members are feeling frustrated: they are allocating time to academic tasks that are not as highly rewarded, which increases the pressure to be research productive in less available time. Further research on the relationship between rewards, faculty time allocation, and faculty drive is needed to guide faculty members on how best to allocate their time.

Further research could also be undertaken to understand better the issues of work-life balance and family-friendly work environments. Many graduate students believe that “the academic fast track has a bad reputation—one of unrelenting work hours that allow little or no room for a satisfying family life” (Mason et al., 2009, para. 1). Due to this poor reputation, many bright and promising young scholars are opting for jobs outside of academia that are more family-friendly and provide an environment where a balance between work and non-work demands can be achieved (Mason et al., 2009). Further research could help institutions recruit new faculty members with the information that their institution, or the academy as a whole, is as family-friendly as, or more family-friendly than, other work settings. New research could also look at the levels of stress, satisfaction, and turnover experienced by other prominent sectors. This research could then be compared to findings at academic institutions.

Finally, future research could investigate faculty drive in faculty members in non-traditional appointments. This study focuses on full-time faculty members in traditional

appointment types. The academy has been relying more on contingent labor and less on full-time faculty members in traditional appointment types (Gappa et al., 2007; Schuster & Finkelstein, 2006). Contingent faculty members, including full-time non-tenure-track faculty members, part-time faculty members, and graduate assistants, comprise nearly three-quarters of the total number of instructional staff across all institutions (American Federation of Teachers, 2009). Full-time tenured and tenure-track faculty members comprise just over one-quarter of these appointments (American Federation of Teachers, 2009).

Research could examine what factors drive these non-traditional faculty members to work long hours on multiple tasks. Research could also investigate the amount of time contingent faculty members spend commuting between institutions or between jobs and the affect it has on faculty drive. Research could also examine if faculty drive decreases over time for faculty members in non-traditional appointments. Research could also compare full-time contingent faculty members with full-time tenured faculty members in terms of variables affecting faculty drive.

## **Conclusion**

There is a growing perception that academic work is not viable because of long hours and difficulties in balancing intense work demands and non-work responsibilities. Many graduate students enter academia with the hope of becoming professors and academics. They work closely with their advisors to achieve this goal and to gain valuable experience in the responsibilities and requirements of academic life. These experiences, however, also highlight many negative aspects of faculty life, including

working long hours, difficulties in managing work and family, and challenges with balancing expanding roles and duties. The academy must begin to realize that exposure to academic life dissuades many from pursuing academic careers. If the academy wants to attract the best new faculty members, it must begin to realize the challenges facing current faculty members and the negative effects these challenges are having on many bright, young scholars.

In an era of unprecedented change to faculty work, researchers are urged to remain focused on the concerns of faculty members regarding academic work and time required to complete academic tasks. Faculty members are often expected to pursue new teaching styles, new technology, more research, more advising, and more collaboration, with little to no attention being paid from the academy on the lack of available time to accomplish these tasks in an efficient and effective manner. This study finds a positive relationship between the number of work spheres in which faculty members work and the number of hours faculty members work per week. It also finds that the more time faculty members allocate to service, administration, research, and other duties, the more likely faculty members are to work long hours. These findings confirm challenges being expressed by faculty members trying to do more in all areas of their academic life to meet rising productivity standards. Further research is needed to understand the magnitude of this time struggle, its impact on academic satisfaction and commitment, and the extent to which faculty members will find the drive to complete all academic work in the twenty-first century. If the academy does not address these time and workload concerns, it risks losing its best and brightest faculty members.

The academy must begin to investigate the extent to which faculty members sacrifice evenings, weekends, and family time to concentrate on academic tasks. In the short-term, these sacrifices may be acceptable to faculty members, but over the long-term, these sacrifices could prove costly to both the faculty member and the academy. The academy must address these faculty time, workload, and drive issues, or risk not being able to attract and retain the best and brightest minds of the twenty-first century.



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Appendix 1

*Independent Variable Framework Constructs and Corresponding National Study of Postsecondary Faculty 1999 Items*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Time Allocation			
	Computed measure (number of faculty work spheres): for Q31a1-Q31a7, sum the number of questions with time allocations greater than zero	Continuous	1-7
	Q31a1: Percent time teaching undergraduate students	Continuous	0-100
	Q31a2: Percent time teaching graduate students	Continuous	0-100; referent group for linear combination of time items
	Q31a3: Percent time conducting research and scholarship	Continuous	0-100
	Q31a4: Percent time engaging in professional growth	Continuous	0-100
	Q31a5: Percent time conducting administration	Continuous	0-100
	Q31a6: Percent time conducting service	Continuous	0-100

Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Items (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Time Allocation (continued)	Q31a7: Percent time spent on "other" academic activities: outside consulting, freelance work, other outside work/non-teaching professional activities	Continuous	0-100
	Computed item (time concentration-75 percent or more time in any academic work sphere): for Q31a1-Q31a7, count spheres where value >75.	Dichotomous	0 (No), 1 (Yes)
Time Disconnection	Computed measure (time disconnection-total percent difference between actual time allocations and preferred time allocations for seven work spheres): Sum the absolute value difference of actual time allocation questions (Q31a1 thru Q31a7) minus preferred time allocation questions (Q31b1 thru Q31b7)	Continuous	0-396

Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Items (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Time Disconnection (continued)	<p>Computed measure (preference for more work spheres): Step 1 was creating seven new items based on the following recodes of preferred time allocation questions (Q31b1 thru Q31b7) minus actual time allocation questions (Q31a1 thru Q31a7)</p> <ul style="list-style-type: none"> <li>• If Q31b1-Q31a1&gt;0, code as 1</li> <li>• If Q31b2-Q31a2&gt;0, code as 1</li> <li>• If Q31b3-Q31a3&gt;0, code as 1</li> <li>• If Q31b4-Q31a4&gt;0, code as 1</li> <li>• If Q31b5-Q31a5&gt;0, code as 1</li> <li>• If Q31b6-Q31a6&gt;0, code as 1</li> <li>• If Q31b7-Q31a7&gt;0, code as 1</li> <li>• [For all, if =0, code 0, if &lt;0, code -1]</li> </ul> <p>Step 2: Create item using the count function to capture all the items with the value “1”</p>	Continuous	0-7



Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Item (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Time Disconnection (continued)	<p>Computed measure (preference for fewer work spheres): Step 1: create seven new items based on the following recodes of preferred time allocation questions (Q31b1 thru Q31b7) minus actual time allocation questions (Q31a1 thru Q31a7)</p> <ul style="list-style-type: none"> <li>• If Q31b1-Q31a1&lt;0, code as -1</li> <li>• If Q31b2-Q31a2&lt;0, code as -1</li> <li>• If Q31b3-Q31a3&lt;0, code as -1</li> <li>• If Q31b4-Q31a4&lt;0, code as -1</li> <li>• If Q31b5-Q31a5&lt;0, code as -1</li> <li>• If Q31b6-Q31a6&lt;0, code as -1</li> <li>• If Q31b7-Q31a7&lt;0, code as -1</li> <li>• [For all, if &gt;0, code 1, if =0, code 0]</li> </ul> <p>Step 2: Create item using the count function to capture all the items with the value “-1”</p>	Continuous	0-7

Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Items (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Teaching Load			
	Q32a1 (Number of undergraduate committees served)	Continuous	0-99
	Q32a2 (Number of graduate committees served on)	Continuous	0-99
	Q49a1 (Number of undergraduate students taught individually)	Continuous	0-999
	Q49b1 (Number of graduate students taught individually)	Continuous	0-999
	Q49c1 (Number of first professional students taught individually)	Continuous	0-999
	Q33 (Number of classes taught)	Continuous	0-99
Research Load			
	Q29b1 (Number of articles published in refereed professional or trade journals or creative works published in juried media—sole-author responsibility during past two years)	Continuous	0-99

Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Item (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Research Load (continued)	Q29c1 (Number of articles published in refereed professional or trade journal or creative works published in juried media—joint-author responsibility during past two years)	Continuous	0-99
	Q29b2 (Number of articles published in nonrefereed professional or trade journals or creative works published in nonjuried media—sole-author responsibility during past two years)	Continuous	0-99
	Q29c2 (Number of articles published in nonrefereed professional or trade journal or creative works published in nonjuried media—joint-author responsibility during past two years)	Continuous	0-99
	Q29b4 (Number of textbooks, other books; monographs; research or technical reports disseminated internally or to clients—sole-author responsibility during past two years)	Continuous	0-99

Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Item (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Research Load (continued)	Q29c4 (Number of textbooks, other books; monographs; research or technical reports disseminated internally or to clients—joint-author responsibility during past two years)	Continuous	0-99
	Q29b5 (Presentations at conferences, workshops, etc., or exhibitions or performances in the fine or applied arts—sole-author responsibility during the past two years)	Continuous	0-999
	Q29c5 (Presentations at conferences, workshops, etc., or exhibitions or performances in the fine or applied arts—joint-author responsibility during the past two years)	Continuous	0-999
	Computed variable (grant dollars obtained): Log of Q59a (Total funds received from all sources for the 1998-99 academic year)	Continuous	0-9,999,999, Don't know
	Q58 (Total number of grants/contracts from all sources in the 1998 Fall term)	Continuous	0-99

Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Item (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Service Load (continued)	Q62b1 (Number of personnel committees served)	Continuous	0-99
	Q62c1 (Number of governance committees served)	Continuous	0-99
	Q62d1 (Number of other administrative committees served)	Continuous	0-99
Satisfaction	Q66a (Workload)	Categorical	Very dissatisfied (1), Somewhat dissatisfied (2), Somewhat satisfied (3), Very satisfied (4)
	Q66d (Time available for keeping current in my field)	Categorical	Very dissatisfied (1), Somewhat dissatisfied (2), Somewhat satisfied (3), Very satisfied (4)
	Q66e (Effectiveness of faculty leadership at this institution)	Categorical	Very dissatisfied (1), Somewhat dissatisfied (2), Somewhat satisfied (3), Very satisfied (4)

Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Items (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Satisfaction (continued)	Q66f (Freedom to do outside consulting)	Categorical	Very dissatisfied (1), Somewhat dissatisfied (2), Somewhat satisfied (3), Very satisfied (4)
	Q66j (My job here, overall)	Categorical	Very dissatisfied (1), Somewhat dissatisfied (2), Somewhat satisfied (3), Very satisfied (4)
	Q65d (Time available for working with students as an advisor, mentor, etc.)	Categorical	Very dissatisfied (1), Somewhat dissatisfied (2), Somewhat satisfied (3), Very satisfied (4)
	Q65e (Time available for class preparation)	Categorical	Very dissatisfied (1), Somewhat dissatisfied (2), Somewhat satisfied (3), Very satisfied (4)
Sociodemographic Characteristics	Computed item (gender): Created dummy-coded item for Q81 (Gender). Male was the referent group.	Categorical	Female (2=1, else 0)

Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Items (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Sociodemographic Characteristics (continued)	Computed item (Race): Created dummy-coded items from Qx03_84 (Race). Minority was the referent group.	Categorical	Minority (1 thru 4=1, else 0)
	Computed item (Marital Status): Created dummy-coded items from Q87 (Marital status). Married was the referent group.	Categorical	Single ((1=1, 4=1), else 0)
	Computed item (Dependents): Created dummy-coded items from Q80 (Number of dependents) Total dependants). No dependents was the referent group.	Categorical	No Dependents (0) Any Dependent (1 thru highest=1, else 0)
	Q79 (Total household (family) income)	Continuous	0-9,999,999
	Computed item (Tenure Track): First, computed Track item (Q10 (Tenure Status) + corrected tenure data from institutional dataset). Next, created dummy-coded items from Track. Tenured appointment was the referent group.	Categorical	Tenured (0), On tenure-track but not tenured (2=1, else 0), Not on tenure-track (3=1, else 0)

Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Item (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Sociodemographic Characteristics (continued)	Computed item (number of years employed in one's higher education job): 98 minus value in Q7 (year began the job you held at the institution during Fall 1998 term)	Continuous	0-98
	Computed item (Rank): Created dummy-coded items from Q8 (academic rank). Professor was the referent group.	Categorical	Professor (0), Associate Professor (2=1, else 0), Assistant Professor (3=1, else 0)
	Computed item (highest degree): Created dummy item from Q16a1 (highest degree obtained). Not having a doctorate) was the referent group. (Excl. degrees below doctorate)	Categorical	Not having a doctorate (0), Doctoral (2=1, else 0)
	Computed item (number of years since highest degree obtained): 98- value in Q16b1 (year received highest degree)	Continuous	0-98



Appendix 1

*Independent Variable Framework Constructs and Corresponding 1999 National Study of Postsecondary Faculty Items (continued)*

Framework Variable	Survey Item Number and Name	Item Type	Response Categories
Sociodemographic Characteristics (continued)	Computed item: Created dummy items from Qx02_15 (Research discipline) for ten academic disciplines. Humanities was the referent group.	Categorical	Humanities (0), Agriculture & home economics (1=1, else 0), Business (2=1, else 0), Education (3=1, else 0), Engineering (4=1, else 0), Fine arts (5=1, else 0), Health sciences (6=1, else 0), Natural sciences (8=1, else 0), Social sciences (9=1, else 0), Other programs (10=1, else 0)

Appendix 2

*Correlation Matrix (N=3,812)*

Correlations	1	2	3	4	5	6	7	8
Dependent Variable (Faculty Drive)								
1 Total Hours Worked Per Week	1.00							
Sociodemographic Characteristics								
2 Female	-.04*	1.00						
3 Minority	-.04*	-.01	1.00					
4 Single	.03	.21***	.03	1.00				
5 Dependents	-.02	-.23***	.05**	-.42***	1.00			
6 Family Income	.05**	.01	-.02	-.18***	.09***	1.00		
7 Doctoral Degree	-.07***	.01	.01	.05**	-.08***	-.09***	1.00	
8 Number of Years Since Highest Degree Obtained	.02	-.27***	-.16***	-.12***	.07***	.09***	-.13***	1.00

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	1	2	3	4	5	6	7	8
<b>Sociodemographic Characteristics (continued)</b>								
9 Professor (referent group)	.09***	-.24***	-.13***	-.10***	.06***	.10***	.04**	.63***
10 Associate Professor	-.09***	.07***	.01	-.01	.05**	-.02	.01	-.08***
11 Assistant Professor	-.01	.19***	.13***	.12***	-.12***	-.08***	-.06**	-.60***
12 Number of Years Employed in One's Higher Education Job	-.03	-.22***	-.16***	-.07***	.00	.01	.09***	.74***
13 Tenured Appointment (referent group)	.01	-.18***	-.12***	-.09***	.09***	.03*	.19***	.54***
14 Tenure-Track Appointment	.03	.14***	.12***	.12***	-.09***	-.08***	.07***	-.54***
15 Not on Tenure-Track Appointment	-.05**	.09***	.01	-.02	-.01	.04**	-.34***	-.09***
16 Agriculture & Home Economics	.00	-.08***	-.05**	-.03	.05**	-.03	.07***	.04*

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlation	1	2	3	4	5	6	7	8
<b>Sociodemographic Characteristics</b> (continued)								
17 Business	-.01	-.03	.00	-.02	.05**	.01	.07***	-.10***
18 Education	-.02	.11***	.00	.04**	-.06**	-.01	.10***	-.06***
19 Engineering	.05**	-.14***	.11***	-.06***	.05**	-.02	.12***	-.01
20 Fine Arts	.00	.02	-.04*	.02	-.02	-.02	.04*	-.04*
21 Health Sciences	.06***	.06***	.00	-.04*	.04**	.07***	-.45***	.00
22 Humanities (referent group)	-.06***	.08***	-.01	.08***	-.10***	-.06***	.13***	-.01
23 Natural Sciences	.02	-.13***	.00	-.03	.02	.02	.15***	.07***
24 Social Sciences	-.01	.04**	-.01	.02	-.02	-.02	.15***	-.02

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	1	2	3	4	5	6	7	8
Sociodemographic Characteristics (continued)								
25 Other Programs	.00	.02	-.02	.03	-.01	.01	-.10***	.01
Teaching Load								
26 Number of Classes Taught	.01	-.01	.00	-.01	.00	-.02	-.01	.00
27 Number of Undergraduate Committees Served	.06***	-.02	.03	-.01	-.01	-.03*	.10***	.03*
28 Number of Graduate Committees Served	.09***	.00	-.05**	-.02	.02	-.02	.18***	.06***
29 Number of Undergraduate Students Taught Individually	.02	-.03*	.02	.00	.02	-.03	.09***	-.02
30 Number of Graduate Students Taught Individually	.08***	.03	.01	.00	.03	.00	.15***	-.05**
31 Number of First Professional Students Taught Individually	.05**	-.01	-.02	-.06***	.06***	.09***	-.44***	.06***
Research Load								
32 Grant Dollars Obtained	.18***	-.09***	.04**	-.08***	.12***	.07***	.06***	.01

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	1	2	3	4	5	6	7	8
Research Load (continued)								
33 Number of Grants Obtained	.16****	-.10****	.03	-.09****	.11****	.09****	.03	.00
34 Number of Sole-Authored Refereed Articles Published	.13****	-.07****	.05**	-.05**	.04*	.03	.05**	.12****
35 Number of Sole-Authored Nonrefereed Articles Published	.10****	-.05**	.00	-.03	.05**	.02	-.01	.08****
36 Number of Sole-Authored Books/Reports Published	.07****	-.07****	-.01	-.04*	.04*	.01	.03*	.08****
37 Number of Sole-Authored Presentations	.13****	-.05**	-.01	-.03*	.04*	.04**	-.05**	.08****
38 Number of Joint-Authored Refereed Articles Published	.13****	-.11****	.01	-.11****	.10****	.08****	-.01	.11****
39 Number of Joint-Authored Nonrefereed Articles Published	.07****	-.07****	.00	-.06****	.07****	.06****	.02	.07****
40 Number of Joint-Authored Books/Reports Published	.06**	-.04*	.00	-.05**	.05**	.03	.05**	.06****

