

UNIVERSITY OF ALBERTA

WORK ENVIRONMENT, JOB SATISFACTION  
AND EMPLOYEE HEALTH  
IN AN ACADEMIC SETTING

BY



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of the requirements for the MASTER OF SCIENCE

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*“No problem can be solved from the same level of consciousness that it was created. We must learn to see the world anew.”*

Albert Einstein

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## CHAPTER 1

### Purpose and Rationale for the Study

An important question in the field of workplace health is “what work environment and organizational factors influence employee health and well-being?” The purpose of this study was to investigate the relationship among work environment, job satisfaction and employee health in an academic setting. Specifically, this study set out to examine the relationships that job demand, job control and support have with job satisfaction and health of professors and administrative support employees in the Faculty of Agriculture, Forestry and Home Economics (AFHE) at the University of Alberta.

Four primary factors provided rationale for conducting this investigation. First, there is growing recognition among workplace health researchers of the need to examine how work environment affects employee health. Lowe, Shellenberg and Shannon (2003) state, “for this thrust in employee health promotion research to become a paradigm shift, as some have called it, it will require interdisciplinary studies that more systematically integrate work environments and health” (pg. 391). Traditionally, in workplace health promotion, the organization was primarily considered a setting for programs and activities aimed at improving the health behaviours of individual employees. Recently, emerging models have revealed that a healthy work environment and employee health are related and that both are required for optimal organizational performance. As a result, workplace health promotion needs to incorporate both the individual and the organization as the target of health promotion interventions

(Goetzel & Ozminkoski, 2000; Lowe et al., 2003; O'Donnell, 2000; Polanyi, Frank, Shannon, Sullivan & Lavis, 2000; Pratt, 2001; Shadedeh & Shain, 2001).

The second rationale is associated with the need to examine and understand workplace health in a contemporary context. Dramatic societal, economic and technological changes have created fundamentally different workplaces from those experienced by previous generations. Demographic and social changes include an aging population, and changes in family roles, especially in relation to women's increased labour force participation. For example, between 1976 and 1999, the labour force participation rate for women with children grew from 39% to 71% (Johnson, Lero & Rooney, 2001). In addition to these demographic changes, an information driven, knowledge-based economy is increasingly driving corporate success. In such an economy, the human mind does the "heavy lifting", and innovation is the key to keeping a business competitive (Joffe, Wilson & Wilkerson, 2000). Concurrently with the transformation to an information economy, the rapid proliferation of computer technologies, telecommunication and e-commerce has intensified the work environment. For example, the results of a 1996 survey of employees working in Canadian organizations showed that 60% of respondents reported that technology had increased the complexity of their jobs in the previous 12 months (Statistics Canada, 1998). While technology has freed workers from many tasks, it has also been reported to drive workers to work faster and smarter (Bachman, MacBride-King, 1999). Overlying these changes, the 1990s were a turbulent time for most organizations. Responding to economic downturn, organizations tried to

streamline and create smaller, flatter, more flexible structures. Downsizing and re-engineering became the mantra of organizational change in the early 1990s. One outcome of the changes in the 90s is that organizations were left with fewer people to do the work and these people are feeling more pressure and less security (Johnson et al., 2001; Sparks, Faragher & Cooper, 2001). For example, workers who report high job stress have increased from just over one in ten in 1991 to more than one in three in 2001 (Duxbury & Higgins, 2001). These factors heighten the need to study the relationship between work environment and health in the context of the contemporary work environment.

The third rationale is related to the trend that use of employee health benefits has been increasing at an alarming rate in Canada since 1990. According to the Conference Board of Canada, the cost of providing employee health benefits rose from 3.2 per cent in 1990 to over 6 per cent in 2003 (MacBride-King, 2004). Underlying some of the upward spiral in employer health benefit costs is the increased stress levels that Canadians are reporting (Duxbury & Higgins, 2001). Claims related to psychological/mental health issues comprise the fastest growing category of disability leave (Joffe et al., 2000). The Conference Board of Canada reports that if this trend is unchecked, by 2007, employers can expect to be spending up to 8% of their payroll on benefits. These statistics underscore the need for empirical research to increase information pertaining to health issues in the contemporary work environment.

The final rationale concerns the setting and target population of the study. This study took place in the Faculty of Agriculture, Forestry and Home

Economics at the University of Alberta and involved comparison of professor and administrative support occupational groups within that setting. Relatively little research has been directed toward understanding workplace characteristics and employee health in academic settings (Kinman, 1991). The University setting has long been regarded as a remarkably stable institution with a powerful set of core values such as academic freedom, intellectual curiosity and scholarship, education and dissemination of knowledge, and citizenship. Historically, academic work has been seen as highly satisfying, and in comparison to other occupations, relatively stress free (Kinman, 2001). Until recently it was generally believed that such factors as autonomy, role clarity and tenure protected academics from job characteristics and working conditions that are associated with occupational stress. In particular, the autonomy associated with tenured academic positions and the collegiate culture was believed to provide a protective and supportive framework for academics (Thorsen, 1996). However, similar to changes in work environments in general, the environment of academic institutions has changed significantly in the last 20 years. Academic institutions have been transformed through technology, globalism and market competitiveness. In addition, in the last decade academic and non-academic staff have had to meet massive “productivity expectations” created by increased student enrolment without matched increases in staffing or resources (Doyle & Hind, 1998). In fact, in Alberta, in the mid-1990s there was a significant reduction in resources, with a 21% decrease in government funding to post secondary institutions (Barnetson, 1997). Clearly, political, economic and social changes have transformed the

organizational climate and culture within academic settings. In addition, as Macinnes (1998) states, “there is a traditional tendency for universities to not take as seriously as they might the people management issues facing their own staff” (p. 162).

As mentioned earlier, this study also examined the work environment factors and health status of two occupational groups, professors and administrative support. Professors (academic) and administrative support (non-academic) are common distinctions of occupational groups in post secondary institutions. In this study, the professor occupation group included full, associate and assistant professors. The administrative support occupation group included employees in several types of positions: administrative secretary, clerk, assistant or supervisor; receptionist; library clerk; payroll assistant; admissions or record coordinator and financial and information services coordinator. To date, other than the Whitehall studies conducted in Britain (Bosma, Marmot, Hemingway, Nicholson, Brunner & Stansfeld, 1997; Marmot & Smith, 1991), relatively little research has focused on exploring how employees from different occupational groups within the same organization experience the work environment. The need to understand the specific issues of employees in different occupational categories is important, as this could assist in targeting interventions to improve work environment and health outcomes for specific subgroups of employees (Turnage & Spielberger, 1991).

To summarize, the purpose of this study was to investigate the relationships that three key work environment factors: job demand, job control

and support have with the job satisfaction and health status of professors and administrative support employees in the Faculty of AFHE at the University of Alberta. This thesis includes four additional chapters. Chapter 2 contains a literature review, which provides evidence for the important link that job demand, job control and support have to job satisfaction and health status. Chapter 2 concludes with the research questions this study addressed. Chapter 3 outlines the methods and data analysis for the study and Chapter 4 presents the study results. Finally, Chapter 5 discusses the key findings, recommendations for future research, as well as practice implications for workplace health promotion.

## **CHAPTER 2**

### **Literature Review**

#### **Overview**

The literature review begins with an overview of the evolution of health promotion and workplace health knowledge and practice. This provides a foundation for the conceptualization of workplace health and health promotion practice used in this study. The literature pertaining to the workplace environment factors, job demand, job control and support, is then discussed. Following the discussion of the key workplace factors that will be examined in this study, the research on academic work environments is reviewed to provide context for the study setting. The chapter concludes with a summary of the literature review and identification of the research questions this study addressed.

#### **Health Promotion and Workplace Health Knowledge and Practice**

The origin of health promotion in Canada can be traced to a 1974 federal government report known as the Lalonde Report. The Lalonde Report was a “think piece” announcing the government’s new perspective on health. Essentially the report was the first break from a traditional medical model in that it expanded the conception of health from strictly biological to an interrelationship among biology, environment and lifestyle. The underpinnings of the Lalonde Report can be traced to the work of physician and medical historian Thomas McKeown (1971) and philosopher Ivan Illich (1976). McKeown and Illich challenged the generally accepted view that the decline in population mortality rates were the result of advancements in medicine (Lalonde, 1974,

McKay, 2000) and instead put forward evidence that improvement in food, water, environmental influences and socio-political equality had contributed much more to population health than traditional medicine (Illich, 1976; McKeown, 1971, 1979). On the basis of this evidence, the Lalonde report advocated for a broad conception of health and health care, and established an initial, albeit narrow, conceptualization of health promotion as “informing, influencing and assisting both individuals and organizations so that they will accept more responsibility and be more active in matters affecting mental and physical health” (Lalonde, 1974, p. 66).

The Lalonde report presented a radical approach for the times and was initially mocked and ignored within government circles. However, in the decade following its release the content of the report gained acceptance among health practitioners in Canada and abroad and by 1984 was heralded a ‘world class document’ (McKay, 2000). During this time, at a political and policy level, the definition of health and the purpose of health promotion were being broadened. In 1986, in what is considered an important milestone in health promotion, the Canadian Government, through the Ottawa Charter for Health Promotion, adopted the World Health Organization (WHO) definition of health promotion as “the process of enabling people to gain control over and improve their health” (Epp, 1986, p. 5). The Ottawa Charter reflected the WHO view that health was a personal resource conceptualized as a “complete state of physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 1948). In the early 1990s, responding to a growing body of



evidence, Health Canada (1994) redefined and expanded the determinants of health to include income and social status, social support networks, education, employment and working conditions.

The evolution of workplace health promotion knowledge and practice paralleled developments in the overall field of health promotion. Until the mid-1970s, the field of workplace health was restricted to Occupational Health and Safety, which focused on protecting workers from exposure to hazards such as toxic chemicals and dangerous worksites. During the 1970s and 80s, business and industry began to experience increases in the cost of employee medical care and health insurance, primarily due to increasing stress-related illness and absence (Davidson & Cooper, 1981). This prompted organizations to broaden their interest from occupational health to health promotion, in the hope of finding ways to improve the health and well-being of employees and curb growing medical costs (Bamford, 1995; Danna & Griffith 1999; Lovato, Green & Stainbrook 1994).

Health promotion in the workplace has been an evolutionary process that can generally be demarcated by three phases. In the first phase, workplace health promotion interventions were narrowly focused toward improving the lifestyle choices and habits of employees in such areas as exercise, smoking, weight control, nutrition and stress management (Chu, Breucker, Harris, Stitzel, Gan, Gu, Dwyer, 2000; Polanyi et al., 2000). Health education and social marketing of healthy lifestyles were the strategies underlying these early workplace health promotion efforts (McKay, 2000).

The following limitations or disadvantages of the types of interventions found in the first phase of workplace health promotion have been noted in the literature. First, workplace health promotion practice that is solely focused on changing the health behaviours of employees does not take into account that the source of the problem may not rest with the employee but within the work environment. Explaining and treating problems at the individual level, without considering the social environment, risks shifting the responsibility for work environment issues to the individual employee. If causal factors are at an organizational level, an individual's lifestyle changes may have limited impact on health status, which is affected by more than lifestyle. In addition, behavioural changes tend to be short term without concurrent changes to the social and cultural context that shapes and supports individual behaviour (Gardill, 1982; Ivancevich, Matteson, Freedman & Phillips, 1990; Murphy, 1984).

Since the mid-1980s, concentration on "wellness" and "well-being" marked the second phase in the evolution of workplace health promotion. Wellness programs attempt to be more comprehensive in nature than health education programs (Chu et al., 2000). Interventions found in workplace wellness programs include provision of health screening, attention to nutritional food in workplace cafeterias, exercise programs and/or facilities and health and wellness seminars and training. Programs designed to promote employee health and wellness are now found in an estimated 80 to 90% of medium to large size American organizations, while 55% of Canadian organizations have been found to offer wellness programs to employees (Bachman, 2000; Lowe, 2003). Despite

having a broader range of services than health education, the majority of wellness activities and programs, like the interventions found in the first phase, are still focused on individual behaviour change without regard for socio-economic, environmental and organizational influences on worker health. As with the earlier phase of employee-focused health interventions, a criticism of workplace wellness is that these programs are a reactionary effort by employers to curtail increasing health costs and lost time from illness, without fully considering the sources of these problems (Aldana, 2001).

In the late 1990s and early 2000s, an interdisciplinary approach to protecting and promoting workplace health began to emerge as the third phase in the evolution of workplace health promotion. This approach has developed out of an increased understanding of the multiple determinants of employee health, as well as current societal dynamics that are creating a fundamentally different labour force and workplace (Chu et al, 2000). Such factors as the transition from physical work to knowledge-based work, increased use of technology, globalization of organizational culture and competition, diminishing resources, pressure to do more with less, greater diversity of cultures and work values in the workforce and increased participation of women and highly educated people in the workforce have created unprecedented changes for both employees and organizations (Jaffe, 2001). As these societal shifts have occurred, interest in employee well-being has moved beyond simply a concern for medical costs. Employers are becoming more interested in employee job satisfaction and wellness. This is because they are recognizing that in order to have a viable,

successful organization, it is essential to have healthy and satisfied employees (Buckingham & Coffman, 1999; Jaffe, 2001). Employee job satisfaction is an outcome of employees' attitudes toward their job and work environment and ability to manage job related stressors. The notion of the work environment having impact on employee job satisfaction and well-being, as well as organizational effectiveness, is central to the relatively new concept of organizational health.

The new concept of a healthy workplace describes an environment that invests in its employees' physical and mental health, cares about their general well-being and creates an environment where employees can grow professionally while preserving work-life balance (Wright, 2002). A healthy work organization is now considered as one "whose culture, climate and practices create an environment that promotes both employee health and safety as well as organizational effectiveness" (Lowe, 2003, p.10). Therefore, instead of using the workplace as a convenient location for health professionals to conduct programs aimed at changing individual behaviour, contemporary workplace health promotion advocates that employees and employers work together to address both individual risk factors as well as broader organizational and environmental issues (Chu et al., 2000).

### **Work Environment Study Concepts**

This section outlines the evidence this study was based on by reviewing the literature on job demand, job control and support and the relationships these work environment factors have with job satisfaction and health. In this study,

“job demand” refers to the manageability of workload and ability to balance work and personal responsibilities (Duxbury & Higgins, 2001). “Control” refers to perceptions that employees have of their influence and involvement in decisions related to work responsibilities and authority to make decisions related to their work (Karasek, 1979; Lowe & Schellenberg, 2001). “Support”, refers to overall levels of helpful interaction available on the job (Karasek & Theorell, 1990).

To begin this discussion, the Demand Control Model developed by Robert Karasek (1979) is reviewed. This model has made important contributions to understanding the relationship between work and health. As the model contributes significantly to the understanding of job demand and job control in this study, the model, along with research findings supporting and countering the model are reviewed. Additional job demand and job control literature that supports the importance of these factors is then discussed. The discussion of the social support literature is limited to that which focuses specifically on workplace-related research. In the workplace research, support is commonly differentiated into socio-emotional and instrumental and these are described and discussed.

### Job Demand in the Work Environment

#### The Demand Control Model

The study of job demand and job control originated with the Demand Control Model developed by Robert Karasek (1979). The Demand Control Model stands out as influential in the study of workplace health as it highlights the dynamic nature of a person’s interaction with his/her work environment and

the probability that work characteristics can combine interactively to affect worker health. The model provides an integrative conceptual framework for the study of occupational stress and its use has contributed significantly to the empirical foundation supporting the relationships among work, stress and health (Karasek, 1979; Muntaner & O'Campo, 1993; Parker & Wall, 1998).

The Demand Control Model hypothesizes that the interaction of the two key work dimensions, psychosocial demand and control, impact an individual's level of well-being and the quality of his/her working life (Karasek, 1979). The job demand dimension refers to the amount of work, the proportion of work performed under time pressure, the level of concentration required, the presence of conflicting demands and how often tasks are interrupted or work is slowed by having to wait for others (Karasek, 1979; Muntaner & O'Campo, 1993; Parker & Wall, 1998). The control dimension has two main components: skill discretion and decision authority. Skill discretion is the degree to which the job contains varied or repetitive tasks, involves learning new things, allows for creativity and develops the individual's abilities. Decision authority, refers to the individual's opportunity to make decisions about his/her own job, influence the work group, and influence company policy (Karasek, 1979; Muntaner & O'Campo, 1993).

The Demand Control Model predicts that mental or psychological strain can result from the interaction of the demands of the work situation and the range of control available to the worker facing those demands. The model categorizes jobs into four types: 1) passive jobs have low demand and low control; 2) high strain jobs have high demand and low control; 3) active jobs have high demand

and high control; and 4) low strain jobs have low demand and high control (Karasek, 1979; Parker & Wall, 1998). The Demand Control Model is illustrated in Figure 1 (Karasek, 1979).

		Job demand	
		Low	High
Job control	Low	Passive Job	High Strain Job
	High	Low strain Job	Active Job

Figure 1: The Demand Control Model

Karasek (1979) postulated that high job strain (created by high demand, low control) directly contributes to the development of coronary heart disease via psycho-physiological mechanisms, and sometimes indirectly by leading to an increase in traditional risk factors such as smoking or poor nutrition, due to increased job strain. Conversely, the Demand Control Model predicts that those engaged in active jobs, where job demand is high, but control is also high, will experience conditions of learning and growth, which are factors associated with high productivity. Such jobs, while intensely demanding, involve workers in activities over which they feel a large amount of control and the freedom to use all of their skills.

Initial research of the demand-control variables occurred in 1979 when Karasek undertook a secondary analysis of survey data to test the hypothesis that job demand and job control interact to influence individual well-being and quality of working life. Karasek (1979) analyzed data from large samples of American

and Swedish working populations to conclude that it is primarily workers with jobs simultaneously high in job demand and low in control (high strain) who report exhaustion after work, trouble awakening in the morning, depression, nervousness, anxiety and insomnia. These workers were particularly likely to report poor health and low job satisfaction. Additionally, those in high strain jobs were disproportionately represented on cardiovascular and mortality outcomes. Conversely, those in active jobs reported better health status, and Karasek and Theorell (1990) reported that research from both Swedish and American samples demonstrated that this group of workers is the most active in leisure and activity outside of work, in spite of heavy work demands.

By 1990, Karasek and Theorell concluded that job strain could contribute to the statistical risk of coronary heart disease. They explained that when the objective requirements of a situation cannot be routinely met, any one of a full range of unintended outcomes might occur, ranging from simple symptoms of fatigue to basic personality breakdown. In the long term these outcomes can lead to related illnesses like heart disease (Karasek & Theorell, 1990).

The Demand Control Model is one of the most popular models in the field of public health relating job design to occupational stress, and has therefore been researched extensively. Overall the findings of research confirm that those in high strain jobs (high demand, low control) are at high risk for occupational stress, job dissatisfaction, poorer perception of health, and for developing health problems (Schechter, Green, Olsen, Kruse & Cargo, 1997).



### Critique of the Demand Control Model

Ongoing research has identified limitations with the Demand Control Model. The most debated aspect of the Demand Control Model in the academic literature concerns the existence of the proposed interaction effect between the demand and control dimensions. The practical implication of the interaction hypothesis is important because it implies that as long as job control is increased, one can increase demands without incurring detrimental effects to employee well-being. Overall, research that supports such an interaction effect is, at best, modest and inconsistent (Carayon, 1993; Spector, 1987; Warr, 1990). Warr (1990) stated that “despite the intuitive appeal, there is lack of supportive evidence” (p.285) for an interaction effect. An alternative suggestion by Warr, titled a “vitamin model” is based on the analogy that vitamins are required for health up to, but not beyond, a certain level. After attainment of that level, increased vitamin intake can be harmful. A similar pattern can be envisaged in the relationship between job demand and control as related to employee well-being. We can expect the job demand and control dimensions to be a non-linear relationship, with a mid range plateau of most beneficial impact, and decrements in well-being found at extremely low or high values of the job characteristic (p. 286). Carayon (1993) and Spector (1987) concluded from literature reviews and research conducted with office workers that, while the job demand and control dimensions were related to outcome variables like job satisfaction, anxiety and frustration, there was no evidence that control moderates the negative effect of high demand

(interaction effect). Instead, job demand and control were best examined as distinct variables.

Another critique of the Demand Control Model is that its relative simplicity obscures some of the necessary complexities of understanding the work environment – health relationship. Karasek's (1979) original research was with a heterogeneous sample representative of the spectrum of occupations in the working population of the United States and Sweden. With such a diverse sample, it becomes very difficult to pin down which aspects of a work environment contribute most to the variance of outcome scores. For example a question like, "Is your job hectic?", asked to an assembly line worker and a doctor would likely be tapping entirely different elements of work demands (Carayon, 1993). In addition, Warr (1990) and Carayon (1993) found that the relationship between job demand and control and health is more complex than specified in the Demand Control Model because these work environment characteristics impact different dimensions of health. For example, Warr (1990) investigated the Demand Control Model and found that job demand was more closely associated with job related anxiety-contentment whereas control was more closely associated with depression-enthusiasm. This study also found that job satisfaction was more closely associated with control than with job demand. Carayon, (1993) also reported that job demand – control had differential associations with the physical and psychological components of health. This study reported that control was related to mood states (tension-anxiety and depression) while job demand was more related to daily life stress and physical health symptoms.

While the Demand Control Model makes substantial contributions to understanding the relationship among job demand, job control and employee health, the academic research seems to provide limited support for the interaction effect of job demand and control. Thus, although the Demand Control Model is relevant to the foundation of this study, job demand and job control were considered as distinct variables.

### Workload and Work-Life Balance

To augment the literature review of job demand in relation to the Demand Control Model, the literature on role overload and work-life balance is reviewed in this next section. A recent Canadian study by Duxbury and Higgins (2001), which provides information pertaining to role overload and work-life balance (job demand) on the Canadian working population, is first reviewed. This is followed with a discussion of research pertaining to the impact of prolonged work hours on health. This section concludes with a discussion of explanations found in the literature for the finding that workload and hours of work are increasing in the contemporary workplace.

Duxbury and Higgins (2001) compared data collected in 1991 and 2001 to answer the question: "Has work-life balance become more difficult for Canadians over the decade?" The 2001 sample (n=31,571) included employees from the public (federal, provincial and municipal governments), not-for-profit (defined in this study to include organizations in the health and education sectors) and private sectors. In total, 100 companies with 500+ employees participated in the study. The study examined the concept of job demand from a work-life conflict

paradigm. Work-life conflict has three components: 1) role overload (having too much to do); 2) work to family interference (e.g. long work hours, inflexible work schedules, heavy work demands, which limit an employee's ability to participate in family roles and functions); and 3) family interference (family demands prevent individual from attending to work requirements). The study defined work-life conflict as occurring when the time and energy demands imposed by all the roles an individual has are incompatible, so that participation in one role is made more difficult by participation in another.

Duxbury and Higgins (2001) concluded that work-life conflict, particularly from role overload, has increased markedly in the last decade. Whereas one in ten respondents in 1991 worked 50 or more hours per week, one in four does so now. The study reported that a substantial proportion of Canadians who work for large organizations regularly engage in working additional unpaid hours at work and at home. The trend observed with respect to time at work and overtime work suggests that it has become more difficult in the past decade for Canadian employees to meet work expectations during regular work hours. The increase in time at work was observed for all job groups and all sectors, but overtime demands especially appeared to be onerous for management and professional staff in the not-for-profit sector that included health care, education and public service organizations.

The trend of increasing workload and hours of work found by Duxbury and Higgins (2001) is especially of concern when considered with their research findings on the impact of these factors on employees and employers.

Respondents experiencing high role overload and high work to family interference were significantly less committed to their employer and tended to be less satisfied with their jobs (Duxbury & Higgins, 2001). They also reported much higher levels of job stress, were more frequently absent from work, made more use of employee assistance programs and more frequently gave serious consideration to quitting their job (p. vii).

In addition to evidence that a growing proportion of Canadians are working longer hours, a small body of research has specifically examined the health implications of long work hours. Sparks, Cooper, Fried and Shirom (1997) conducted a meta-analysis of literature on long work hours and found a negative relationship between prolonged work hours and employee mental and physical health. In addition, employees who work long hours are more prone to engage in poor lifestyle habits, such as heavy smoking, inadequate diet and lack of exercise, all behaviours that can contribute to health problems. This study, referenced results of the 1998 British Panel survey, a longitudinal study that involved 5000 households which showed health problems were particularly evident in employees who worked persistently long hours over a five-year period. Such individuals reported higher blood pressure, more problems with their limbs, more chronic headaches and sleepiness than those working shorter hours. Moreover, these health problems persisted even after a reduction in work hours, suggesting that some health impairments are irreversible (Sparks et al., 2001).

Longitudinal data from the 1994/95 and 1996/97 National Population Survey was examined by Shields (1999) to determine if long work hours were

associated with unhealthy lifestyles (Shields, 1999). The basis for this research was the “karoshi” hypothesis primarily derived from case study information from Japan which showed that many workers who had died from cardiovascular causes also worked long hours before their deaths. The Japanese named such deaths “karoshi” meaning “death from overwork.” The karoshi hypothesis postulates that long hours of work over time, are associated with unhealthy behaviours such as poor nutrition, lack of exercise, smoking, alcohol abuse, as well as heightened anxiety and strain. Over time the cumulative effects of a lifestyle of long work hours and poor health behaviours can lead to cardiovascular disease. In testing the “karoshi” hypothesis, Shields (1999) found that long work hours (over 41 hours/week) were associated with higher levels of education and being in a white-collar occupation, and that long work hours were connected to certain negative health behaviours. Both men and women working long hours had a higher likelihood of increased smoking. Men had a higher likelihood of unhealthy weight gain, while women had a higher likelihood of increased alcohol consumption and experiencing a major depressive episode.

From an organizational perspective, a commonly held perception is that a reduction in work hours would mean decreased productivity and financial losses. Although the research is limited, studies have shown that a loss of efficiency occurs with prolonged work hours beyond 50 to 60 hours per week. The conclusion that emerges is that reducing long work hours would not adversely affect productivity and conversely would reduce costly ill effects to health (Sparks et al., 2001).

A variety of explanations have been postulated in the literature to explain findings that workload and hours of work are increasing in the contemporary workplace. Generally these explanations are related to downsizing, culture, and technology. During the 1990s, in response to the economic downturn, Canadian companies “downsized, delayed, re-engineered, redeployed and reskilled workers” (Duxbury & Higgins, 2001, p. 9). For example, in a 1998 international survey, 49% of Canadian respondents reported that their organization had downsized in the last five years (Lehmkuhl, 1999). Although corporate downsizing resulted in fewer employees, the work that needed to get done did not diminish. This meant that those remaining employees were left with larger workloads and increased demands. In addition, while organizational downsizing activities of the 1990s reportedly disintegrated the loyalty and trust that remaining employees had in their organization, it also created heightened perceptions of job insecurity. These factors contributed to the creation of organizational cultures where working long hours are equated to commitment and is valued and expected within the culture. Duxbury and Higgins (2001) also stated that the speed of change many organizations currently experience results in a lost ability to plan and prioritize, and ultimately in workload increases and an environment of crisis management. Finally, technological change has altered the way in which work is done. While technology has brought a powerful resource to the workplace, it also contributes to continual and rapid change and an accelerating work pace (Johnson et al., 2001; Lehmkuhl, 1999). Overall the conclusion Duxbury and Higgins

(2001) came to in the Canadian Work-Life Balance study is that the heavy workloads found in 2001 will not be sustainable by employees over the long term.

### Control in the Work Environment

This section expands upon the earlier discussion of control, by reviewing research that has studied control from a different framework than the Demand Control Model. A clear consensus found in the workplace health literature is that control over work tasks is an important determinant of health and well-being (Ganster, 1989; Sparks et al., 2001). However, because the supporting evidence for this conclusion is difficult to discern and synthesize, this section begins by outlining these difficulties. A review of workplace health research that included control as a study variable follows. This section concludes by discussing recent literature that suggests that in the contemporary workplace, employee control over their work lives is eroding.

There are two major challenges to synthesizing research on control. First, within workplace health research, different terminology such as control, autonomy, and influence are used to identify the construct. Subsequently, different theoretical definitions are used to conceptualize and study control. Recall that the Demand Control Model defines control as containing two main components. The first component, skill discretion, is the degree to which the job contains varied or repetitive tasks, involves learning new things, allows for creativity and develops the individual's abilities. The second component, decision authority, measures the individual's abilities to make decisions about his/her own job, influence the work group, and influence company policy



(Karasek, 1979). Similar to decision authority, another common definition is derived from the Job Characteristics Model developed by Hackman and Oldham (1980). This model discusses control as job autonomy, which is defined as the degree to which the job provides substantial freedom, independence and discretion to the individual in scheduling work and in determining the procedures to be used in carrying it out (Parker & Wall, 1998). More contemporary research has examined control under the terminology of influence. Lowe and Schellenberg's (2001) study of 2500 working Canadians defined influence as having a say in decisions affecting one's work, including discretion over work schedules and how the work gets done.

The second challenge pertaining to a review of the control research is that it is difficult to isolate and study this construct separately from other work environment constructs (Kasl, 1998). Recall that the Demand Control Model posits that the interaction between job demand and control creates the effect of job strain. While the academic research generally does not support an interaction model, control has not been studied in isolation from other work environment variables. It is therefore difficult to discern the independent effect of control.

In the workplace environment literature, discussion of the construct of control generally falls under two broad categories: 1) participatory decision making, also conceptualized as management style; and 2) job design (Ganster, 1989; Isreal, House, Shurman, Heaney & Mero, 1989). Participatory decision making research studies the degree to which employees are able to be involved and participate in decision making. Job design focuses on how work is organized

and structured to allow employees to control or influence what happens in their jobs. Research findings on participatory decision making reveal that it is not participation per se, but the perceived influence that results from participation that is consequential for occupational stress. Research into the antecedents of job satisfaction support the concept of influence being a primary predictor of satisfaction and that the effects of participation are mediated almost entirely through satisfaction with influence (Isreal et al., 1989).

In general, the academic research, which included control as a study construct, support the view that the extent to which employees are able to exert control over their lives at work will significantly affect the experience of work stress and the relationship between stress and health (Ducharme & Martin, 2001; Gardill, 1982; Isreal et al., 1989). Isreal et al. (1989) conducted a study to examine a range of psychosocial factors in the workplace and concluded that the strongest net predictors of global job stressors are dissatisfaction with influence at work and negative relations with co-workers and supervisors.

A classic example of research that underscores the relationship between control and health outcomes, are the British cohort studies, known as Whitehall I and Whitehall II. These studies began in the 1960s and followed two large cohorts of British civil servants to examine the relationships among lifestyle, biological risk factors and subsequent disease and to examine differences between occupation groups. Whitehall I reported findings that employees in lower levels of the organization were at greater risk of suffering from heart disease than those at higher levels. A surprising finding of the study was that, even after lifestyle and

risk factors like physical activity, smoking, and cholesterol were controlled for, the gradient differences remained. The Whitehall II studies were designed to investigate the reason for the health outcome differences between occupation gradients. Whitehall II study identified “job control” as the important psychosocial factor to explain the difference in health outcomes between occupation gradients. Employees at lower levels of the British civil service who reported they had little control over their work and job were at greater risk of disease than those at higher levels who reported they had higher levels of control (Bosma, Marmot, Hemingway, Nicholson, Brunner & Stansfeld, 1997; Marmot & Smith, 1991).

A recent Canadian study by Lowe and Schellenberg (2001), which examined the question “What is a good job?” came to the conclusion that the social-psychological dimensions of trust, commitment, influence and communication are the essential ingredients. Recall that Lowe and Schellenberg (2001) defined influence (control) as having a say in decisions affecting one’s work, including exercising discretion over work schedules and how the work gets done. While Lowe and Schellenberg did not examine the work environment-health link, their study showed that employees who reported strong employment relationships, of which influence was an essential ingredient, also reported good morale in the workplace and more opportunity to develop and use their skills and abilities. Those reporting weaker employment relationships were more likely to be looking for another job and reported more absenteeism than did employees in strong relationships (Lowe & Schellenberg, 2001)

Despite information that control is positively related to job satisfaction and health status, indications emerging in recent literature are that employees, particularly “white collar” professionals, may be experiencing a gradual erosion of control over their work lives and careers. One indication of eroding control emerges from the Canadian Work-Life Balance research conducted by Duxbury and Higgins (2001). For example, a finding of this study reported that between 1991 and 2001, the span of control for employees who supervise others has increased dramatically. In 1991, a typical manager had an average of 6 direct reports and by 2001 this had increased to an average of 20 direct reports. Such dramatic changes to work expectations that are based largely on conditions beyond the control of the employee, such as downsizing and restructuring of work environments, are being linked to eroding employee perceptions of control. Traditionally, management positions have been associated with higher degrees of control, but recently this seems to be undergoing change. Currently, speculation in the literature is that, with rapid change, caused by advances in technology and the restructuring and downsizing of organizations, employees are experiencing heightened perceptions of job insecurity and increased pace of work, which in turn erode control perceptions (Sparks et al., 2001).

#### Support in the Work Environment

This section discusses the final work environment variable in this study: support, delineated into socio-emotional and instrumental support. Social support was included in this study because it is an important health determinant (Health Canada, 1994) and research finds that people with social supports that provide

them with psychological and material resources are in better health than those with few supportive contacts (Cohen & Willis, 1985). Specific to workplace research, the literature concludes that social relations in the workplace make a key contribution to job satisfaction, productivity and well-being (Ducharme & Martin, 2000). This section begins by defining two types of social support, socio-emotional and instrumental, commonly delineated in workplace research. The academic literature pertaining to the socio-emotional and instrumental support and job satisfaction and health follows. As supervisory support, in particular, has been found to have a strong relationship with job satisfaction and well-being, the literature review and current study focused on this aspect (Buckingham & Coffman, 1999; Jones et al., 2001; Lobban et al., 1998).

Within workplace health literature, social support generally refers to overall levels of helpful interaction available on the job and is usually delineated into socio-emotional support and instrumental support. Socio-emotional support refers to the degree of social and emotional integration and trust among co-workers, supervisors and others. It may also be measured by degree of social cohesion and integration in the overall work group. Instrumental support refers to the provision of resources or assistance with work tasks (Cohen & Willis, 1985; Ducharme & Martin, 2000; House, 1981; Karasek & Theorell, 1990).