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	1	2	3	4	5	6	7	8
Research Load (continued)								
41 Number of Joint-Authored Presentations	.09***	-.03	.01	-.05**	.05**	.04*	.06**	.04**
Service Load								
42 Number of Personnel Committees Served	.10***	.00	.00	-.02	.04*	.02	.03	.07***
43 Number of Governance Committees Served	.11***	.00	-.06***	-.01	.03	.04*	.04*	.11***
44 Number of Other Administrative Committees Served	.09***	.01	-.02	.00	-.02	.00	-.02	.05**
Time Allocation								
45 Percent Time Allocated to Undergraduate Teaching	-.14***	.03	-.01	.06***	-.09***	-.13***	.29***	-.07***
46 Percent Time Allocated to Graduate Teaching (referent group)	.00	.05**	-.01	.00	-.02	.04*	-.14***	.02
47 Percent Time Allocated to Research	.01	-.08***	.06***	-.02	.05**	.02	.15***	-.10***
48 Percent Time Allocated to Professional Development	.03	.01	.04*	.02	.00	-.02	-.11***	.01

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	1	2	3	4	5	6	7	8
Time Allocation (continued)								
49 Percent Time Allocated to Administration	.06***	.00	-.07***	-.03	.02	.08***	.02	.14***
50 Percent Time Allocated to Service	.08***	.01	.02	-.02	.05**	.04**	-.48***	.01
51 Percent Time Allocated to Other Academic Activities	.07***	-.02	.00	-.02	.05**	.02	-.04**	.08***
52 Number of Faculty Work Spheres	.16***	.02	.00	.00	.01	.03	-.01	-.02
53 Time Concentration (75 Percent or More Time Allocated to a Work Sphere)	-.08***	.04*	-.02	-.01	.00	-.01	-.05**	-.01
Time Disconnection								
54 Time Disconnection	.04*	.08***	.02	.02	-.03*	-.03	.05**	-.08***
55 Preference for More Work Spheres	.07***	.08***	.03	.03*	-.04*	-.01	-.02	-.05**
56 Preference for Fewer Work Spheres	.07***	.09***	.06**	.04*	-.04*	-.03	.03	-.12***



Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	1	2	3	4	5	6	7	8
Satisfaction								
57 Time Available to Advise Students	-.11***	-.10***	-.03	-.04*	.01	.00	.04*	.12***
58 Time Available for Class Preparation	-.14***	-.12***	-.01	-.03	.01	-.01	.07***	.13***
59 Workload	-.17***	-.13***	-.02	-.06***	.04*	.02	.03*	.16***
60 Time to Keep Current in Field	-.12***	-.16***	.03	-.06***	.06***	.03*	-.03	.17***
61 Effectiveness of Faculty Leadership	-.07***	-.03	.00	-.03	.02	.02	-.04*	.05**
62 Freedom to do Consulting	-.01	-.06***	-.08***	-.02	-.02	.05**	.05**	.16***
63 Job Overall	-.07***	-.10***	-.07***	-.07***	.03*	.05**	-.01	.16***

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	9	10	11	12	13	14	15	16
<b>Sociodemographic Characteristics (continued)</b>								
9 Professor (referent group)	1.00							
10 Associate Professor	-.55***	1.00						
11 Assistant Professor	-.52***	-.43***	1.00					
12 Number of Years Employed in One's Higher Education Job	.53***	-.03	-.54***	1.00				
13 Tenured Appointment (referent group)	.50***	.24***	-.78***	.58***	1.00			
14 Tenure-Track Appointment	-.42***	-.23***	.69***	-.49***	-.71***	1.00		
15 Not on Tenure-Track Appointment	-.18***	-.05**	.25***	-.21***	-.53***	-.22***	1.00	
16 Agriculture & Home Economics	.07***	-.02	-.06***	.08***	.08***	-.04**	-.06***	1.00

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	9	10	11	12	13	14	15	16
<b>Sociodemographic Characteristics (continued)</b>								
17 Business	-.05**	.06***	.00	-.06***	.01	.05**	-.07***	-.04*
18 Education	-.05**	.03*	.02	-.04*	.00	.02	-.02	-.04**
19 Engineering	.02	.01	-.04*	.01	.07***	-.01	-.09***	-.05**
20 Fine Arts	-.02	.03	-.01	.00	.02	.01	-.04*	-.03
21 Health Sciences	-.09***	.03	.07***	-.09***	-.17***	-.01	.25***	-.08***
22 Humanities (referent group)	.00	.02	-.02	.06***	.07***	.00	-.09***	-.06***
23 Natural Sciences	.07***	-.08***	.01	.05**	.02	.01	-.04**	-.10***
24 Social Sciences	.03	-.02	-.01	.02	.05**	.01	-.08***	-.07***

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	9	10	11	12	13	14	15	16
<b>Sociodemographic Characteristics (continued)</b>								
25 Other Programs	.05**	-.02	-.03*	.00	.02	.01	-.05**	-.05**
<b>Teaching Load</b>								
26 Number of Classes Taught	-.03	.04**	-.02	.04*	.04*	-.01	-.04**	-.01
27 Number of Undergraduate Committees Served	.03	.01	-.04**	.08***	.07***	.00	-.09***	-.05**
28 Number of Graduate Committees Served	.11***	.02	-.14***	.12***	.21***	-.07***	-.21***	.02
29 Number of Undergraduate Students Taught Individually	.00	.00	.00	.04**	.02	.02	-.05**	.00
30 Number of Graduate Students Taught Individually	.05**	.01	-.07***	-.01	.08***	-.02	-.09***	-.02
31 Number of First Professional Students Taught Individually	-.05**	.05**	.00	-.05**	-.10***	-.04*	.19***	-.05**
<b>Research Load</b>								
32 Grant Dollars Obtained	.10***	-.06***	-.04*	-.04*	.04*	.01	-.06***	.10***