The most common form of socio-emotional support discussed in the literature is supervisory support, followed by co-worker support. Supervisory support is focused on to a greater extent, as it has been found to have both a buffering effect and a direct effect on stressful working conditions. In a buffering

effect, support intervenes between stressful events and stress reactions, thus protecting the individual from potentially pathogenic influences of stress. The perception that others (supervisor) can, and will, provide necessary resources may redefine the potential harm posed by a situation and/or bolster one's perceived ability to cope with imposed demands, and prevent a particular situation from being appraised as highly stressful (Cohen & Willis, 1985). In a direct effect, social support has a beneficial effect irrespective of whether the person is under stress. In a direct effect social support contributes to overall well-being by providing positive affect, a sense of predictability and stability in one's life situation, and recognition of worth (Cohen & Willis, 1985).

Research provides evidence of the importance of both the buffering and direct effects of socio-emotional supervisory support. Supporting a buffering hypothesis, Lobban, Husted and Farewell (1998) reported that when perceived or objective workload was high, support from supervisors moderated the stressful effects of the workload. Supporting a direct effect hypothesis, research conducted by Jones, Flynn and Kelloway (2001) showed that workers tend to be more satisfied and committed when their values are congruent with those of their supervisor. Congruence of values is likely to be a feature of supervisors that employees perceive as supportive. Furthermore, the attitude of the supervisor directly influences the propensity of workers to show discretionary civic behaviours, such as courtesy, that may not be formally rewarded but that clearly influence the environment in a positive manner (Jones, Flynn, & Kelloway 2001).

Researchers generally agree that the quality of the relationship between a supervisor/manager and employee is a key determinant to employee commitment and job satisfaction (Buckingham & Coffman, 1999; Lobban et al., 1998; Wright, 2001). Sargent and Terry (2000) found that supervisory support enhanced job satisfaction of those working in active jobs (high demand, high control). Furthermore, in conditions of low control, those who reported high supervisory support reported higher job satisfaction than those without support. Results of a Gallop survey (Buckingham & Coffman, 1999) that reportedly polled over a million employees from a broad range of industries and countries on the question “What do the most talented employees need from their workplace?” concluded that support provided by supervisors or managers is particularly critical to individuals and organizations. The Gallop results reported that the most significant factor determining retention and productivity was the employee’s relationship with the immediate supervisor/manager. The research concluded that six powerful questions asked from the perspective of an employee determine the strength of a workplace. These questions are:

1. Do I know what is expected of me at work?
2. Do I have the materials and equipment I need to do my work right?
3. At work do I have the opportunity to do what I do best every day?
4. In the past seven days have I received the recognition or praise for doing good work?
5. Does my supervisor or someone at work seem to care about me as a person?
6. Is there someone at work who encourages my development?

All six questions are related to socio-emotional or instrumental support in the workplace. Question 2 confirms the importance of instrumental support while the remaining questions are all related to supervisory behaviour and support. The conclusion of the Gallop study is that the supervisor/manager has a powerful and key role in creating a supportive work environment (Buckingham & Coffman, 1999).

Instrumental support, which refers to the provision of resources and assistance, is discussed less than socio-emotional support in the literature. However, Lowe and Schellenberg's (2001) study on employment relationships, conducted with 2500 employed Canadians, confirmed the importance of instrumental support. Lowe and Schellenberg found that the second most important ingredient of a strong employment relationship was receiving the resources needed to do a job well. The study concluded that the provision of training, equipment and information might signal to employees the organization's commitment to them, inviting reciprocity. Resources are likely to make workloads (demand) more manageable and enable workers to be more productive. Moreover, having the resources needed to do an effective job makes it easier for workers to achieve organizational goals with a resulting sense of accomplishment and efficacy, which in turn strengthens employment relationships (Lowe & Schellenberg, 2001).

In general, Lowe and Schellenberg's (2001) findings support the importance of job demand, control and support in the work environment. They reported that reasonable job demands, helpful and friendly co-workers, interesting



work, perceptions that the workplace was healthy and safe, and organizational support in balancing work with personal life were factors correlated to strong employment relationships. Strong employment relationships were found to be associated with job satisfaction. The study found that the quality of employment relationships was considered even more important than pay and benefits. Those who reported strong employment relationships also reported good morale in the workplace and more opportunity to develop and use their skills and abilities. Those reporting weaker employment relationships were more likely to be looking for another job and reported more absenteeism than did employees in strong relationships.

### **Overview of Research on the Work Environment in Academic Settings**

This section provides a summary of the literature specific to work environment issues in academic settings. This review is primarily focused on professors as most of the research pertaining to academic settings has studied this group as the target population. One study that compared the professor and administrative occupational groups is reviewed and the section concludes with a review of the Workplace Wellness initiative and research project that was conducted at the University of Alberta (1998).

Academic work environment research is relatively limited and the research conducted to date has primarily focused on investigating and identifying the determinants of stress. Overall, academic work environment literature concludes that academic work is stressful and the determinants of this stress are primarily linked to workload demands (Kinman, 2001). The links between work

demands and stress in academic work environments generally pertain to such factors as time constraints, multiplicity of demands and work-life balance (Abouserie, 1996; Bailyn, 1993; Doyle & Hind, 1998; Gmelch, Lovrich & Wilke, 1984).

One of the first large scale American studies to focus attention on academic work settings identified workload as a considerable source of pressure for academic staff (Gmelch et al., 1984). This study explained the workload issues from both a time constraint and time commodity perspective. Time as a constraint refers to work overload or having too much to do in the time available. Time as a commodity pertains to the hours spent on the job. Gmelch et al. (1984) found that time constraint was a significant source of stress and this perspective has frequently been explained by the multiplicity of demands faced by academics. Bailyn (1993) describes the multiplicity of demands as the competing activities of teaching, research, administrative and community responsibilities. Abouserie (1996) and Doyle and Hind (1998) investigated stress, job strain and job satisfaction for academics in the United Kingdom (UK) and reported that the greatest stressors reported by academics were workload demands and time pressures. Abouserie (1996) found that conducting research emerged as a main source of pressure for academics because of the increasing demand for research and the competitive atmosphere among staff, both within and among departments. Doyle and Hind (1998) reported that the factors causing work pressure for academic staff include lack of time for teaching preparation, conflict between personal and departmental goals, inadequate salary, securing financial support for

research, excessively high self expectations and work-personal life conflicts. Doyle and Hind (1998) found that respondents felt that their workloads had increased in the five years prior to the study and that the highest increase was reportedly from administrative responsibilities. This meant that respondents felt they were spending an increasing amount of time on aspects of their work that they considered to have minimal importance. The respondents in the Abouserie (1996) and Doyle and Hind (1998) studies also provided information that suggested conflict between personal and perceived departmental and institutional priorities. Respondents in both studies reported both research and teaching competence as the most important aspects of their work, while they felt their departments and institutions gave higher priority to research (Abouserie, 1996; Doyle & Hind, 1998).

When examining workload issues from a time-as-a-commodity perspective, Gmelch et al. (1986) reported that the average professor spent 50-60 hours per week, not including time spent reading in one's field or reflecting on academic matters, and noted that longer hours spent on the job are associated with higher levels of reported stress. Other findings seem to indicate a trend toward increasing work hours by academics. Bailyn (1993) reported the median workload is almost 60 hours per week and more than 10% of academics in this sample reported spending up to 75 hours on professional work. Kinman (2001), who conducted a literature review of research on occupational stressors and strains, also reported that more recent study findings indicate that academics are working considerably longer hours in recent years, that evening and weekend

work was becoming more commonplace and that compared to other professionals and community samples, academic staff experience less job satisfaction and extremely low levels of psychological health. The increasing work hour trend has also been supported by Duxbury and Higgins (2001) in their Canadian Work-Life Balance research. Recall the findings that in the period of 1991-2001, Canadians moved toward longer work hours and taking more work home. This study noted particularly onerous work hours in the not-for-profit sector, which included eight universities and colleges.

In addition to workload demands, another commonly identified problem in academic settings is work-life balance. Bailyn (1993) stated “the combination of the multiplicity of demands and the mental overload from activities that produce new knowledge profoundly affects the ability of professors to combine work with satisfactory and meaningful personal lives” (p. 50). Bailyn (1993) explained that the “highly absorptive” nature of academic work in combination with an internalized set of complex demands creates inherent difficulties in achieving work-life balance. Other research findings seem to confirm this. Mcinnis (1998) compared results from an Australian national survey of academics with a survey conducted with university professional administrators. Mcinnis’ findings showed that a third of academics perceived that their job had deteriorated in the previous five years and that over half (53%) of the academics reported that they subordinated most aspects of their lives to their work and indicated that they saw their job as a source of considerable stress.

Anderson, Morgan and Wilson (2002) examined the difference between corporate and university employees' perceptions of their respective organizations' work-life balance policies and practices. The corporate sample came from 37 companies listed in Business Week 1000, which ranks companies based on market value, while the University sample came from a Midwestern U.S. university. The university (81%) and corporate (76%) sample gave similar responses to the question "Overall, do you enjoy what you do on your job?"; however the groups differed significantly on most other items. The most noticeable difference was the finding that only 41% of the university sample endorsed, or strongly endorsed, the notion that their organization recognized and respected people's family responsibilities, compared to 69% of the corporate sample. University employees were also less likely than corporate employees to see their work-life as positively impacting their home life.

To complete the review of work environment issues pertaining to academic staff Thomson (1996) investigated the nature and extent of occupational stress in a sample of Ontario professors. Thomson (1996) reported differential results pertaining to job stress based on age, tenure, rank and gender. Results of this study showed that stress declined with age and experience, with tenure and with increasing rank (i.e. assistant, associate, full professorship). In addition, Thomsen (1996) found gender differences with women academics experiencing more stress than their male counterparts.

I was only able to find one workplace study that compared clerical workers and University professors. Narayon, Menon and Spector (1999)

examined and compared stress experiences across three occupational groups: clerical workers, university professors and sales associates. The common stressors for the three occupational groups were work overload, interpersonal conflict and time wasters. However, the clerical employees reported that lack of control or autonomy was the greatest source of stress, while those in the academic group reported interpersonal conflict and time/effort wasted as their greatest source of stress.

To conclude the review of work environment research in academic settings is a 1998 University of Alberta Workplace Wellness initiative and research project. This was a qualitative research project that utilized focus groups, representing nine occupational groups, to identify University of Alberta staff perspectives regarding workplace wellness needs and improvement actions. Despite the diversity of occupational groups that included administrators, librarians, building services staff, deans/chairs, faculty members, physical plant staff, representatives from the staff associations, supervisors and technical staff, the focus groups identified three key areas for improvement actions that would benefit all occupational groups. Consistent with the research findings previously outlined, the improvement actions address job demand, job control and support and are as follows:

- **Managing better:** The needs are to develop and support managers/leaders at all levels, to have a participative/flexible management style, to organize work within the existing resources effectively, to make sound decisions and to manage staff performance effectively. On an individual basis the needs are to recapture personal balance and to enhance skills to deal with and lead change.
- **Improving communications and rebuilding community:** The needs are related to the skills of communicating well on an interpersonal level,

within faculties with all levels of staff and across campus. In rebuilding community the needs are to demonstrate respect and recognition of people/achievements and to meet staff social needs.

- Improving environment/safety: The needs are to promote personal control and to responsibility for work environments and to be responsive to concerns regarding space, buildings and equipment (You Said Workplace Wellness... We Listened; A Report on Staff Perspectives Regarding Workplace Wellness, 1998, p. 2).

## **Summary**

A literature review of academic research into work environment and employee health is a multidisciplinary undertaking drawing from health, psychology, sociology and business. The literature is extensive and the challenge is finding convergence in conclusions. The convergence reached in this literature review supports a hypothesis that job demand, job control and support impact job satisfaction and employee health. However, research examining these factors in relation to health within an academic work environment is limited and has primarily been conducted to investigate and identify occupational stressors. Workloads, multiplicity of demands, and work-life balance are the commonly identified occupational stressors identified by academics. While the studies describe the academic work environment, there have been no investigations of job demand, job control and support, in academic settings. As noted throughout this literature review, these factors have been identified as important for employee health in corporate settings. In addition, recent research is indicating that, in response to societal change, workplace changes have heightened job demand and eroded job control, with potential negative consequences for employee health. By investigating the job demand, job control and support of two occupational groups in the Faculty of AFHE at the University of Alberta, this study will enhance

understanding of the current academic work environment and offer information that could potentially contribute to workplace health promotion practice in this and other settings.

### **Purpose of the Study**

The overall purpose of this study was to investigate the relationships among job demand, job control, support, job satisfaction and health of professors and administrative support staff in the Faculty of Agriculture, Forestry and Home Economics at the University of Alberta. The following research questions were posed:

1. What are the levels of job demand, job control, support, job satisfaction and health status for professors and administrative support staff in the Faculty of Agriculture, Forestry and Home Economics?
2. What are the similarities and differences between professors and administrative support staff in job demand, job control, support, job satisfaction and health status?
3. What are the relationships among work environment (job demand, control and support), job satisfaction and health status?



## CHAPTER 3

### Methods

#### Study Design

This study was a secondary analysis of data gathered through a cross-sectional employee survey conducted in 2001, in the Faculty of Agriculture, Forestry and Home Economics (AFHE) at the University of Alberta. This is a multi-disciplinary faculty which includes applied nutritional, biological, environmental and social sciences. The current study received approval from the AFHE Human Research Ethics Board in June 2003.

The original survey, entitled “Employment Equity and Workplace Climate,” was sponsored and conducted on behalf of the faculty Equity Committee. The Equity Committee includes representatives from all employee groups and all departments in the faculty and is guided by the mandate to “work with staff and students to foster an equitable and respectful environment for all persons in the faculty” (Faculty of AFHE Equity Committee Terms of Reference, 2000).

#### Overview of Initial Study

I developed the original survey tool during a graduate-level survey methods course with input from the Equity Committee, a representative of the University’s Organizational Effectiveness branch of Human Resources, the Dean and Department Chairs. The tool was pretested for clarity of content with 8 volunteers from another faculty’s Equity Committee and necessary revisions were made. The AFHE Equity Committee gave final approval of the survey tool.

For the most part, the survey tool (Appendix A) used a five point Likert scale where “1” = strongly disagree and “5” = strongly agree. The constructs measured by the Likert scale questions included employment equity knowledge; hiring and promotion fairness perceptions; physical environment; safety; availability of human and material resources; performance feedback and evaluation; purpose and recognition; communication; involvement and control; learning and advancement; supportive relationships; workload; job security; work/life balance; job satisfaction and health status. In addition, the survey included five open-ended opportunities for respondents to elaborate on Likert-scaled questions and two open-ended questions to solicit feedback about workplace strengths and weaknesses. The survey also collected demographic data about occupational group; department; employment status (full or part-time); source of position funding (operational or trust); age; marital status; caregiving responsibility for dependants; education; income and whether the respondent belonged to a group included in employment equity legislation (Aboriginal person, visible minority group and/or person with a disability).

The Employment Equity and Workplace Climate survey was approved by the AFHE Human Research Ethics Board and was subsequently distributed, in April 2001, to 330 employees identified by the Dean’s Office as the entire population of full and part-time employees. The distribution of the survey comprised several steps that are outlined below.

1. Two weeks prior to the distribution of the survey, the Dean sent an e-mail to all employees in the faculty inviting them to participate (Appendix B).

2. A copy of the survey, a covering letter requesting participation and an information sheet (Appendix C) were mailed to all employees at their campus addresses. The covering letter encouraged a quick response by offering a prize draw for those employees who responded within two weeks. Prizes included dinner at the Faculty Club and University of Alberta sweatshirts.
3. Two weeks after the survey was distributed, the Chair of the Equity Committee sent an e-mail to all employees requesting that those who had not completed and returned the survey do so as soon as possible (Appendix D).
4. Four weeks after the survey was distributed, the Chair of the Equity Committee e-mailed a final request to all employees to complete the survey (Appendix E).

The Population Research Laboratory at the University of Alberta was contracted by the Equity Committee to receive the survey, administer the prize draw and enter and clean the data in a statistical data analysis program. To protect anonymity, respondents did not identify themselves and the Population Research Laboratory shredded hard copies of the survey after the data were entered into the computer program. The raw data were provided on disc to me, and I conducted descriptive data analysis for the Equity Committee.

The original survey was completed by 157 employees resulting in an overall response rate of 47.5%. The breakdown and description of occupational groups from the original survey are illustrated in Table 1.

Table 1: Survey Response Rates by Occupation Group

<b>Occupation Group</b>	<b>Number of surveys distributed</b>	<b>Number of survey respondents</b>	<b>Response rate (%) by occupation group</b>
Non-Academic	166	73	44 %
- Administrative	42	25	60 %
- Technical/Information	124	44	36 %
- No response	-	4	-
Academic	164	84	51 %
- Full professor	56	35	63 %
- Associate professor	18	11	61 %
- Assistant professor	17	11	65 %
- Sessional instructor	15	2	13 %
- Research associate/ Project manager	29	10	35 %
- Post-doctoral fellow	15	3	20 %
- APO, FSO, other manager	11	12	*100 +
<b>Total Survey</b>	<b>330</b>	<b>157</b>	<b>47.5</b>

\*Note: Indicates some respondents categorized their occupational status differently than categorized by the Deans office. Likely the result of respondents categorized as professors who responded to “other manager” category.

### Sample of Current Study

The current study limited the sample to respondents who identified themselves as either professors (including full, associate and assistant) or administrative employees. These groups were chosen for occupational comparison. The distinct difference in the job responsibilities of professors and administrative support staff lends itself to comparison and analysis of work environment factors, job satisfaction and health status between occupational levels. In total, 91 professors and 42 administrative support staff received the survey. The response rate for professors was 62.6 % (57 respondents) and 59.5 % for administrative support staff (25 respondents).

### Socio-Demographic and Work Environment Measures

The socio-demographic characteristics examined in this study are gender, age, education, income and length of employment. Gender, age, education, and

income are included as they are common demographic variables used to describe samples in the workplace health promotion literature and have also been associated with health status (Health Canada, 1994). Length of employment was also included as it can affect employees'/respondents' extent of knowledge of the workplace. Table 2 outlines the socio-demographic characteristics and the measures used in this study.

Table 2: Socio-Demographic Characteristics Measured in Survey

Socio-Demographic Characteristic	Measure
Gender	Are you? 1. Male 2. Female
Age (years)	How old are you?
Education	What is the highest level of education that you have completed?
	1 Less than high school 5 Bachelors degree
	2 High school diploma 6 Master's degree
	3 College diploma/certificate 7 Ph D
	4 Trade school 8 Other
Income	What category represents the income you receive from your employment at the University of Alberta?
	1 Less than \$10,000 6 \$50,001 - \$60,000
	2 \$10,001 - \$20,000 7 \$60,001 - \$70,000
	3 \$20,001- \$30,000 8 \$70,001 - \$80,001
	4 \$30,001 - \$40,000 9 \$80,001 - \$90,000
	5 \$40,001 - \$50,000 10 Over \$90,000
Length of Employment (yrs)	How long have you been employed at the University of Alberta?

The work environment constructs of interest in this study were job demand, control and support. The conceptual definitions used in this study and the survey items used to measure these constructs are described as follows.

**Job demand:** manageability of workload and ability to balance work and personal responsibilities (Duxbury & Higgins, 2001). The following survey items measured job demand:

1. In general, how manageable do you feel your workload is?
2. In general, I feel I am able to balance my work and personal responsibilities well.

Control: the perception of having influence and involvement in decisions related to work responsibilities and authority to make decisions related to work (Karasek, 1979; Lowe & Schellenberg, 2001). The following survey items measured control:

1. I have a sense of influence and involvement in decisions and changes that affect my work.
2. I am given appropriate authority to make decisions related to my area of responsibility.

Support: overall levels of helpful interaction available on the job. In this study, two dimensions of support, socio-emotional support and instrumental support were examined separately. *Socio-emotional support* refers to the degree of social emotional integration and trust the employee feels (Karasek & Theorell, 1990). *Instrumental support* refers to the availability of resources and assistance required by the employee to complete job tasks (Karasek & Theorell, 1990).

The measure of socio-emotional support was limited to the supervisory relationship, as the literature emphasizes the importance of this relationship to employee well-being (Buckingham & Coffman, 1999; Jones et al., 2001; Lobban et al., 1998). The following survey items measured socio-emotional support:

1. The person I report to treats me with respect.

2. I can raise workload concerns with the person I report to without fear of negative impact.
3. I feel comfortable raising personal issues with the person I report to.
4. In general I believe the intentions and motives of the person I report to are good.
5. The person I report to is willing to listen and where possible respond to my concerns and suggestions.

The following survey items measured instrumental support:

1. Administrative and technical assistance required for my job is available to me (i.e. administrative help with word processing, copying, computer supports, laboratory supports).
2. Materials and equipment required for my job is available to me (i.e. Pencils, paper, fax machine, photocopier, computer).

#### Job Satisfaction Measure

Job satisfaction, defined as, “a positive emotional state resulting from the appraisal of one’s job experiences as fulfilling important job values” is considered central to the overall quality of working life (Steinhardt, 2003) and a major component of overall satisfaction or happiness (Lowe & Schellenberg, 2001).

The following single item question was used to measure job satisfaction:

I feel satisfied with my current employment situation.

#### Health Status Measure

Epidemiological researchers have concluded that self reported health status is a powerful predictor of subsequent health outcomes (Adams, Bezner,

Steinhardt, 1997). Recall that the commonly accepted definition of health stated by the World Health Organization is “health is a complete state of physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 1948). Despite this holistic conception of health that is commonly used by scholars, health status is frequently measured through a single item question such as the one asked in the Faculty of AFHE Employment Equity and Workplace Climate survey: “ In general I would say my health is... poor; fair; good; very good; excellent.” Although self reported health status is considered a powerful indicator for health outcomes, research has identified a caution for interpretation of the single item health status question. Ratner, Johnson and Jeffery (1998) investigated the meaning of the single item health status question and concluded that more than 50% of the variance in reported health status arose from an individual’s perceptions of their physical health status. The study concluded that the single item health status question should be kept as an indicator of physical health and not assumed to reflect broader conceptions of health status that include mental and social health. Based on the conclusion from Ratner et al. (1998), two measures of health status were used in this study. The first measure was the single item health status question, which was considered a measure of the physical dimension of health. The second was a scale developed from five survey questions, capturing elements of psychological health that have been found to be related to work stress. This was considered a measure of the psychological dimension of health. The survey items were drawn from the General Well-being Schedule, a brief (18 item), but broad ranging indicator of



subjective feelings of psychological well-being and distress for use in community surveys (McDowell & Newell, 1996). The entire scale was not used in the original survey. The following survey items from the General Well-being Schedule were used in the current study to measure the psychological dimension of health:

1. In general, in the past month I have been feeling ... (in excellent spirits; in good spirits most of the time; I have been up and down in spirits a lot; in low spirits most of the time; in very low spirits)
2. In general, in the past month I have been bothered by nervousness or worry ... (extremely so-to the point where I found it difficult to work or take care of things; quite a bit; some – enough to bother me; a little; not at all)
3. In the past month I have felt under stress, strain or pressure ... (yes – almost more than I could bear or stand; yes – quite a bit of pressure; yes – some, more than usual; yes – some, but about usual; a little or not at all)
4. In the past month I have started the day feeling fresh and rested ... (every day; most every day; fairly often; less than half the time; rarely or none of the time)
5. In the past month at the end of the work day I have felt tired, worn out or exhausted ... (every day; most every day; fairly often; less than half the time; rarely or none of the time)

These items measure the underlying constructs of positive well-being (question 1), anxiety (questions 2 & 3) and vitality (questions 4 & 5) (McDowell & Newell, 1996).

### **Reliability and Validity of Measures**

Good questionnaires seek to maximize the relationship between the answers recorded and what the researcher is trying to measure, so that results can be applied to enhancing knowledge of the population and constructs being studied (Fowler, 1993). Reliability, “the extent to which the measure gives the same results on separate occasions” and validity, “the extent to which the test measures the quality or construct it is intended to measure” of study instruments are considered critical (Kaplan & Saccuzzo, 1997). The survey tool in this study was designed for the “Employment Equity and Workplace Climate” survey and statistical testing of reliability and validity was not conducted. However, consideration of reliability and validity was taken during the development of the survey tool.

First, the survey tool was carefully designed using established survey methodology. The survey was developed as part of a graduate-level survey methodology course and was designed in accordance with survey design methodology established by Fowler (1993 & 1995). In addition, the survey tool was developed with the guidance and feedback of the Employment Equity Committee, many members who are experienced academic researchers. The survey tool was tested with a volunteer group for content clarity. Finally the survey questions, although designed specially for the workplace climate survey,

were based on a literature review, which included a review of survey instruments used in other work environment studies (Lowe & Schellenberg, 2001; McDowell & Newell, 1996; Wright, 2002). These design elements consider a number of reliability and validity guidelines. Fowler (1993) outlines that clear questions using consistently understood words is one step toward developing a reliable instrument. Kaplan and Saccuzzo (1997) add that test construction, when done well, contributes to content validity, which is the extent to which a test provides an adequate representation of the conceptual domain. Finally, as previously mentioned, the questions in this study instrument are consistent with those found in the literature and in other instruments measuring the same work environment variables. Kaplan and Saccuzzo (1997) assert that this provides some evidence of construct validity.

### **Data Analysis Methods**

I used a number of steps to analyze the data. First, the socio-demographic profile of the entire sample and each occupational group were examined. Frequency and percentage data for gender, education and income categories were analysed. Because these data are non-continuous, chi-squared analyses were conducted to determine if the two occupational groups differed significantly in terms of socio-demographic characteristics. For the age and length of employment variables, the mean, standard deviation and range were examined. T-tests were conducted to determine if statistically significant differences existed in age and length of employment between the two occupation groups. Throughout the remaining data analysis, pairwise deletion of missing data was

applied, as necessary. Pairwise deletion is one method of dealing with cases that have missing data on either the dependant or independent variable. In pairwise deletion, statistics are calculated using all cases that have values for the variables (vs. listwise which excludes all cases that have missing values for any of the variables) (Norusis, 1999). The decision to use pairwise deletion was made a-priori to eliminate concerns regarding systematic exclusion of a sub-group due to non-response to certain questions.

Second, principle components analysis was used to develop the work environment and the psychological health dimension scales. Principle component analysis is a statistical method of data reduction that empirically confirms whether the items conceived of as representing the same underlying concept do, in fact, covary. This analysis permitted the expression of each of the work environment variables as a single scale score versus the multiple items used to measure each concept. The principle component analysis used Kaiser's criterion of eigenvalue of greater than 1.0 to determine inclusion in the scale (Munro & Page, 1993). For the support variable, socio-emotional support and instrumental support were treated separately, as they capture distinct elements of workplace support. Following the principle components analysis, the internal reliability of the scales was verified by estimating Cronbach's alpha. The generally acceptable reliability coefficient of .70 or higher was used to determine whether the scale had acceptable internal consistency (Santos, 1999).

Third, the means and standard deviations for each of the work environment scales, the job satisfaction item, the two health dimensions (physical

and psychological) were examined for the entire group and for the professor and administrative support occupation groups separately. Frequency distributions for job satisfaction and physical health status were also examined for the overall sample and each occupation group. This analysis provided an overall description of the work environment, job satisfaction and health status for the sample of this study (research question #1). Since an important assumption of the independent t-test is that dependent variables are normally distributed, frequency distributions and quantile plots for each of the scale items and for health status were examined (Munro & Page, 1993). Once assumptions of normality were verified, t-tests were conducted to find any statistically significant differences between the two groups in each of the work environment scales as well as job satisfaction and the health status items (research question #2). In order to correct for multiple t-test comparisons, a Bonferroni correction ( $.05/x$  comparisons) was employed.

Lastly, the final research question about the relationship among work environment, job satisfaction and health status was examined by conducting a partial correlation analysis. Partial correlation is a technique that permits statistical control of variables external to the research question (Munro & Page, 1993). As gender, age, income and education are also known to influence health (Health Canada, 1994) and differential results for job stress of academics have been reported by age and gender (Thornson, 1996), these variables were partialled out in the analysis. The partial correlation was conducted with the work environment factors, job satisfaction and the physical and psychological health measures.

## **CHAPTER 4**

### **Results**

This chapter reports the findings of this study. First, the study sample is described by the socio-demographic characteristics and then the findings pertaining to the three research questions are presented. Gender, education, income, age and years employed at the University are the socio-demographic characteristics that are reported for the study sample. The first two research questions are addressed by providing findings about the work environment factors, job satisfaction and health status, for professors and administrative support staff in the Faculty of AFHE and by comparing the occupation groups. The third research question is addressed by providing results about the correlations found among work environment, job satisfaction and health.

#### **Demographic Profile of Participants**

Of the 133 surveys mailed to professors and administrative support staff, 61.7% were returned, resulting in a study sample size of 82. While the response rate for professors (62.6%) and administrative support (59.5%) was similar, the overall sample contained a larger proportion of professors (70%). The demographic profile of the study participants and occupation group comparisons are illustrated in Tables 3 and 4.

The majority of study participants were female (61%), with an age range of 24 to 61 years and a mean age of 46.3 years. Most study participants reported having a University education (79%) and earning over \$40,000 per year from their employment income. The administrative support occupation group

respondents were predominantly female (96%), earned less than \$40,000 (92%) with education primarily ranging from high school diploma to a bachelor degree (92%). The professor occupation group consisted of a slightly higher proportion of males (55%) . Most had a PhD (98%) and earned more than \$40,000 per year. Chi-square analysis confirmed that the occupation groups differed significantly in terms of gender ( $p \leq .001$ ), education ( $p \leq .001$ ) and income ( $p \leq .001$ ). For the remaining socio-demographic variables, t-tests showed that the occupation groups also differed significantly in age ( $p \leq .001$ ) and years employed at the University ( $p \leq .05$ ). The administrative support group are younger with less seniority (mean age 40.5 years; mean years employed 9.7) than professors (mean age 48.7 years; mean years employed 14.6).

Table 3: Demographic Characteristics and T-Test Values: Age, Years of Employment

Demographic Characteristic	Total Sample (n=82)	Professor (n=57)	Admin. Support (n=25)	T-scores (df)
<u>Age</u>				
Mean	46.3 (n=73)	48.7 (n=52)	40.5 (n=21)	-3.908***
Range	24 – 61	30 – 61	24 – 52	(35.88)
S.D.	8.8	7.9	8.2	
<u>Yrs. Employed</u>				
Mean	13 (n=77)	14.6 (n=53)	9.6 (n=24)	-2.159*
Range	< 1 to 32	<1 to 32	<1 to 27	(75)
S.D.	9.6	10.1	7.5	

\*  $p \leq .05$ , \*\*\*  $p \leq .001$

Table 4: Demographic Characteristics and Chi-square Values: Gender, Age, Education and Income

Demographic Characteristic	Total Sample (n=82)	Professor (n=57)	Admin. Support (n=25)	Chi-square Values (df)
<u>Gender</u>				
Male	39% (n=31)	55% (n=30)	4% (n=1)	18.501***
Female	61% (n=49)	45% (n=25)	96% (n=24)	(1)
<u>Education</u>				
High school	14% (n=11)	0	44% (n=11)	75.918***
College dip	8% (n=6)	0	24% (n=6)	(4)
Bach. degree	8% (n=6)	0	24% (n=6)	
Master degree	4% (n=3)	2% (n=1)	8% (n=2)	
PhD	67% (n=53)	98% (n=53)	0	
<u>Income</u>				
< \$40,000	29% (n=22)	0	92% (n=22)	72.915***
\$40 – 80,000	36% (n=27)	48% (n=25)	8% (n=2)	(8)
> \$80,000	36% (n=27)	52% (n=27)	0	

\*\*\*  $p \leq .001$

### Work Environment Factors, Job Satisfaction and Health Status

This section provides information and statistical data about the development of the work environment scales and results for research questions 1 and 2. The first research question asked about the levels of job demand, job control, support, job satisfaction and health status for professors and administrative support staff in the Faculty of AFHE. Research question 2 asked about the similarities and differences between professors and administrative support staff in job demand, job control, support, job satisfaction and health status. To begin, this section provides information about the development of the work environment scales followed by the findings associated with the first two research questions.



### Scale Development: Principle Component Analysis

To reduce the numbers of statistical tests, scales were created for the work environment factors. To ensure that the work environment factors could be aggregated on empirical grounds, a principle component factor analysis was first conducted. The items selected to measure job demand, control, supervisory support and instrumental support were items identified in the literature review as common measures of these work environment concepts. However, the principle component analysis confirmed three, not four, work environment factors in this study. The component matrix in Table 5 shows that job demand and instrumental support were empirically supported as distinct concepts. However the two items that were intended to measure control, and the five items intended to measure supervisory support, in fact, represented the same underlying concept. The internal reliability of the three factors yielded by the principle component analysis was verified and Cronbach's alpha was found to exceed generally acceptable internal consistency of .70 (Santos, 1999) for each of the three factors: job demand alpha = .87; instrumental support alpha = .74; control/supervisory support alpha = .95.

Based on the outcome of the principle component analysis, the study plan was revised from four to three work environment factors. Job demand and instrumental support remain unchanged, but control and socio-emotional support (supervisory) were considered as one concept. As control and supervisory support are elements of the psychological and social workplace environment, I named this concept psychosocial support. Also, in creating the scale for job

demand, the items were recoded to reverse the direction of responses so that a higher score means higher job demand. This resulted in consistency among scales in that a higher score represents a higher level of the work environment factor.