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	9	10	11	12	13	14	15	16
Research Load (continued)								
33 Number of Grants Obtained	.08***	-.03	-.06***	-.03	.05**	-.02	-.04*	.13***
34 Number of Sole-Authored Refereed Articles Published	.15***	-.04**	-.12***	.09***	.12***	-.08***	-.08***	-.01
35 Number of Sole-Authored Nonrefereed Articles Published	.11***	-.02	-.10***	.05**	.09***	-.08***	-.02	.10***
36 Number of Sole-Authored Books/Reports Published	.11***	-.02	-.10***	.06***	.08***	-.05**	-.05**	.00
37 Number of Sole-Authored Presentations	.12***	-.03*	-.10***	.04*	.08***	-.08***	-.02	.05**
38 Number of Joint-Authored Refereed Articles Published	.16***	-.04**	-.12***	.06***	.09***	-.10***	.00	.04*
39 Number of Joint-Authored Nonrefereed Articles Published	.08***	.01	-.10***	.05**	.08***	-.07***	-.03	.17***
40 Number of Joint-Authored Books/Reports Published	.11***	-.01	-.11***	.07***	.10***	-.08***	-.04*	.05**

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	9	10	11	12	13	14	15	16
Research Load (continued)								
41 Number of Joint-Authored Presentations	.08***	.00	-.08***	.02	.06**	-.05**	-.01	.04*
Service Load								
42 Number of Personnel Committees Served	.11***	.02	-.13***	.03*	.15***	-.07***	-.12***	.03*
43 Number of Governance Committees Served	.13***	.02	-.16***	.11***	.17***	-.11***	-.10***	-.01
44 Number of Other Administrative Committees Served	.06***	.02	-.08***	.03	.08***	-.05**	-.05**	.04*
Time Allocation								
45 Percent Time Allocated to Undergraduate Teaching	-.08***	.05**	.04*	.12***	.06***	.09***	-.19***	.00
46 Percent Time Allocated to Graduate Teaching (referent group)	.03	.00	-.03	-.02	.00	-.01	.01	-.09***
47 Percent Time Allocated to Research	-.01	-.08***	.10***	-.09***	-.07***	.10***	-.02	.07***
48 Percent Time Allocated to Professional Development	-.03	.03	.00	.01	-.02	-.05**	.08***	.00

Appendix 2 (continued)

*Correlation Matrix (N=3,812)(continued)*

Correlations	9	10	11	12	13	14	15	16
Time Allocation (continued)								
49 Percent Time Allocated to Administration	.16***	.02	-.19***	.03	.16***	-.17***	-.02	.02
50 Percent Time Allocated to Service	-.09***	.01	.09***	-.10***	-.20***	-.04*	.32***	-.01
51 Percent Time Allocated to Other Academic Activities	.06***	-.02	-.04**	.05**	.02	-.04*	.02	-.02
52 Number of Faculty Work Spheres	.03	.05**	-.09***	.01	.07***	.00	-.10***	-.02
53 Time Concentration (75 Percent or More Time Allocated to a Work Sphere)	-.05**	-.03*	.09***	-.04**	-.11***	-.01	.17***	.05**
Time Disconnection								
54 Time Disconnection	-.07***	.05**	.02	-.08***	-.01	.02	-.02	-.05**
55 Preference for More Work Spheres	-.05**	.05**	.00	-.07***	-.02	.01	.01	-.03
56 Preference for Fewer Work Spheres	-.08***	.06***	.03	-.09***	-.01	.05**	-.05**	-.03*

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	9	10	11	12	13	14	15	16
<b>Satisfaction</b>								
57 Time Available to Advise Students	.11***	-.052**	-.07***	.12***	.06**	-.04*	-.03	-.01
58 Time Available for Class Preparation	.12***	-.04**	-.09***	.13***	.09***	-.05**	-.06***	.00
59 Workload	.13***	-.05**	-.09***	.14***	.08***	-.08***	-.02	.02
60 Time to Keep Current in Field	.14***	-.07***	-.08***	.14***	.08***	-.09***	.00	.00
61 Effectiveness of Faculty Leadership	.06***	-.03*	-.03*	.04*	.00	-.03	.04*	.02
62 Freedom to do Consulting	.18***	-.04**	-.15***	.15***	.15***	-.10***	-.09***	.02
63 Job Overall	.19***	-.07***	-.13***	.13***	.11***	-.09***	-.04**	.03



Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	17	18	19	20	21	22	23	24
<b>Sociodemographic Characteristics (continued)</b>								
17 Business	1.00							
18 Education	-.06**	1.00						
19 Engineering	-.06***	-.07***	1.00					
20 Fine Arts	-.04*	-.04*	-.04**	1.00				
21 Health Sciences	-.10***	-.11***	-.13***	-.07***	1.00			
22 Humanities (referent group)	-.08***	-.09***	-.10***	-.05**	-.16***	1.00		
23 Natural Sciences	-.13***	-.13***	-.15***	-.08***	-.25***	-.19***	1.00	
24 Social Sciences	-.09***	-.09***	-.11***	-.06***	-.17***	-.14***	-.21***	1.00

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	17	18	19	20	21	22	23	24
Sociodemographic Characteristics (continued)								
25 Other Programs	-.07***	-.08***	-.09***	-.05**	-.14***	-.11***	-.17***	-.12***
Teaching Load								
26 Number of Classes Taught	.00	.02	-.01	.04*	.04**	.02	-.06**	-.02
27 Number of Undergraduate Committees Served	-.02	-.03	.04*	.06**	-.08***	.11***	-.04*	.04*
28 Number of Graduate Committees Served	-.06***	.16***	.11***	-.01	-.12***	-.03*	.02	.07***
29 Number of Undergraduate Students Taught Individually	.03	-.02	.04*	.02	-.08***	.01	.00	.05**
30 Number of Graduate Students Taught Individually	.00	.10***	.09***	.00	-.06***	-.05**	.00	.05**
31 Number of First Professional Students Taught Individually	-.05**	-.06***	-.07***	-.04**	.33***	-.10***	-.09***	-.08***
Research Load								
32 Grant Dollars Obtained	-.14***	-.03	.17***	-.09***	.07***	-.24***	.29***	-.06**