Table 5: Principle Component Analysis: Rotated Component Matrix

	Component		
	Control/ Supervisory Support	Job Demand	Instrumental Support
The person I report to is willing to listen and where possible respond to my concerns and suggestions	.914		
The person I report to treats me with respect.	.870		
I am given appropriate authority to make decisions related to my area of responsibility.	.868		
I have a sense of influence and involvement in decisions and changes that affect my work.	.852		
In general, I believe the intentions and motives of the person I report to are good.	.835		
I feel comfortable raising personal issues with the person I report to.	.833		
I can raise workload concerns with the person I report to without fear of negative impact.	.805		
In general, how manageable do you feel your workload is?		.929	
In general, I feel I am able to balance my work and personal responsibilities well.		.922	
Materials and equipment required for my job is available to me.			.861
Administrative and technical assistance required for my job is available to me.			.853

Rotation method: Varimax with Kaiser

## Job Demand, Instrumental Support and Psychosocial Support

To investigate the work environment, the means, standard deviations and t-test scores were examined for job demand, instrumental support and psychosocial support (Table 6).

Table 6: Job Demand, Instrumental Support and Psychosocial Support Scale Scores and Between Group Comparisons

	Total Sample	Professor	Administrative Support	Between Group Comparisons
Work Environment Factor	Mean (sd)	Mean (sd)	Mean (sd)	t-score (df)
Job Demand	3.05 (1.10)	3.43 (1.04)	2.24 (.72)	-5.13*** (77)
Instrumental Support	3.61 (1.11)	3.13 (1.14)	4.32 (.59)	5.00*** (70.30)
Psychosocial Support	3.76 (1.03)	3.76 (1.11)	3.76 (.75)	.025 (69)

Notes:

1. To correct for multiple t-test comparisons, Bonferroni correction (.05/3 comparisons) established the statistical significant level (2-tail) at  $\leq .02$
2. \*\*\*  $p \leq .001$
3. Respondents rated their perceptions on a 5-point Likert scale where 1= lowest amount of the work environment factor and 5=highest amount of the work environment factor

Table 6 shows the professors' job demand score was significantly higher ( $p \leq .001$ ) than the administrative support group indicating that professors perceived higher job demand. The instrumental support score was significantly lower ( $p \leq .001$ ) for professors than the administrative support group, indicating that professors perceived less administrative and technical assistance and that materials required for their work were less available to them. For both job demand and instrumental support there was more than a one-point difference in the score between the two occupational groups, which is notable on a 5-point Likert scale.

The professor and administrative support groups reported the same mean scores for psychosocial support (Table 6). Overall, both groups agreed that there were moderate levels of supervisory support and opportunity for involvement and control. These findings challenge the conventional view that academics benefit from higher levels of control and support, and hence protection from occupational stress (Bosma et al., 1997; Marmot & Smith, 1991; Thorsen, 1996). As the findings from this study differed from previous research, additional analyses were conducted to determine whether aggregating items into scale scores masked differences between groups on responses to individual items of the survey. T-tests, illustrated in Appendix F, were conducted to compare the professor and administrative support group responses on the individual items comprising the job demand, instrumental support and psychosocial support scales. The t-test results revealed statistically significant differences between occupational groups for the individual items that comprised the job demand and instrumental support scales but not for the individual items that comprised the psychosocial support scale. In sum, this meant that results of the t-tests of individual items were consistent with the t-tests for the scales and eliminates concern that aggregating items into scales masked differences between groups on individual survey items.

### Job Satisfaction

To investigate job satisfaction, the means (standard deviations) were examined for the entire sample and separately for professors and administrative support groups. The mean score for job satisfaction of the entire sample was 3.50 (sd = 1.14). As Table 7 shows, the job satisfaction for the professor group was

slightly lower, with a mean score of 3.42, than the job satisfaction reported by the administrative support group who had a mean score of 3.68. However the small difference in job satisfaction between the two groups was not statistically significant.

Table 7: Job Satisfaction Scores and Between Group Comparisons

	<b>Total Sample</b>	<b>Professor</b>	<b>Administrative Support</b>	<b>Between Group Comparisons</b>
	<u>Mean</u> <u>(sd)</u>	<u>Mean</u> <u>(sd)</u>	<u>Mean</u> <u>(sd)</u>	<u>t-score</u> <u>(df)</u>
<b>Job Satisfaction</b>	3.50 (1.14)	3.42 (1.16)	3.68 (1.07)	.950 (80)

Note: Respondents rated whether they feel satisfied with their current employment situation on a 5-point Likert scale where 1= strongly disagree and 5 = strongly agree

In addition to comparing the mean scores for job satisfaction, the frequency distribution, along with chi-square analysis, was examined to ensure that information was not masked through aggregating data into mean scores. The findings illustrated in Table 8 show that, while a higher proportion of administrative support staff (72%) reported job satisfaction than the professor occupation group (52%), the differences between the groups in the frequency of responses to each category were not statistically significant.

Table 8: Job Satisfaction: Professor and Administrative Support Occupation Group Frequency Distribution and Chi-square Values

<b>Job Satisfaction</b>	<b>Professors (n=57)</b>	<b>Administrative Support (n=25)</b>	<b>Chi-square Value (df)</b>
Strongly agree (5)	19% (11)	16% (4)	5.703 (4)
Agree (4)	33% (19)	56% (14)	
Neither Agree nor disagree (3)	23% (13)	16% (4)	
Disagree (2)	19% (11)	4% (1)	
Strongly disagree (1)	5% (3)	8% (2)	

### Health Status

Two measures of health status were analyzed in this study. First, the single item health status question where respondents were asked to rate their health as poor (1), fair (2), good (3), very good (4), or excellent (5) was examined. As discussed in Chapter 3 this was considered a measure of the physical dimension of health (Ratner et al., 1997). The second health status measure, considered a measure of the psychological dimension of health, was a scale developed from 5 of the survey questions. A principle component analysis was conducted to determine whether the 5 items covaried. Like the work environment scales, inclusion criteria of eigenvalue greater than 1.0 and alpha of .70 were used. The principle component analysis (Appendix G) found that the 5 health items showed high internal consistency and internal reliability was confirmed with a Cronbach alpha score of .85.

For the physical health dimension, the overall sample score (3.51) and the two occupational group scores (professor, 3.41; and administrative support 3.72), were similar and indicate that overall both groups rated their health between good and very good on the five-point scale. The t-test scores illustrated in Table 9 confirmed the group similarities for physical health status. The psychological

health dimension scale scores also illustrated in Table 9 were lower for both occupation groups than the physical health status score. On the psychological health dimension the professors reported a lower mean score (2.97), than administrative support staff (3.48). In this case the difference in the means of the two groups was statistically significant.

Table 9: Physical and Psychological Health Scores and Between Group Comparison

	<b>Total Sample</b>	<b>Professor</b>	<b>Administrative Support</b>	<b>Between Group Comparisons</b>
	<u>Mean</u> (sd)	<u>Mean</u> (sd)	<u>Mean</u> (sd)	<u>t-score</u> (df)
<b>Physical Health</b>	3.51 (.95)	3.41 (.99)	3.72 (.84)	1.445 (53.61)
<b>Psychological Health</b>	3.12 (.80)	2.97 (.75)	3.48 (.84)	2.55** (39.41)

Notes

1. To correct for multiple t-test comparisons, Bonferroni correction (.05/3 comparisons) established the statistical significant level (2-tail) at  $\leq .025$

2. \*\*  $p \leq .01$

Similar to the frequency distribution analysis conducted for job satisfaction, the distribution of responses to the five health categories representing the physical dimension of health (poor, fair, good, very good, excellent) were further analyzed to ensure that information was not masked by aggregating the data into a mean score. The findings in Table 10 show that while a greater proportion (20%) of the professor occupation group reported fair health status (compared to 4% administrative support group) and a smaller proportion (45%) of professors report very good and excellent health (compared to 56% of administrative support group), the differences between groups were not statistically significant.

Table 10: Health Status Categories: Professor and Administrative Support Occupation Group Frequency Distributions and Chi-square Values

Health Status	Professors (n=56)	Administrative Support (n=25)	Chi-square Value (df)
Excellent	16% (9)	20% (5)	3.404 (3)
Very Good	29% (16)	36% (9)	
Good	36% (20)	40% (10)	
Fair	20% (11)	4% (1)	
Poor	0	0	

### Relationships Among Work Environment, Job Satisfaction and Health

This final section presents the findings for the third research question, which asked about the relationships among work environment, job satisfaction and health. To examine these relationships, a partial correlation analysis that controlled for age, gender, income and education was conducted. The results of the partial correlation analysis are shown in Table 11. The partial correlation results were interpreted using guidelines suggested by Hazard Munro (1997):  $r = .10$  is a small (weak) effect;  $r = .30$  is a moderate effect and  $r = .50$  is a large (strong) effect.

In this study, job demand had a strong correlation with the psychological dimension of health ( $r = -.52$ ), and was moderately correlated with the physical dimension of health ( $r = -.29$ ). There was no correlation between job demand and any of the other study variables. Although a partial correlation cannot establish a cause-effect relationship, the study results could indicate that job demand is related to the health status of the respondents. Psychosocial support had a strong correlation with job satisfaction ( $r = .52$ ) and a moderate correlation with the psychological dimension of health ( $r = .27$ ). This indicates that the dimensions of psychosocial support this study examined (control/supervisory support) could



play a strong role in the appraisal of job satisfaction of the study participants. Instrumental support had a moderate relationship with job satisfaction ( $r = .28$ ) and psychological health ( $r = .28$ ) and a weaker relationship to physical health ( $r = .24$ ). This means that instrumental support (having the administrative, technical, materials and equipment required for a job) could also play a role in influencing job satisfaction and health. In addition to the relationship between instrumental support and job satisfaction, job satisfaction had a strong correlation to the psychological dimension of health and the two dimensions of health had a strong correlation with each other ( $r = .48$ ).

Table 11: Partial Correlation Coefficients for Job Demand, Instrumental Support, Psychosocial Support, Job Satisfaction, Psychological Health, Physical Health Controlling for Gender, Age, Income and Education

	<b>Job Demand</b>	<b>Instrumental Support</b>	<b>Psychosocial support</b>	<b>Job Satisfaction</b>	<b>Psychological Health</b>	<b>Physical Health</b>
<b>Job Demand</b>	1.000 ( 0) p=					
<b>Instrumental Support</b>	-.0600 (64) p=.632	1.000 ( 0) p=				
<b>Psychosocial Environment</b>	-.0497 (57) p=.709	.3276** (57) p=.011	1.000 ( 0) p=			
<b>Job Satisfaction</b>	-.2225 (64) p=.073	.2826* (64) p=.022	.5243*** (57) p=.000	1.000 ( 0) p=		
<b>Psychological Health</b>	-.5199*** (64) p=.000	.2794* (64) p=.023	.2668* (57) p=.041	.3788** (65) p=.002	1.000 ( 0) p=	
<b>Physical Health</b>	-.2851* (64) p=.020	.2417* (64) p=.051	.1353 (57) p=.307	.0668 (65) p=.591	.4891*** (65) p=.000	1.000 ( 0) p=

(Coefficient / (df) / 2-tailed Significance)

\*  $p \leq .05$ , \*\*  $p \leq .01$ , \*\*\*  $p \leq .001$

## CHAPTER 5

### Discussion

The current study resulted in four key findings. In this final chapter, these key findings are discussed to identify new insights and to compare them to the literature. Following the discussion of key findings, recommendations for future research are discussed. The chapter concludes with a discussion of the implications this study has for the practice of workplace health promotion.

#### Discussion of Key Findings

##### Key Finding #1: Relationship Among Work Environment Factors, Job Satisfaction and Health Status

The first key finding relates to the relationships among the work environment factors, job satisfaction and health status of professors and administrative support staff in the Faculty of AFHE. This study found that:

- job demand had a strong relationship with the psychological dimension of health and a moderate relationship with the physical dimension of health, but did not have a relationship with job satisfaction;
- instrumental support had a moderate relationship with job satisfaction, the psychological dimension of health and the physical dimension of health;
- psychosocial support had a strong relationship with job satisfaction and a moderate relationship with the psychological dimension of health, but no relationship with the physical dimension of health; and
- job satisfaction had a moderately strong relationship with the psychological dimension of health, but no relationship with the physical dimension of health.

Of the three work environment factors examined in this study, job demand had the strongest relationship with health status. Job demand in this study explained 27% of the variance in the psychological health dimension and 8% of the variance in the physical health dimension, independent of gender, age, income and education.

The finding of a strong association between job demand and the psychological dimension of health is especially interesting when juxtaposed on workplace trends which indicate workload and work-life balance difficulties are increasing (Duxbury & Higgins, 2001), and psychological health absenteeism is increasing for most organizations (Joffe et al., 2000). Specifically related to the setting of this study, the 2002 Annual Report on Health and Disability for the University of Alberta reports that the majority of general illness (over 10 days and less than 120 days for non-academic and over 20 days and less than 6 months for academic) and long term disability (post general illness) was in the category this report termed mental health illness e.g. depression, anxiety disorders, addictions, phobias, post traumatic stress disorder. For example, in 2002, mental health illness category was cited as the reason for 41% of non-academic staff and 65% of academic staff on general illness leave. The strong job demand-psychological health relationship found in this study suggest that the high level of absence in the mental health illness category recorded at the University of Alberta and the rising absenteeism and disability costs due to stress and psychological illness in contemporary work settings could be related to problems that employees are

having managing their workloads and balancing their work and personal responsibilities (job demand).

Instrumental support in this study was the only work environment variable that had a relationship with job satisfaction and both the psychological and physical dimensions of the respondents health. The strength of the relationships were moderate explaining approximately 8% of the variance in job satisfaction and the psychological and physical health dimensions. This finding provides evidence that the availability of materials, equipment, technical and administrative assistance required for a job has a direct effect on a employees' job satisfaction and health status. This finding is consistent with and builds upon some of the research that was reviewed in Chapter 2. Lowe and Schellenberg (2001) concluded that receiving the resources required to do a job contributes to a strong employment relationship, makes workload more manageable, reduces stress and increases effectiveness. In addition, a Gallop poll study (Buckingham & Coffman, 1999) found that the availability of the required materials and equipment to do the job right was one of the top six criteria for a supportive, productive work environment. The relationship found between the availability of instrumental support and the psychological and physical health status of respondents in the current study, supports and builds upon the existing research conclusion about the importance of this work environment factor by showing that availability of instrumental supports can affect employee health status.

Of the three work environment factors, psychosocial support had the strongest relationship with job satisfaction, explaining 27% of the variance. In

addition, psychosocial support was found to have a relationship with the psychological dimension of health (psychosocial support explains 14% of the variance of the psychological dimension of health). These findings are consistent with existing research that has provided evidence that work environment factors like control and supervisory support are directly related to job satisfaction (Buckingham & Coffman, 1989; Isreal et al., 1989; Warr, 1990). In addition, some studies have found that job satisfaction is an intervening link between work stress/strain and health status (Ducharme & Martin, 2000; Lobban et al., 1998). The current study goes further to also show that availability of psychosocial support (control/ supervisory support) is linked to psychological health. This finding is important because it emphasizes that supervisory support and control (psychosocial support) are essential ingredients for both job satisfaction and the psychological dimension of employee health.

All three work environment factors, job demand, instrumental support, and psychosocial support, were found related to the psychological dimension of health. This is noteworthy because in the contemporary work environment, psychological illness and disability absence are emerging as a trend and a significant concern. This finding underscores that the psychological health of employees is not only dependent on individual factors but also on organizational factors like manageability of workload, ability to balance work and personal responsibilities and availability of instrumental and psychosocial supports.

## Key Finding #2: Work Environment, Job Satisfaction and Health Status of Professors and Administrative Support Employees

Professors and administrative support staff of the Faculty of AFHE reported different levels of job demand, instrumental support and psychological health status, but had similar levels of psychosocial support (control/supervisory support), job satisfaction and physical health status. To summarize, this study found that professors reported higher levels of job demand and lower levels of instrumental support than administrative support employees and had a slightly lower score on the psychological health dimension. The two occupation groups reported similar levels of psychosocial support (control/supervisory support), job satisfaction and physical health status.

There has been no previous research that has compared the professor and administrative support occupation groups on the work environment, job satisfaction and health status dimensions. Therefore, an important outcome of this study is a description of the differences and similarities of the two occupational groups, which is further enhanced by the finding of how the work environment factors in this study related to job satisfaction and health status. Based on the high response rate (> 60%) for the professor and administrative occupational groups, these findings could be generalized to these groups within the Faculty of AFHE with reasonable confidence (Fowler, 1993). However, the small sample size (n= 82) and the distinctive characteristics of the faculty from which it was drawn suggest that caution should be used when generalizing the findings to the broader academic community. For example, characteristics of the Faculty of AFHE, such as conducting applied research in the natural and social

sciences may affect the work environment characteristics in a unique manner. In addition, faculties may vary to some extent with respect to specific teaching, research and administrative responsibilities assigned to academic staff.

The finding that professors reported higher job demand than administrative support staff is consistent with existing workplace health literature. For example, Duxbury and Higgins (2001) reported that management and professional groups in the not-for-profit sector, which includes educational institutions, especially report increasing workload. The literature from academic work environments shows that largely due to heavy workload, academic work is stressful (Abouserie, 1996; Doyle & Hind, 1998; Kinman, 2001). Finally, the Whitehall studies that specifically examined the differences between occupational gradients on the dimensions of job demand, control, support and health status found that higher occupational gradients reported higher levels of job demand.