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	17	18	19	20	21	22	23	24
Research Load (continued)								
33 Number of Grants Obtained	-.12***	-.04*	.16***	-.07***	.09***	-.19***	.18***	-.07***
34 Number of Sole-Authored Refereed Articles Published	-.05**	.00	.04*	.00	.00	.06**	.00	.00
35 Number of Sole-Authored Nonrefereed Articles Published	-.01	.02	.04*	-.02	.00	.00	-.08***	.00
36 Number of Sole-Authored Books/Reports Published	-.01	.04*	.10***	-.02	-.01	-.01	-.07***	.01
37 Number of Sole-Authored Presentations	-.03*	.06***	-.03	.00	.06***	-.02	-.05**	-.01
38 Number of Joint-Authored Refereed Articles Published	-.04*	-.03	.11***	-.07***	.09***	-.17***	.15***	-.05**
39 Number of Joint-Authored Nonrefereed Articles Published	-.02	.00	.14***	-.04**	.02	-.09***	.00	-.04*
40 Number of Joint-Authored Books/Reports Published	-.02	.08***	.09***	-.03	-.03*	-.04*	-.07***	.03*

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	17	18	19	20	21	22	23	24
Research Load (continued)								
41 Number of Joint-Authored Presentations	-.01	.07***	.09***	-.02	.02	-.11***	.03	.00
Service Load								
42 Number of Personnel Committees Served	-.02	.00	.02	.00	.00	-.01	-.03	.04*
43 Number of Governance Committees Served	-.02	.04**	-.02	.04*	.01	-.01	-.04*	.03
44 Number of Other Administrative Committees Served	-.02	.00	.00	.01	.02	-.02	-.03*	.00
Time Allocation								
45 Percent Time Allocated to Undergraduate Teaching	.03	-.02	.04**	.10***	-.26***	.22***	-.02	.05**
46 Percent Time Allocated to Graduate Teaching (referent group)	.01	.08***	.01	-.04*	.05**	-.09***	-.07***	.00
47 Percent Time Allocated to Research	.01	-.07***	.00	-.07***	-.04*	-.10***	.28***	.01
48 Percent Time Allocated to Professional Development	.01	.07***	-.01	.00	.09***	-.04*	-.07***	-.05**

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	17	18	19	20	21	22	23	24
Time Allocation (continued)								
49 Percent Time Allocated to Administration	-.02	.040*	-.01	.01	.00	.01	-.09***	.00
50 Percent Time Allocated to Service	-.06***	-.03*	-.08***	-.04*	.38***	-.10***	-.14***	-.08***
51 Percent Time Allocated to Other Academic Activities	.02	.01	.02	.00	.03	-.03	-.06***	.02
52 Number of Faculty Work Spheres	-.02	.07***	.06**	.04*	.08***	-.05**	-.07***	.00
53 Time Concentration (75 Percent or More Time Allocated to a Work Sphere)	-.02	-.03	-.05**	-.02	.00	.03	.00	-.05**
Time Disconnection								
54 Time Disconnection	.04*	.02	-.01	.02	-.02	.04*	-.05**	.05**
55 Preference for More Work Spheres	.01	.03	.03	.01	.02	-.01	-.06***	.02
56 Preference for Fewer Work Spheres	.02	.05**	.03	.02	-.01	.00	-.03*	.03*

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	17	18	19	20	21	22	23	24
<b>Satisfaction</b>								
57 Time Available to Advise Students	.04**	-.01	-.04*	.01	-.08***	.05**	.00	.00
58 Time Available for Class Preparation	.06***	-.01	-.03	.00	-.10***	.04**	.02	.01
59 Workload	.02	-.02	-.04*	-.03	-.04**	.01	.02	.00
60 Time to Keep Current in Field	.04*	-.03*	.00	-.04*	.00	-.04*	.04**	.00
61 Effectiveness of Faculty Leadership	.02	.01	-.03*	.02	.02	-.03*	-.03	-.03
62 Freedom to do Consulting	.01	-.02	.02	.01	-.05**	.02	.02	.00
63 Job Overall	.01	-.03	-.02	.01	.00	.00	-.03	-.01

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	25	26	27	28	29	30	31	32
Sociodemographic Characteristics (continued)								
25 Other Programs	1.00							
Teaching Load								
26 Number of Classes Taught	.02	1.00						
27 Number of Undergraduate Committees Served	.03	.03*	1.00					
28 Number of Graduate Committees Served	-.06***	.03	.08***	1.00				
29 Number of Undergraduate Students Taught Individually	-.02	.09***	.13***	.01	1.00			
30 Number of Graduate Students Taught Individually	-.03	.04**	.05**	.33***	.15***	1.00		
31 Number of First Professional Students Taught Individually	.01	.05**	-.07***	-.09***	-.07***	-.05**	1.00	
Research Load								
32 Grant Dollars Obtained	-.10***	-.04*	-.01	.17***	-.03	.17***	.00	1.00

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	25	26	27	28	29	30	31	32
Research Load (continued)								
33 Number of Grants Obtained	-.07***	-.04*	.00	.16***	-.03	.17***	.00	.75***
34 Number of Sole-Authored Refereed Articles Published	-.02	.02	.09***	.06***	.05**	.09***	.00	.09***
35 Number of Sole-Authored Nonrefereed Articles Published	.04*	.03*	.07***	.02	.10***	.08***	.01	.06***
36 Number of Sole-Authored Books/Reports Published	.04*	-.01	.02	.05**	.05***	.05**	.01	.06***
37 Number of Sole-Authored Presentations	.01	.03	.06***	.04**	.04**	.09***	.05**	.12***
38 Number of Joint-Authored Refereed Articles Published	-.08***	-.01	-.01	.08***	.00	.08***	.03*	.32***
39 Number of Joint-Authored Nonrefereed Articles Published	-.05**	.02	-.01	.06***	.03	.07***	.01	.18***
40 Number of Joint-Authored Books/Reports Published	.04**	-.03	.03	.09***	.04*	.07***	-.03	.11***



Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	25	26	27	28	29	30	31	32
<b>Research Load (continued)</b>								
41 Number of Joint-Authored Presentations	-.07***	-.02	.02	.10***	.02	.10***	.00	.21***
<b>Service Load</b>								
42 Number of Personnel Committees Served	.02	.02	.07***	.10***	.03	.09***	.00	.10***
43 Number of Governance Committees Served	.04*	.03*	.08***	.14***	.02	.07***	.01	.02
44 Number of Other Administrative Committees Served	.01	.02	.02	.03	.01	.00	.03	-.01
<b>Time Allocation</b>								
45 Percent Time Allocated to Undergraduate Teaching	-.01	.16***	.15***	-.07***	.21***	-.11***	-.23***	-.24***
46 Percent Time Allocated to Graduate Teaching (referent group)	.09***	.06***	-.06***	.22***	-.09***	.23***	.22***	-.02
47 Percent Time Allocated to Research	-.08***	-.14***	-.04*	.01	-.05**	.03	-.11***	.36***
48 Percent Time Allocated to Professional Development	.01	.02	-.01	-.03	-.01	-.02	.06***	-.03

Appendix 2 (continued)

*Correlation Matrix (N=3,812) (continued)*

Correlations	25	26	27	28	29	30	31	32
Time Allocation (continued)								
49 Percent Time Allocated to Administration	.06***	-.11***	-.03	-.01	-.05**	-.03*	-.03	-.04*
50 Percent Time Allocated to Service	-.07***	.00	-.07***	-.13***	-.07***	-.09***	.27***	-.04*
51 Percent Time Allocated to Other Academic Activities	.03	-.01	-.01	.00	-.03	.02	.01	.01
52 Number of Faculty Work Spheres	.01	.11***	.08***	.16***	-.01	.13***	.02	.13***
53 Time Concentration (75 Percent or More Time Allocated to a Work Sphere)	.00	-.09***	-.05**	-.18***	.00	-.13**	.02	-.11***
Time Disconnection								
54 Time Disconnection	.02	.05**	.02	.00	.04*	-.02	-.03*	-.08***
55 Preference for More Work Spheres	.01	.05**	.00	.02	.01	.00	.02	-.04*
56 Preference for Fewer Work Spheres	-.01	.08***	.05**	.08***	.03*	.05**	-.01	.01

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	25	26	27	28	29	30	31	32
<b>Satisfaction</b>								
57 Time Available to Advise Students	.02	-.02	-.01	-.07***	-.03	-.02	-.04*	-.05**
58 Time Available for Class Preparation	.04*	-.03	.00	-.07***	-.03	-.03	-.08***	-.05**
59 Workload	.04*	-.06***	.01	-.06***	-.03	-.05**	-.02	-.04*
60 Time to Keep Current in Field	-.01	-.05**	-.01	-.08***	-.02	-.02	.00	.01
61 Effectiveness of Faculty Leadership	.02	-.02	-.01	-.06***	-.01	-.01	.00	-.02
62 Freedom to do Consulting	.01	-.04**	.02	.05**	-.03	.03*	-.06***	.02
63 Job Overall	.07***	-.03	.03	-.02	-.01	.00	-.02	.02

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	33	34	35	36	37	38	39	40
Research Load (continued)								
33 Total Number of Grants Obtained	1.00							
34 Number of Sole-Authored Refereed Articles Published	.06***	1.00						
35 Number of Sole-Authored Nonrefereed Articles Published	.07***	.34***	1.00					
36 Number of Sole-Authored Books/Reports Published	.04***	.22***	.27***	1.00				
37 Number of Sole-Authored Presentations	.11***	.38***	.44***	.21***	1.00			
38 Number of Joint-Authored Refereed Articles Published	.31***	.30***	.17***	.09***	.25***	1.00		
39 Number of Joint-Authored Nonrefereed Articles Published	.21***	.14***	.35***	.15***	.22***	.36***	1.00	
40 Number of Joint-Authored Books/Reports Published	.13***	.12***	.18***	.37***	.21***	.15***	.21***	1.00

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	33	34	35	36	37	38	39	40
<b>Research Load (continued)</b>								
41 Number of Joint-Authored Presentations	.21***	.19***	.16***	.13***	.32***	.43***	.30***	.24***
<b>Service Load</b>								
42 Number of Personnel Committees Served	.13***	.07***	.08***	.04***	.10***	.06***	.06***	.06***
43 Number of Governance Committees Served	.01	.03	.03	.02	.04*	.03*	.02	.03
44 Number of Other Administrative Committees Served	.03	.00	.01	.05**	.03	.01	.01	.04*
<b>Time Allocation</b>								
45 Percent Time Allocated to Undergraduate Teaching	-.22***	-.02	-.03	-.02	-.10***	-.16***	-.08***	-.05***
46 Percent Time Allocated to Graduate Teaching (referent group)	-.03**	.00	-.01	.02	.02	.00	-.01	.01
47 Percent Time Allocated to Research	.30***	.05**	-.02	-.02	.02	.18***	.08***	.02
48 Percent Time Allocated to Professional Development	-.02	.02	.04*	.034*	.033*	-.02	.00	.02

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	33	34	35	36	37	38	39	40
Time Allocation (continued)								
49 Percent Time Allocated to Administration	-.02	-.01	.05**	.04*	.05**	-.02	.03	.04**
50 Percent Time Allocated to Service	-.01	-.04**	.00	-.04*	.02	.03	.01	-.04*
51 Percent Time Allocated to Other Academic Activities	.02	.02	.03	.04*	.03*	.01	-.01	.06****
52 Number of Faculty Work Spheres	.14****	.03	.06****	.07****	.07****	.06****	.05****	.09****
53 Time Concentration (75 Percent or More Time Allocated to a Work Sphere)	-.08****	-.04**	-.01	-.05**	-.04*	-.04*	-.04*	-.09****
Time Disconnection								
54 Time Disconnection	-.08****	.01	.01	.02	.00	-.06****	-.06****	.00
55 Preference for More Work Spheres	-.02	-.01	.02	.03	-.01	-.04*	-.02	.03
56 Preference for Fewer Work Spheres	.02	.02	.02	.00	.00	-.02	-.02	.01

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	33	34	35	36	37	38	39	40
<b>Satisfaction</b>								
57 Time Available to Advise Students	-.04**	.01	-.01	.00	.00	.00	-.03	.00
58 Time Available for Class Preparation	-.04**	.02	-.01	-.02	.00	-.03	-.03	.00
59 Workload	-.05**	.03	-.01	.00	.01	.00	-.01	.01
60 Time to Keep Current in Field	.00	.03	.00	.01	.04*	.06***	.01	.02
61 Effectiveness of Faculty Leadership	.00	-.05**	.01	-.02	.01	.00	.01	.02
62 Freedom to do Consulting	.03	.00	.04*	.01	.04**	.02	.03*	.04*
63 Job Overall	.04*	-.02	.01	.02	.05**	.03	.02	.05**

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	41	42	43	44	45	46	47	48
Research Load (continued)								
41 Number of Joint-Authored Presentations	1.00							
Service Load								
42 Number of Personnel Committees Served	.05**	1.00						
43 Number of Governance Committees Served	.01	.19***	1.00					
44 Number of Other Administrative Committees Served	.01	.09***	.01	1.00				
Time Allocation								
45 Percent Time Allocated to Undergraduate Teaching	-.09***	-.06***	-.05**	-.02	1.00			
46 Percent Time Allocated to Graduate Teaching (referent group)	.00	.00	.03	-.02	-.39**	1.00		
47 Percent Time Allocated to Research	.08***	-.05**	-.14***	-.12***	-.34***	-.14***	1.00	
48 Percent Time Allocated to Professional Development	-.01	-.02	-.02	.00	-.09***	-.01	-.12***	1.00



Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	41	42	43	44	45	46	47	48
Time Allocation (continued)								
49 Percent Time Allocated to Administration	.01	.18***	.24***	.17***	-.26***	-.20***	-.32***	-.05**
50 Percent Time Allocated to Service	-.01	-.06***	-.05**	.01	-.28***	-.11***	-.22***	.05***
51 Percent Time Allocated to Other Academic Activities	.05**	.01	-.01	-.01	-.11***	-.03	-.12***	.06***
52 Number of Faculty Work Spheres	.08***	.05***	.09**	.09***	-.05***	.04**	-.20***	.30***
53 Time Concentration (75 Percent or More Time Allocated to a Work Sphere)	-.03	-.05**	-.06***	-.04**	.07***	-.15***	.07***	-.13***
Time Disconnection								
54 Time Disconnection	-.02	.04**	.04*	.06***	.11***	-.08***	-.25***	-.04**
55 Preference for More Work Spheres	.01	.04*	.06***	.07***	.06***	-.07***	-.23***	.00
56 Preference for Fewer Work Spheres	.00	.00	.02	.02	.05***	.03*	-.12***	.09***

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	41	42	43	44	45	46	47	48
<b>Satisfaction</b>								
57 Time Available to Advise Students	-.01	-.05**	-.06***	-.06***	.01	.00	.08***	.03*
58 Time Available for Class Preparation	-.02	-.07***	-.08***	-.08***	.03	-.01	.10***	.03
59 Workload	.00	-.04*	-.05***	-.06***	-.01	-.02	.12***	.04**
60 Time to Keep Current in Field	.03*	-.04*	-.09***	-.08***	-.08**	.00	.21***	.04**
61 Effectiveness of Faculty Leadership	.00	-.02	-.01	-0.01	-.02	-.01	.03	.04*
62 Freedom to do Consulting	.04*	.00	.04**	-.01	.00	.00	.01	-.01
63 Job Overall	.04*	.02	.02	.00	-.06***	.00	.03	.04**

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	49	50	51	52	53	54	55	56
Time Allocation (continued)								
49 Percent Time Allocated to Administration	1.00							
50 Percent Time Allocated to Service	-.09***	1.00						
51 Percent Time Allocated to Other Academic Activities	-.05**	-.06***	1.00					
52 Number of Faculty Work Spheres	-.01	.12***	.22***	1.00				
53 Time Concentration (75 Percent or More Time Allocated to a Work Sphere)	.04**	-.01	-.09***	-.41***	1.00			
Time Disconnection								
54 Time Disconnection	.23***	-.01	.01	.03*	-.01	1.00		
55 Preference for More Work Spheres	.18***	.06***	.06***	.22***	-.01	.55***	1.00	
56 Preference for Fewer Work Spheres	-.05**	.04**	.06***	.34***	-.20***	.46***	.36***	1.00

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	49	50	51	52	53	54	55	56
<b>Satisfaction</b>								
57 Time Available to Advise Students	-.07**	-.08***	.02	-.08***	.03	-.20***	-.19***	-.13***
58 Time Available for Class Preparation	-.07***	-.10***	.01	-.08***	.03	-.21***	-.20***	-.15***
59 Workload	-.05**	-.08***	.02	-.10***	.04**	-.24***	-.20***	-.20***
60 Time to Keep Current in Field	-.11***	-.04*	.01	-.11***	.03*	-.25***	-.22***	-.20***
61 Effectiveness of Faculty Leadership	.01	-.02	.00	-.04*	.04*	-.14***	-.09***	-.12***
62 Freedom to do Consulting	.06***	-.13***	.07***	.03	-.02	-.11***	-.07***	-.07***
63 Job Overall	.09***	-.07***	.01	-.01	.00	-.18***	-.13***	-.15***

Appendix 2

*Correlation Matrix (N=3,812) (continued)*

Correlations	57	58	59	60	61	62	63
<b>Satisfaction</b>							
57 Time Available to Advise Students	1.00						
58 Time Available for Class Preparation	.70***	1.00					
59 Workload	.46***	.50***	1.00				
60 Time to Keep Current in Field	.45***	.49***	.60***	1.00			
61 Effectiveness of Faculty Leadership	.28***	.26***	.32***	.35***	1.00		
62 Freedom to do Consulting	.28***	.27***	.31***	.31***	.26***	1.00	
63 Job Overall	.43***	.40***	.53***	.45***	.50***	.41***	1.00