However, the findings that professors and administrative support staff have similar levels of psychosocial support, job satisfaction and physical health and that professors reported lower psychological health are contrary to existing literature. The Whitehall studies, which showed that occupation groups at higher gradients may have higher levels of job demand, also showed that higher occupation gradients tend to be protected from health problems by higher levels of control and support (Bosma et al., 1997; Marmot & Smith, 1991). Indeed, the current study findings, where the professors and administrative support occupation groups reported the same level of psychosocial support, challenge the commonly accepted notion that higher occupational gradients will report higher



levels of control and support than lower gradient occupational groups. Some scholars have suggested that the immense workplace changes that took place in the 1990s resulted in erosion of employee control especially for managers and senior professionals (Sparks et al., 2001). One possible explanation for the finding that professors and administrative support reported the same level of psychosocial support (unlike Whitehall findings) is that professors experienced higher psychosocial support in the past, but this has eroded. Of course this is a speculation because the cross-sectional design of this study, where data were gathered at only one point in time, does not allow confirmation of such a suggestion.

The finding about the occupational group differences in instrumental support (which measured both the availability of administrative and technical assistance required for the job and the availability of materials and equipment required for the job), where the administrative support group reported a higher level of instrumental support than professors is new information, as this has not been previously examined in the literature (administrative support group mean score = 4.32 professor mean score = 3.13 on a 5 point Likert scale where 5=highly satisfied). As instrumental support was also found to have a moderate effect on job satisfaction and the physical and psychological dimensions of health, the difference between occupational groups is important to understand. Considering the literature review, three explanations for these differences are possible. First, the budget cuts experienced by this academic institution in the last decade may have resulted in decreases to instrumental supports that affected the professor

occupation group more than the administrative support group. Second, the nature of academic work creates unique instrumental support requirements that may not be fully identified and available for this group. For example, previous research has identified the multiplicity of competing demands on academics as: teaching, research, administrative and community responsibilities (Bailyn, 1993). These distinct activities would translate to distinct instrumental support requirements that may not be recognized by the university administration (Macinnis, 1998). A final possibility is that the job demand of professors has been increasing without corresponding increases in instrumental supports. Evidence in the literature review to support this possibility, was found by Doyle and Hind (1998) who studied job stressors of U.K. academics and found that a primary contributor to job strain was that workload had increased in the five years prior to the study, and the highest increase reportedly resulted from administrative responsibilities.

The mean job satisfaction scores for administrative support staff (3.68) and professors (3.42) were similar and indicate moderate job satisfaction (measured on a 5-point Likert scale where 1=strongly disagree and 5=strongly agree). Considering that both groups reported moderate psychosocial support and that psychosocial support had a strong relationship to job satisfaction, it is not surprising that the two occupational groups had similar job satisfaction scores.

While the job satisfaction scores were similar for both groups, the frequency distributions for job satisfaction indicated that 52% of the professor group compared to 72% of administrative support reported feeling satisfied with their job. This meant that 48% of professors and 28% of administrative support

staff were not satisfied with their job, at the time of the survey. While the chi-square analysis did not find a statistical difference in job satisfaction responses between the two occupational groups, this finding should not be ignored. Job satisfaction is central to the overall quality of working life (Steinhardt, 2003), is a major component of overall satisfaction and happiness (Lowe & Schellenberg, 2001), and in the current study was positively related to health status.

### Key Finding # 3: Differential Relationships Between Work Environment and the Psychological and Physical Dimensions of Health

Differential relationships were found between job demand, instrumental support and psychosocial supports and the psychological and physical dimensions of health. In this study, the work environment – psychological health dimension relationship varied according to the work environment factor as follows; job demand  $r = -.52$ , instrumental support  $r = .28$ , psychosocial support  $r = .28$ . Physical health, on the other hand had a moderate relationship with job demand ( $r = -.28$ ) and instrumental support ( $r = .24$ ) but a relationship was not found with psychosocial support. Although this study did not set out to examine whether work environment factors impact different components of health, the results revealed this to be the case.

The differential relationships between the work environment factors and the physical and psychological dimensions of health found in this study are pertinent to workplace health programming and research for two reasons. First, this finding has important research and practical implications because it points to the potential for identifying contributing factors to various workplace health problems, like the increasing prevalence of psychological illness. For example,

the current study findings indicate that manageable job demands and availability of instrumental and psychosocial support could enhance the psychological health of employees. Second, this finding underscores the importance of selecting appropriate measurement tools when conducting workplace health research with measures that capture the psychological components of health status being especially relevant.

#### Key Finding #4: Covariance of Control and Support

Through principle component analysis, control and supervisory socio-emotional support were found to measure the same underlying concept. This unexpected result is a key finding because it has important implications for research and practice. I suggest two possible explanations for this finding.

First it is possible that methodological errors in the construction of the survey items resulted in the covariance of control and support. Control and supervisory socio-emotional support were selected as distinct variables in the original study plan because this is how previous research has examined these constructs. As outlined in Chapter 3, the items used to measure control and supervisory socio-emotional supports in the survey were not from validated scales. Rather the items were derived from the literature review, which included a review of other survey instruments measuring these workplace factors. Although Kaplan and Saccuzo (1997) assert that being consistent with the literature and other tools provides evidence of construct validity, the possibility that control and supervisory support covaried because of an error in survey instrument construction cannot be ruled out.

The second possibility is that the principle component analysis revealed that employees do, in fact, perceive supervisory support and control as parts of the same concept. As mentioned in Chapter 2, previous research has not studied control in isolation from other work environment factors and it was therefore difficult for me to discern the independent effect of control. In retrospect, upon reviewing the definitions of control and supervisory socio-emotional support and the items used to measure these constructs in the survey, it is plausible that the principle component analysis results in this study mean that control and support are dimensions of the same underlying concept. For reference, the definition of control in this study was the perception of having influence and involvement in decisions related to work responsibilities and authority to make decisions related to work (Karasek, 1979; Lowe & Schellenberg, 2001). The definition of supervisory support, in this study, was the degree of social emotional integration and trust that the employees felt with the supervisor or person they report to (Karasek & Theorell, 1990). In summary, the finding that control and supervisory support covary, could mean that if employees have a strong degree of social emotional integration and trust in their supervisor, they will also perceive they have control (i.e. influence and involvement in decisions related to their work responsibilities and authority to make decisions related to their work).

In relation to this finding, the most pertinent study for discussion is the Gallop poll study reviewed in Chapter 2 (Buckingham & Coffman, 1999). The Gallop poll study, which surveyed over a million employees from a broad range of industries and countries on the question “What do the most talented employees

need from their workplace?,” concluded that support provided by supervisors or managers is the key to job satisfaction and commitment. The Gallop study highlighted the critical role that supervisory support plays in the employment relationship. The results from the current study support this idea and further imply that the supervisory relationship relates to employee perceptions of control.

### **Recommendations for Future Research**

This section outlines research recommendations based on the literature review and findings of the current study. The first two recommendations apply specifically to the Faculty of AFHE, the next three recommendations apply to the Faculty of AFHE as well as more generally to workplaces. The final two recommendations pertain to academic research in the field of workplace health.

Recommendations for further research are:

1. The Faculty of AFHE investigate the instrumental support requirements of professors. This recommendation is being made because the professors in this study reported a lower level of instrumental support than the administrative support employees, and the study findings showed that instrumental support is related to job satisfaction and health status. By identifying which instrumental supports are most needed and which instrumental supports are lacking, the faculty could make evidenced-based decisions to allocate resources to the areas where they are most required and helpful.
2. The Faculty of AFHE investigate the current level of job satisfaction and reasons for job dissatisfaction. This recommendation is being made

because in 2001, when the original survey was conducted, 48% of professors and 28% of administrative support reported they were not satisfied with their jobs. This study showed that job satisfaction has a positive relationship with the psychological dimension of health. In light of the University of Alberta data that showed a high proportion of general illness leave (53%) and long term disability leave (42%) is from mental health illness, it is important to re-investigate the level of job satisfaction and to investigate the reasons for dissatisfaction (2002 Annual Report on Health & Disability). This information could assist the Faculty in addressing issues in the work environment that have the potential to improve both the job satisfaction and the psychological health of employees, and to decrease illness leave.

3. There is a need for research to study job demand specifically in the Faculty of AFHE and also in the contemporary work environment. Specifically, research needs to examine whether there is a relationship between the rising rates of psychological illness and job demands. In addition, qualitative research to examine how job demand is conceptualized and experienced by employees in knowledge intensive jobs would be useful. This recommendation is based on multiple factors. First, the discussion in Chapter 1 outlined that dramatic social, economic and organizational changes have occurred resulting in intensified work environments (e.g. the human mind now does the “heavy lifting”) (Wilson & Wilkerson, 2000). Second, the research by Duxbury and Higgins

(2001) revealed that workload and work-life balance issues have increased markedly for Canadians in the decade preceding 2001. Concurrent to increasing workload and work-life balance problems, psychological/mental health illness is the fastest growing category of disability leave in the workforce in general (Joffe, et al., 2000) and also at the University of Alberta (the 2002 Annual Report on Health and Disability for the University of Alberta). Finally, the current study found a strong negative relationship between job demand and the psychological dimension of health and a moderate negative relationship between job demand and the physical dimension of health. Clearly, job demand is of critical importance in understanding and addressing organizational health and employee health.

4. Research needs to be conducted to investigate whether control and support is eroding in academic settings (especially for professors) and in the contemporary workplace in general. Findings from the current study and previous research consistently show that the availability of control and support is related to positive outcomes like job satisfaction and well-being (Israel et al., 1989). Some scholars have suggested that psychosocial support, especially control, is eroding in the contemporary workplace, especially with professional and management occupation groups (Sparks et al., 2001). If control and support are eroding simultaneously to increases in job demand, employees are at double jeopardy of experiencing negative impacts on job satisfaction and health outcomes.



Longitudinal research examining whether control and support is eroding in the workforce in general, and specifically for academics, is required. If control and support are eroding, it is important that strategies to reverse the trend be developed.

5. Investigation is required to identify how work environment factors may differentially affect the physical, mental (psychological), and social components of health (World Health Organization, 1948). The reason for this recommendation is twofold: psychological/mental health illness has quickly become the number one cause of disability in the workplace (Joffe et al., 2000), and this study found that job demand, psychosocial support and instrumental support had a differential relationship to the psychological and physical dimensions of health. The findings from such research would contribute knowledge toward supporting a holistic view of health in the workplace and also help identify the underlying causes for the alarming rates of psychological health issues that are being found in the workforce.
6. Investigation is required to identify a causal model that explains the direct and intervening effects of work environment factors on job satisfaction and health status. The current study findings revealed that both direct and intervening relationships might exist amongst work environment, job satisfaction and health status. A potential model that emerges from this study that could be investigated is illustrated in Figure 2. Enhancing knowledge in this area would further establish evidence about the

determinants of job satisfaction and health found within the workplace environment.

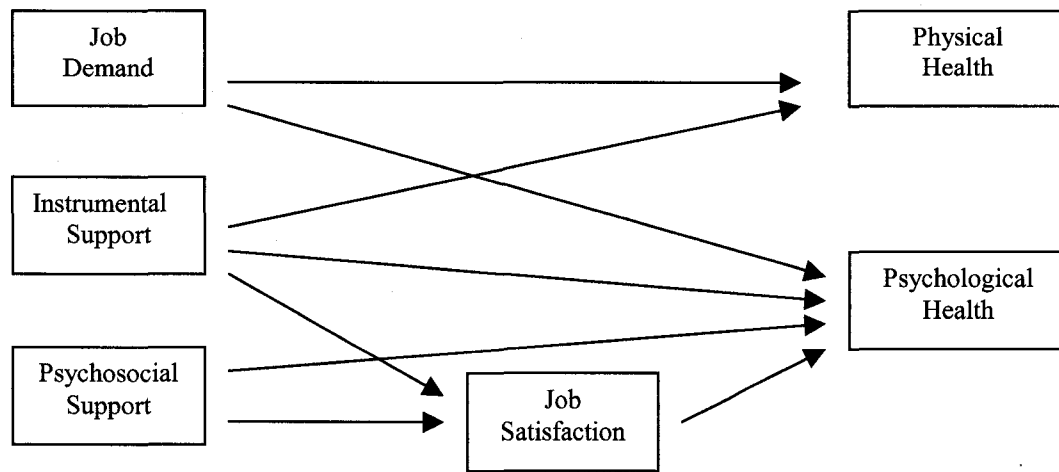


Figure 2: Hypothesized Work Environment-Job Satisfaction-Health Model

7. Research is required to investigate whether supervisory support and control represent the same underlying concept. The recommendation is being made because the current study unexpectedly found that control and support covary. Research to date has examined control and support as distinct constructs. Research to investigate whether supervisory support and control do in fact represent the same underlying construct would improve the theoretical underpinnings of workplace health promotion strategies.

### **Implications of this Study for Workplace Health Promotion Practice**

This section is the final step in this investigative journey. This thesis concludes with a discussion that translates the knowledge gained from the literature review and study findings to implications for health promotion practice in the contemporary workplace.

The current study provides evidence that work environment, job satisfaction, and employee health are related. In addition, the findings suggest that workplace health promotion practice needs to focus not only on employees, but also on organizational systems and practices. However, expanding the paradigm of workplace health promotion to include an organizational focus makes practice far more complex because it involves the difficult process of organizational change.

According to Lowe (2004), creating a healthy organization involves transformational versus superficial change. Recall in Chapter 2, a healthy organization was defined as one “whose culture, climate and practices create an environment that promotes employee health and safety as well as organizational effectiveness”(Lowe, 2003, p. 10). Redefining workplace health into organizational terms transforms it from the status of a ‘policy’ or ‘program’ into a core characteristic of how a business or public service operates (Lowe, 2004, p. 8). Transformational strategies reach deep into the organization to make fundamental changes to organizational culture, systems and management practices. The culture of an organization encompasses the underlying, but usually unspoken, values, beliefs and ways of thinking that guide the behavior of members of an organization (Long, 1998). Transformational change of underlying values and beliefs is difficult and takes time, easily 3 to 5 years. In addition, research shows that only about a third of transformational change initiatives in organizations are successful (Lowe, 2004).

The challenge of creating organizational change was researched by Pfeffer and Sutton (2000), who sought to answer the question, “Why are there so many gaps between what we (organizations, managers) know we should do and what we actually do?”. The researchers coined the phrase, “knowing-doing gap,” to describe this problem. This concept is relevant to workplace health promotion because in this field a “knowing-doing gap” is apparent. For example, the work environment-health relationship has now been discussed in the literature for twenty five years, since the Demand Control Model first established evidence for this link. Despite this longstanding knowledge that work environment is related to health, we seem to be having more difficulty than ever in creating and sustaining work environments that support worker health. In contemporary work environments, job demands and workload are increasing, there is a strong likelihood that control and support is eroding and absenteeism, particularly from psychological health problems, is on the rise (Duxbury & Higgins, 2001; Joffe et al., 2000; Sparks et al., 2001). What this implies is that the translation of what we know to what we practice in organizations has not occurred.

Pfeffer and Sutton (2000) outline five common destructive organizational practices that contribute to this “knowing-doing gap” and create barriers to organizational change. First, it is not uncommon that in organizations talk gets substituted for action. Talk, in this context, includes activities like meetings, presentations and writing reports. Often organizations stop at these activities believing they have taken action, but obviously these types of activities will not create substantive change. Second, in organizations memory often substitutes for

thinking. This means that the power of precedent often allows ineffective organizational practices to continue without examination of whether they make sense in a current context. Third, sometimes fear prevents managers and/or employees from acting on knowledge. Fear that making a mistake will have negative consequences to ones' job, future, or self esteem creates a situation of playing it safe and only doing things as they have been done in the past. Fourth, measurement systems can obstruct good judgement when they are complex or poorly designed (i.e. do not measure the outcomes an organization is seeking). For example, in an academic environment the concept of work-life balance can be espoused, but if performance standards are based on high research productivity the principle of work-like balance will likely be thwarted. Finally, Pfeffer and Sutton (2000) posit that internal competition amongst employees for rewards and recognition can undermines teamwork, knowledge sharing, and the overall ability to turn knowledge into action. For example, an organization may profess healthy principles such as teamwork and knowledge sharing, but if the structure for achieving recognition, merit increases, and bonuses is competitive, the espoused principles of teamwork and knowledge sharing will not occur.

The pursuit of workplace health is complex and challenging. Fortunately, the literature offers examples of conditions and practices that have enabled organizations to develop and maintain healthy workplaces. This chapter concludes with a discussion of these conditions and practices.

First, leadership and top management commitment is visible in organizations that have successfully created organizational change leading to

healthier workplaces. A compelling vision that the health and well-being of employees is important to the organization is a cornerstone to inspire and sustain a transformational change. Furthermore, commitment to the vision needs to be brought to life through tangible behaviors of the managers and supervisors who employees interact with on a daily basis (Lowe, 2004). This is critical because employees tend to view the actions of managers and supervisors as representing the culture and values of the organization (Wright, 2002).

The literature on support indicates that employees' perceptions that their organization values and cares about their well-being is correlated to positive outcomes for both the organization and the employee. This concept known as "perceived organizational support" positively associates with employee commitment, engagement in innovative behaviors and conscientiousness in carrying out duties and job satisfaction. In contrast perceived organizational support has a negative relationship with absenteeism (Eisenberger, Cummings, Armeli & Lynch, 1997). This means that if an organization embraces workplace health, creates a vision and translates this vision into visible management actions, employees will develop trust that the organization supports and cares about their health and well-being. In return employees will reciprocate with the positive actions stated above.

From a practical perspective, training and support, especially for managers and supervisors, is required to increase the likelihood that organization leaders create and live a healthy organization vision. Managers and supervisors will need training and support to learn the principles and components of a healthy

workplace, discover what behaviours and actions lead to a healthy environment and culture and to acquire and practice these behaviours.

A second condition for creating healthy workplaces is that organizations must accept and support a broadly defined view of health. This means that good health is not just an absence of injury, illness and disease as this reflects primarily a biological or medical view of health (Adams et al., 1997). Good health also incorporates psychological (mental) and social elements. In the past, attempts to address the psychological component were primarily through activities such as stress management training for employees. However to create healthy workplaces requires organizations to consider whether employees have reasonable job expectations, work-life balance, influence in workplace decisions, socio-emotional support and the required tools and training for the job. This broader view of health is supported by the findings of the current study and is critical in view of data that show that the highest rate of illness for employees in contemporary work environments is in the category of psychological/mental health illness. By applying, this broader view of health, organizations are open to a broader array of strategies for creating healthy workplaces and addressing the rising rates of psychological/mental health illness and absence found in most contemporary organizations.

Another practice common to organizations that have successfully developed a healthy work environment is that employee health and well-being objectives have been developed alongside business objectives (Lowe, 2004). This shows employees that business objectives and people are both important. In

addition, it is a tangible way of translating the knowledge that healthy and satisfied employees and business outcomes are related (Buckingham & Coffman, 1997, Lowe, 2003). The action of articulating workplace health outcomes alongside business outcomes signals that employee health and well-being is more than just rhetoric. Integrating workplace health into business strategies improves the likelihood of resources being allocated to achieve the health objectives. Ideally, all management decisions will begin to take workplace conditions and health into account. In short, what gets measured will get done (Pfeffer & Sutton, 2000).

Lowe (2004) has found that monitoring and evaluation are often the weakest links in the organizational change process. When engaging in change initiatives it is important to strategically plan monitoring and evaluation activities. The information gained not only provides important feedback about progress, but also is an important mechanism to provide a learning opportunity for managers and employees about how to do things better. In workplace health initiatives a variety of measurement approaches are available and include such options as benefit claim and absence data, wellness program data (i.e. usage, satisfaction), employee surveys, employee consultation data, and return on investment analysis (Lowe, 2004).

Consistent with health promotion literature another effective practice for implementing a healthy workplace strategy is the involvement of all relevant stakeholders. The involvement of stakeholders like employees, managers, and union leaders is especially critical to success because the more stakeholders are



involved the more the change effort is their effort (Isreal et al., 1989; Lowe, 2004; O'Donnell, 2000). This point coincides with the core principle of empowerment in health promotion, and the earlier discussion of the importance of employee control (Labonte, 1994). In practice, it is important to be conscious of the fact that health promotion is both a process and an outcome. Lowe (2004) points out that the change process itself must contribute to healthy workplace goals.

Finally, despite the previous conditions and practices being generic to all organizations, implementing a healthy workplace strategy requires a customized approach according to the unique needs and characteristics of each organization. There is no bundle of effective workplace health practices that can be duplicated across organizations. Standardized programs especially do not work for workplace health interventions that are targeted at organizational determinants of health. Culture is unique to an organization; therefore strategies must be customized to consider the unique organizational characteristics of history, goals, market conditions and employee demographics (Lowe, 2004).

### **Conclusion**

My objective in conducting this research was to increase my knowledge about what factors contribute to employee health and also to contribute to the field of workplace health promotion. This learning process has taken me on multi-disciplinary journey through the fields of health promotion, psychology, sociology and business. The underlying multi-disciplinary knowledge base is complex, but along with my research converges on the point that work environments have an important relationship to the health and well-being of the

workforce. At the outset of this research I expected that my outcome would be increased knowledge about creating supports and programs that enhance and promote employee health. What I have found is that for workplace health promotion to contribute to employee health, a greater focus must be put on changing work contexts not workers. This means that health promotion cannot operate in a professional silo but must be integrated in the human resource practices of an organization. To be effective health promotion must be able to contribute to business operations so that work contexts are considered in practices and decisions of organizations. In conclusion, I would propose that in order to translate what is known about workplace health into actions that result in healthy workplaces there is a new role for those engaged in workplace health promotion and occupational health and safety. To truly contribute to employee health along with knowledge about health and health promotion, this new role requires the ability to: facilitate organizational change processes; influence and advocate; develop communication strategies; coach managers and supervisors; and conduct research and evaluation.

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## Appendix A: Survey Instrument

Lets start with some questions about you and your employment at the University of Alberta. In Question 1 to 9 circle the number that best applies.

1. Are you a non-academic or academic staff at the University of Alberta?
  - 1 Non-academic ➔ *Go to Question 2*
  - 2 Academic ➔ *Go to Question 3*
  
2. Which one of the following occupational groups most closely describes your non-academic position at the University of Alberta?
  - 1 Administrative: e.g. administrative supervisor, secretary, library clerk, assistant or administrator, receptionist, payroll assistant, administrative assistant or clerk, financial and information services coordinator, conference coordinator, admissions and records coordinator. ➔ *Go to Question 4*
  - 2 Technical/Information systems: e.g. technical manager, research unit manager, animal technician, clothing and textiles technician or technologist, computer technician, LAN administrator, farm worker, laboratory assistant, technologist or technician, equipment, environmental or instrument technician, horticulturist, chemist, curator.  
➔ *Go to Question 4*
  
3. Which of the following most closely describes your academic position at the University of Alberta?
  - 1 Full professor
  - 2 Associate professor
  - 3 Assistant professor
  - 4 Professor emeritus
  - 5 Sessional instructor
  - 6 Research associate/project manager
  - 7 Post-doctoral fellow
  - 8 Administrative professional officer, faculty service officer or other manager/administrator position
  
4. What department are you currently employed in?
  - 1 Agricultural, Food and Nutritional Sciences
  - 2 Human Ecology
  - 3 Renewable Resources
  - 4 Rural Economy
  - 5 Devonian Botanic Gardens





The following sections (Questions 11 – 13) contain statements about workplace conditions and practices. In each section you will be using the following rating scale to identify your level of agreement with the statement as it pertains to your workplace.

Rating Scale:						
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Don't Know or Not Applicable	
1	2	3	4	5	6	

11. This question asks about your physical environment and whether you have the required materials and resources to safely do your job.							DK NA
A.	The physical space I work in is comfortable.	1	2	3	4	5	6
B.	The cleanliness in my work area is satisfactory.	1	2	3	4	5	6
C.	The furniture in my work area meets my needs.	1	2	3	4	5	6
D.	The air quality in my work area is satisfactory.	1	2	3	4	5	6
E.	The noise level in my area interferes with my work.	1	2	3	4	5	6
F.	The lighting in my work area is satisfactory.	1	2	3	4	5	6
G.	Administrative and technical assistance required for my job is available to me (i.e. administrative help with word processing, copying, computer supports, laboratory supports).	1	2	3	4	5	6
H.	Materials and equipment required for my job is available to me (i.e. pencils, paper, fax machine, photocopier, computer).	1	2	3	4	5	6
I.	The equipment I work with is safe.	1	2	3	4	5	6
J.	The equipment I work with receives regular maintenance.	1	2	3	4	5	6
K.	I have sufficient time to perform my tasks safely.	1	2	3	4	5	6
L.	We have standard operating procedures to guide the safe performance of job tasks.	1	2	3	4	5	6
M.	I am adequately trained about safety issues in my work area.	1	2	3	4	5	6

12. This question asks about work place practices like recognition, performance evaluation, training and career opportunities.						DK NA	
A.	I understand how my position contributes to my work area's goals and objectives.	1	2	3	4	5	6
B.	I get a sense of accomplishment from my contributions and feel like I make a difference.	1	2	3	4	5	6
C.	I feel the goals and expectations of my job are clear.	1	2	3	4	5	6
D.	I feel I am able to achieve my job expectations.	1	2	3	4	5	6
E.	I receive accurate and constructive performance feedback.	1	2	3	4	5	6
F.	I feel the criteria used to measure my performance are fair.	1	2	3	4	5	6
G.	I am satisfied with the amount of performance feedback I receive.	1	2	3	4	5	6
H.	I receive regular written performance reviews.	1	2	3	4	5	6
I.	I receive meaningful recognition for my contributions and achievements.	1	2	3	4	5	6
J.	I feel I have the opportunity to develop or expand my professional skills and knowledge.	1	2	3	4	5	6
K.	I feel there are opportunities for advancement in this organization.	1	2	3	4	5	6
L.	I feel this faculty is an equal opportunity employer.	1	2	3	4	5	6
M.	The people hired by our faculty are those most qualified for the job.	1	2	3	4	5	6
N.	In this faculty, I feel tenure decisions are based on the applicants accomplishments such as teaching, research and community service and not on irrelevant factors.	1	2	3	4	5	6
O.	In this faculty, I feel job promotion decisions are fair.	1	2	3	4	5	6
P.	I feel this faculty should work harder at promoting employment equity.	1	2	3	4	5	6
Q.	I am concerned about my job security due to changes that affect my job.	1	2	3	4	5	6
R.	I feel satisfied with my current employment situation.	1	2	3	4	5	6

13. This question asks about various aspects of the work environment like communication, involvement and support.							DK NA
A. I feel the policies that guide employee conduct and behaviour in my department are fair and reasonable.	1	2	3	4	5	6	
B. The person I report to treats me with respect.	1	2	3	4	5	6	
C. I can raise workload concerns with the person I report to without fear of negative impact.	1	2	3	4	5	6	
D. I feel safe from threats and intimidation in my work environment.	1	2	3	4	5	6	
E. There is a high degree of trust and respect among people I work with.	1	2	3	4	5	6	
F. I feel comfortable raising personal issues with the person I report to.	1	2	3	4	5	6	
G. In general, I believe the intentions and motives of the person I report to are good.	1	2	3	4	5	6	
H. I have a sense of influence and involvement in decisions and changes that affect my work.	1	2	3	4	5	6	
I. I am given the appropriate authority to make decisions related to my area of responsibility.	1	2	3	4	5	6	
J. I am encouraged to come up with new and better ways of doing things.	1	2	3	4	5	6	
K. I feel a sense of belonging in my work environment.	1	2	3	4	5	6	
L. When I'm busy I can readily ask a co-worker for assistance.	1	2	3	4	5	6	
M. The person I report to makes workload adjustments to ensure that everyone has a manageable assignment.	1	2	3	4	5	6	
N. The person I report to provides the flexibility I need to balance the demands of work and personal life.	1	2	3	4	5	6	
O. Decisions and changes that affect my work are communicated to me in a timely manner.	1	2	3	4	5	6	
P. The person I report to is willing to listen and where possible respond to my concerns and suggestions.	1	2	3	4	5	6	
Q. I get all the information I need to do my job effectively.	1	2	3	4	5	6	
R. Conflicts in my work area are usually resolved through joint problem solving.	1	2	3	4	5	6	

Here are some additional questions pertaining to your workload.

- Academic staff go to question 14
- Non-academic staff go to question 20

Questions 14 to 19 are for Academic staff

14. Considering the last 12 months, how many hours do you work in an average week on campus and off-campus?

\_\_\_\_\_ On-campus hours                      \_\_\_\_\_ Off campus hours

15. In general, how satisfied are you with the number of hours you work per week?

<u>Very Dissatisfied</u>					<u>Very Satisfied</u>
1	2	3	4	5	

If dissatisfied (marked 1 or 2), please explain why:

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16. In general, how manageable do you feel your workload is?

<u>Not Very Manageable</u>					<u>Very Manageable</u>
1	2	3	4	5	

If not manageable (1 or 2), what changes would help make it manageable:

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17. In general, I feel I am able to balance my work and personal responsibilities well.

<u>Strongly Disagree</u>					<u>Strongly Agree</u>
1	2	3	4	5	

18. Please examine the following categories of work and where applicable, for the last 12 months estimate the percentage of time you spend in each of these categories.

\_\_\_\_\_ % Teaching  
 \_\_\_\_\_ % Research  
 \_\_\_\_\_ % Supervising students  
 \_\_\_\_\_ % Department or University committees  
 \_\_\_\_\_ % Supervising staff  
 \_\_\_\_\_ % Administration  
 \_\_\_\_\_ % Other professional activities

100%

19. How satisfied are you with the way your work time is distributed among the various categories of work you are responsible for?

	<u>Very Dissatisfied</u>				<u>Very Satisfied</u>
Teaching	1	2	3	4	5
Research	1	2	3	4	5
Supervising students	1	2	3	4	5
Department or University committees	1	2	3	4	5
Supervising staff	1	2	3	4	5
Administration	1	2	3	4	5
Other professional activities	1	2	3	4	5

Where dissatisfied (1 or 2) explain why (too much time, not enough time):

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➡ *Academic staff go to Question 24*

**Questions 20 to 23 are for Non-academic staff**

20. Considering the last 12 months, on average how often if ever, do you come in early or stay late to get your work done?

1 Daily  
 2 Weekly  
 3 Monthly  
 4 Never

21. Considering the last 12 months, on average, how often if ever do you work through your lunch or skip breaks to get your work done?

- 1 Daily
- 2 Weekly
- 3 Monthly
- 4 Never

22. In general, how manageable do you feel your workload is?

- |                                      |   |   |   |   |                                  |
|--------------------------------------|---|---|---|---|----------------------------------|
| <u>Not Very</u><br><u>Manageable</u> |   |   |   |   | <u>Very</u><br><u>Manageable</u> |
| 1                                    | 2 | 3 | 4 | 5 |                                  |

If not manageable (1 or 2), what changes would help make it manageable:

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23. In general, I feel I am able to balance my work and personal responsibilities well.

- |                                    |   |   |   |   |                                 |
|------------------------------------|---|---|---|---|---------------------------------|
| <u>Strongly</u><br><u>Disagree</u> |   |   |   |   | <u>Strongly</u><br><u>Agree</u> |
| 1                                  | 2 | 3 | 4 | 5 |                                 |

This section asks about your health and well-being. For each statement circle the answer that best applies to you.

24. A. In general, I would say my health is...
- 1 poor
  - 2 fair
  - 3 good
  - 4 very good
  - 5 excellent

- B. In general, in the past month I have been feeling ...
- 1 In excellent spirits
  - 2 In good spirits most of the time
  - 3 I have been up and down in spirits a lot
  - 4 In low spirits most of the time
  - 5 In very low spirits
- C. In general, in the past month I have been bothered by nervousness or worry ...
- 1 Extremely so-to the point where I found it difficult to work or take care of things
  - 2 Quite a bit
  - 3 Some – enough to bother me
  - 4 A little
  - 5 Not at all
- D. In the past month I have felt under stress, strain or pressure ...
- 1 Yes – almost more than I could bear or stand
  - 2 Yes – quite a bit of pressure.
  - 3 Yes – some, more than usual
  - 4 Yes – some, but about usual
  - 5 A little or not at all
- E. In the past month I have started the day feeling fresh and rested ...
- 1 Every day
  - 2 Most every day
  - 3 Fairly often
  - 4 Less than half the time
  - 5 Rarely or none of the time
- F. In the past month I have been bothered by illness, pain or fears about my health ...
- 1 All the time
  - 2 Most of the time
  - 3 Some of the time
  - 4 A little of the time
  - 5 None of the time

G. In the past month at the end of the work day I have felt tired, worn out or exhausted ...

- 1 Every day
- 2 Most every day
- 3 Fairly often
- 4 Less than half the time
- 5 Rarely or none of the time

This section will give you an opportunity to provide additional comments about workplace issues that are important to you.

25. What are three things that make you feel good about your workplace?

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26. What are three things you would most like to see changed in your workplace?

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27. Is there anything else you would like us to know about employment equity or wellness in your work environment?

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These final questions ask for some additional personal information. This information is being requested so that we can strengthen our understanding of the profile of staff in the Faculty of Agriculture, Forestry and Home Economics. Anonymity will be protected when data is reported. If you are not comfortable responding to any question you can skip the question, but please continue with completing and submitting your survey.

28. How old are you? \_\_\_\_\_ years
29. What is your current marital status? Are you?
- |   |                               |   |               |
|---|-------------------------------|---|---------------|
| 1 | Married/living with a partner | 3 | Widowed       |
| 2 | Divorced/separated            | 4 | Never married |
30. What best describes your current responsibilities for children and other dependants. (Circle all that apply)
- |   |   |
|---|---|
| 1 | Responsible for dependant children. Their ages are _____. |
| 2 | Responsible for elderly parents.                          |
| 3 | Responsible for other dependants.                         |
| 4 | None of the above applies to me.                          |
31. What is the highest level of education that you have completed?
- |   |                             |   |                  |
|---|-----------------------------|---|------------------|
| 1 | Less than high school       | 5 | Bachelors degree |
| 2 | High school diploma         | 6 | Master's degree  |
| 3 | College diploma/certificate | 7 | Ph. D            |
| 4 | Trade school                | 8 | Other            |
32. What category represents the income you receive from your employment at the University of Alberta?
- |   |                     |    |                     |
|---|---------------------|----|---------------------|
| 1 | Less than \$10,000  | 6  | \$50,001 - \$60,000 |
| 2 | \$10,001 - \$20,000 | 7  | \$60,001 - \$70,000 |
| 3 | \$20,001 - \$30,000 | 8  | \$70,001 - \$80,001 |
| 4 | \$30,001 - \$40,000 | 9  | \$80,001 - \$90,000 |
| 5 | \$40,001 - \$50,000 | 10 | Over \$90,000       |

## **Appendix B: E-mail from the Dean Inviting Employee Participation in Survey**

Dear Staff Member

At the heart of the University's vision to be indisputably recognized is people making a difference. Our ultimate success is dependant on a healthy, productive work force.

One of the Faculty's eight key strategic goals (as outlined in our Faculty Strategic Plan 1998-2003) is to "Motivate staff to excel and to work collaboratively." This involves promoting a culture that is conducive to high morale, job satisfaction and personal and professional growth of all employees, as well as improving integration and teamwork. We know that this is important to our Faculty's success and your personal health.

The Faculty Equity Committee is coordinating an initiative to help us move toward achieving that goal. An Employment Equity and Workplace Climate Survey has been designed to collect views of all employees in the Faculty on work life. The results of the survey will be used to help us determine strengths to build on and areas for improvement as we move forward with our strategic planning process.

You can help us by completing the survey, which will be sent to you at your campus address in the next few weeks. The survey is completely anonymous and voluntary, and you have the right to refuse to answer any questions.

Your perceptions and opinions are very important, and the results of the survey will be more accurate and useful if a large number of individuals participate. Again, your individual responses will be held in strictest confidence and your identity will be invisible to us. So I encourage you to work with us toward making positive changes in the faculty by completing the survey when it is sent to you.

Should you have questions about the survey, please contact any member of the Faculty Equity Committee listed below:

- Deanna Williamson, Chair; 492-5770; [deanna.williamson@ualberta.ca](mailto:deanna.williamson@ualberta.ca)
- Jerry Leonard; 492-0107; [jerry.Leonard@ualberta.ca](mailto:jerry.Leonard@ualberta.ca)
- Debra Davidson; 492-4598; [debra.Davidson@ualberta.ca](mailto:debra.Davidson@ualberta.ca)
- Brenda Murdoch; [bmurdoch@ualberta.ca](mailto:bmurdoch@ualberta.ca)
- Jacquie Eales; 492-2865; [jacquie.eales@ualberta.ca](mailto:jacquie.eales@ualberta.ca)
- Donna Dosman; 492-3012; [ddosman@gpu.srv.ualberta.ca](mailto:ddosman@gpu.srv.ualberta.ca)
- Lorraine Dzuda; 439-0924 [ldzuda@gpu.srv.ualberta.ca](mailto:ldzuda@gpu.srv.ualberta.ca)
- Linda Prud'homme 492-4932 [linda.prud'homme@ualberta.ca](mailto:linda.prud'homme@ualberta.ca)

Sincerely,

Ian Morrison  
Dean  
Faculty of Agriculture, Forestry and Home Economics

## Appendix C: Cover Letter and Information Sheet Sent to Employees with Survey

April 25, 2001

Dear Colleague:

Last week Dean Morrison sent you an e-mail regarding a survey that is being coordinated by the Faculty Equity Committee. The purpose of the survey is to gather information about the perspectives of employees in the Faculty of Agriculture, Forestry and Home Economics (AFHE) on employment equity and workplace climate.

One of the Faculty's eight key strategic goals (as outlined in our Faculty Strategic Plan 1998-2003) is to "Motivate staff to excel and to work collaboratively." This involves promoting a culture that is conducive to high morale, job satisfaction and personal and professional growth of all employees, as well as improving integration and teamwork. Currently, there is a lack of information about the perspectives of employees in the Faculty of AFHE on employment equity and workplace climate. The survey will provide valuable baseline information about both the Faculty's strengths and areas for improvement. This information will allow the Equity Committee, the Dean, and Department Chairs to develop strategies and actions that not only foster an equitable and respectful workplace climate, but also suit the specific needs of employees in the Faculty.

My purpose in writing to you now is to request your participation in the survey. To participate, all you need to do is complete the attached survey, which will likely take between 30 minutes and an hour to finish. Please note that your participation is voluntary, and you may refuse to answer any of the questions. Also note that the information you provide will be anonymous. When you finish the survey, please send it to the Population Research Lab, 1-62 Henry Marshall Tory Building.

Further details about the survey are provided in the information sheet that is attached to this letter. If you have any questions or concerns about the survey, please contact any member of the Faculty Equity Committee listed below

- Deanna Williamson, Chair; 492-5770; [deanna.williamson@ualberta.ca](mailto:deanna.williamson@ualberta.ca)
- Jerry Leonard; 492-0107; [jerry.Leonard@ualberta.ca](mailto:jerry.Leonard@ualberta.ca)
- Debra Davidson; 492-4598; [debra.Davidson@ualberta.ca](mailto:debra.Davidson@ualberta.ca)
- Brenda Murdoch; [bmurdoch@ualberta.ca](mailto:bmurdoch@ualberta.ca)
- Jacquie Eales; 492-2865; [jacquie.eales@ualberta.ca](mailto:jacquie.eales@ualberta.ca)
- Donna Dosman; 492-3012; [ddosman@gpu.srv.ualberta.ca](mailto:ddosman@gpu.srv.ualberta.ca)
- Lorraine Dzuda; 439-0924 [ldzuda@gpu.srv.ualberta.ca](mailto:ldzuda@gpu.srv.ualberta.ca)
- Linda Prud'homme 492-4932 [linda.prud'homme@ualberta.ca](mailto:linda.prud'homme@ualberta.ca)

Your perceptions and opinions are very important and the findings from the survey will be more accurate and useful if a large number of employees participate. So, I encourage you to work with us to make positive changes in the Faculty by completing the survey.

On behalf of the Equity Committee, I would like to thank you in advance for your cooperation.

Sincerely,

Deanna Williamson  
Chair, Faculty Equity Committee

Faculty of Agriculture, Forestry and Home Economics  
Employment Equity and Workplace Climate Survey  
INFORMATION SHEET

**Purpose of the survey:**

To gather information about the perspectives of employees in the Faculty of Agriculture, Forestry and Home Economics (AFHE) on employment equity and workplace climate.

**Who is doing the survey?**

The Faculty Equity Committee is coordinating the survey. The Equity Committee realizes that we are addressing sensitive topics and so special care has been taken in preparing this survey. To distance ourselves from the data collection and analysis processes, we are working in partnership with the Population Research Laboratory (PRL) in the Department of Sociology, the Acting Director of Individual and Organizational Effectiveness (IOE), and a Master's student in the Health Promotion program.

**Methods:**

The survey was developed by a Master's student in the Health Promotion program whose research interests focus on the relationships between workplace climate and employee health. Development of the survey has also been shaped by input and feedback from a senior researcher on campus with expertise in survey development, a PhD student with expertise in workplace stress, the Acting Director of IOE, Equity Committee members, the Dean, and Department Chairs. The survey was pilot tested and necessary revisions were made prior to its distribution to employees in the Faculty of AFHE.

Staff at the PRL will collect the surveys as well as enter and clean the data. The Master's student will conduct the data analysis.

**Confidentiality/Anonymity:**

Respondents' names will not be on the surveys. Therefore, information on the surveys will be *anonymous*. Survey data will be entered into a data analysis program and cleaned by PRL staff. Once survey data are entered and cleaned, hard copies of the surveys will be shredded. After data are analyzed by the Master's student, the raw data will be given to the Chair of the Faculty Equity Committee on a disk. The disk copy of the raw data will be kept in a locked cabinet, and will not be available to any employees of the Faculty of AFHE.

Only aggregate (grouped) data will be available to the Faculty (Equity Committee, the Dean, Department Chairs) for planning purposes. Aggregation of data will be done by the Master's student in such a way that identification of individual employees will not be possible.

The Chair of the Equity Committee has signed and submitted an agreement to the Faculty of AFHE Research Ethics Board (REB) regarding the access and use of data from the survey. This agreement is consistent with the survey protocol, which is outlined in this information sheet and has been approved by the AFHE REB for Ethics Proposal 01-15.

**Benefits:**

The findings from the survey will be used by the Equity Committee, the Dean, and Department Chairs to develop specific actions and strategies for promoting an equitable and respectful workplace that is conducive to high morale, job satisfaction, and personal and professional growth to all employees. By completing and returning the survey, you will have input into the process that will be used to develop these strategies and actions.

If you complete and return the survey by May 18, you have an opportunity to be entered into a **prize draw**. Prizes include a gift certificate from the Faculty Club and gifts from the University

bookstore. You will find two tickets stapled to your survey. If you would like to be entered into the draw, make sure you include one of the two tickets in the envelope with your completed survey and keep the other ticket. After the draw on May 18, PRL staff will send an e-mail to all employees in the Faculty identifying the winning ticket numbers. Employees with the winning ticket numbers will be able to claim their prizes by contacting PRL staff.

**Risks:**

There are no anticipated risks to people who complete the survey. Completion of the survey may, however, lead some respondents to identify questions, concerns, issues, or worries associated with employment equity, workplace climate, and personal health. Thus, a list of workplace, health, and personal support services is enclosed.

**Use of the survey information:**

The Master's student working on the project will work with the Acting Director of IOE to interpret the findings from the survey and write a report for the Faculty. The report will be used by the Equity Committee, Dean, and Department Chairs to develop strategies and actions that foster an equitable and respectful work environment. The Acting Director of IOE will be providing suggestions and guidance about using the findings to develop effective strategies and actions.

In addition, the Master's student working on the project will further analyze the survey data within the next year for her thesis research. The student will seek approval for her study from the Health Research Ethics Board prior to conducting the data analysis.

Because the survey will be providing baseline information that will be used for strategic planning purposes, it is likely that additional surveys will be completed in the future to evaluate the Faculty's progress toward the achievement of goals and objectives related to employment equity and workplace climate. To measure progress, findings from future surveys will be compared with findings from the baseline survey. Thus, there is a need to keep the raw data from the current survey for 10 years. Although the raw data will be stored by the Chair of the Equity Committee, no employee of the Faculty of AFHE will have access to the raw data. Any future analysis of the data will be done by researchers outside the Faculty, and approval will be sought from the Ethics Committee before this occurs.

Any published or printed findings (final reports and Master's student thesis) will not contain information that could reveal the identity of the participants. Copies of the report will be made available to employees.

## Appendix D: First E-mail Reminder to Complete Survey

Dear Colleagues:

I am writing to update you about the progress of the Employment Equity and Workplace Climate survey that is being coordinated by the Faculty Equity Committee. Since the survey was distributed two weeks ago, 100 people have completed and returned it (approximately 30% response rate). Thank you to all those who have taken the time from your busy schedules to do the survey!

The results from the survey will be more accurate and useful with a larger number of responses. For those who haven't completed the survey yet, please accept this as another invitation to do so. If you return the survey (along with one of the two numbered tickets that were sent with the survey) by May 18, you will be entered into a **prize draw**.

I'd like to emphasize that the information you provide in the survey *will be anonymous*.

You can send your completed survey to the Population Research Lab, 1-62 Henry Marshall Tory Building.

Should you need a copy of the survey or if you have questions or concerns about the survey, please contact any member of the Faculty Equity Committee listed below:

- Deanna Williamson, Chair; 492-5770; [deanna.williamson@ualberta.ca](mailto:deanna.williamson@ualberta.ca)
- Jerry Leonard; 492-0107; [jerry.Leonard@ualberta.ca](mailto:jerry.Leonard@ualberta.ca)
- Debra Davidson; 492-4598; [debra.Davidson@ualberta.ca](mailto:debra.Davidson@ualberta.ca)
- Brenda Murdoch; [bmurdoch@ualberta.ca](mailto:bmurdoch@ualberta.ca)
- Jacquie Eales; 492-2865; [jacquie.eales@ualberta.ca](mailto:jacquie.eales@ualberta.ca)
- Donna Dosman; 492-3012; [ddosman@gpu.srv.ualberta.ca](mailto:ddosman@gpu.srv.ualberta.ca)
- Lorraine Dzuda; 439-0924 [ldzuda@gpu.srv.ualberta.ca](mailto:ldzuda@gpu.srv.ualberta.ca)
- Linda Prud'homme 492-4932 [linda.prud'homme@ualberta.ca](mailto:linda.prud'homme@ualberta.ca)

Sincerely,  
Deanna Williamson  
Chair, Faculty Equity Committee

## Appendix E: Final E-mail Reminder to Complete Survey

Dear Colleagues:

I am writing to provide you with another update about the Employment Equity and Workplace Climate survey that is being coordinated by the Faculty Equity Committee. At this time, 134 people have returned surveys, which is only a 41% response rate.

Thank you to all those who have completed and returned the survey. Your input is very much appreciated.

This is the **final request** to those of you who haven't done the survey yet. Please complete the survey and return it to the Population Research Lab, 1-62 Henry Marshall Tory Building *by June 4*. The findings from the survey will be used by the Equity Committee, the Dean, and Department Chairs to develop specific actions and strategies for promoting an equitable and respectful workplace that is conducive to high morale, job satisfaction, and personal and professional growth of all employees. *By completing and returning the survey, you will have input into the development of these strategies and actions.* The Equity Committee is hoping that the final response rate will be significantly higher than 41% as the survey results will be more accurate and useful with a larger number of responses.

I have attached the survey, as well as additional information about it, to this e-mail. I'd like to emphasize that the *information you provide will be anonymous.*

If you are unable to open and/or read the attachments, and or if you have questions or concerns about the survey, please contact any member of the Faculty Equity Committee listed below:

- Deanna Williamson, Chair; 492-5770; [deanna.williamson@ualberta.ca](mailto:deanna.williamson@ualberta.ca))
- Jerry Leonard; 492-0107; [jerry.Leonard@ualberta.ca](mailto:jerry.Leonard@ualberta.ca)
- Debra Davidson; 492-4598; [debra.Davidson@ualberta.ca](mailto:debra.Davidson@ualberta.ca)
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- Donna Dosman; 492-3012; [ddosman@gpu.srv.ualberta.ca](mailto:ddosman@gpu.srv.ualberta.ca)
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- Linda Prud'homme 492-4932 [linda.prud'homme@ualberta.ca](mailto:linda.prud'homme@ualberta.ca)

Again, thank you to those of you who have completed the survey.

Sincerely,  
Deanna Williamson  
Chair, Faculty Equity Committee

**Appendix F: Occupation Group Comparison for Job Demand; Instrumental Support and Psychosocial Support Scale Items Mean and T-test Scores**

	Mean (SD)		t-score (df)
<b><u>Job Demand</u></b>			
Workload manageable	<u>Professors</u> 3.56 (1.16)	<u>Admin</u> 2.32 (.99)	-4.604*** (77)
Work-life balance	3.30 (1.08)	2.16 (.62)	-5.907*** (72.89)
<b><u>Instrumental Support</u></b>			
Administrative and technical assistance is available	2.82 (1.36)	4.09 (.87)	4.889*** (59.94)
Materials and equipment is available	3.84 (1.22)	4.52 (.51)	3.545** (78.82)
<b><u>Psychosocial support</u></b>			
Person I report to treats me with respect	4.04 (1.22)	3.96 (.98)	-.271 (80)
Can raise workload concerns	3.52 (1.44)	3.68 (1.18)	.490 (77)
Feel comfortable raising personal issues	3.23 (1.53)	3.48 (1.08)	.833 (63.49)
Believe the intentions and motives of the person I report to are good	4.09 (1.24)	4.08 (.50)	-.039 (76.80)
Person I report to is willing to listen	3.82 (1.32)	3.67 (.87)	-.603 (64.77)
I have a sense of influence and involvement	3.63 (1.27)	3.38 (1.06)	-.845 (78)
I am given the appropriate authority to make decisions	3.89 (1.20)	3.84 (.69)	-.240 (73.57)

Note: The items in this table were reverse scored for the job demand scale i.e. higher score indicates lower level of item.

\*\*  $p \leq .01$ , \*\*\*  $p \leq .001$



**Appendix G: Principle Component Analysis - Rotated Component Matrix**

<b>Factor</b>	<b>Component</b>
* In general, in the past month I have been feeling ... (in excellent spirits; in good spirits most of the time; I have been up and down in spirits a lot; in low spirits most of the time; in very low spirits)	.748
In general, in the past month I have been bothered by nervousness or worry ... (extremely so-to the point where I found it difficult to work or take care of things; quite a bit; some – enough to bother me; a little; not at all)	.886
In the past month I have felt under stress, strain or pressure ... (yes – almost more than I could bear or stand; yes – quite a bit of pressure; yes – some, more than usual; yes – some, but about usual; a little or not at all)	.801
* In the past month I have started the day feeling fresh and rested ... (every day; most every day; fairly often; less than half the time; rarely or none of the time)	.859
In the past month at the end of the work day I have felt tired, worn out or exhausted ... (every day; most every day; fairly often; less than half the time; rarely or none of the time).	.658

Rotation method: Varimax with Kaiser

\*Items recoded for consistent direction of responses