

A Rising Tide: Advancing Women and Leadership at the University of Maine Social Science Study

As part of the UMaine Rising Tide effort, the program goals, initiatives, and activities will be studied in order to expand the knowledge and literature base relative to women faculty in STEM and SBS fields. The study described below draws upon research across disciplinary fields including higher education, psychology, sociology, business, and women’s studies. This interdisciplinary approach will lend itself to a more comprehensive and multi-faceted understanding of the contexts and cultures that facilitate or impede the recruitment, retention, and advancement of women faculty at UMaine.

Conceptual Framework

The framework guiding the Rising Tide effort and the social science study is that of faculty satisfaction. Faculty satisfaction has been found to have a strong relationship with retention (August & Waltman, 2004; Blackburn & Lawrence, 1995; Gomez-Mejia & Balkin, 1984; Hagedorn, 2000; Jayakumar, Howard, Allen, & Han, 2009; Lee & Mowday, 1987; Olsen, Maple, & Stage, 1995; Rosser, 2004). Moreover, a lack of satisfaction, even among those faculty still at the institution, has also been found to have trickle-down effects for others (Ambrose, Huston, & Norman, 2005). Indeed, Ambrose et al. remarked, “It is equally important to understand the subtler dimensions of dissatisfaction that can lead even established faculty to feel disinvested and apathetic. These sorts of morale issues have implications for the retention of still other faculty” (p. 804).

In 2000, Hagedorn introduced a model of faculty job satisfaction (see Table 1), drawing widely on Herzberg’s (1957) work. She divided her framework into two constructs, triggers and mediators. A trigger is “a significant life event that may be either related or unrelated to the job” (p. 6). A mediator, on the other hand, is a “variable or situation that influences (moderates) the relationships between other variables or situations producing an interaction effect” (p. 6), including demographic characteristics and environmental conditions as well as the presence of motivating (positive) or hygienic (negative) variables.

Table 1: *Hagedorn’s (2000) Model of Faculty Job Satisfaction*

Mediators			Triggers
<i>Motivators & Hygienes</i>	<i>Demographics</i>	<i>Environmental Conditions</i>	<i>Change or Transfer</i>
Achievement	Gender	Collegial relationships	Change in life stage
Recognition	Ethnicity	Student relationships	Change in family circumstances
Work itself	Institutional type	Administration	Change in rank or tenure
Responsibility	Discipline	Institutional culture	Transfer to new institution
Advancement			Change in perceived justice
Salary			Change in emotional state

Taken together, the framework of faculty satisfaction is inclusive of the myriad concepts heretofore studied in relation to women faculty in STEM and SBS fields, and therefore serves as an excellent guiding framework for the UMaine Rising Tide effort inclusive of the following:

- **Achievement** – Women faculty tend to publish and present at the same rate as their male peers but existing gender bias in academia often recognizes men’s achievement over women’s (e.g., Ellemers, Van den Heuvel, De Gilder, Maass, & Bonvini, 2004; Valian, 1998) and tends to see women’s achievement as owing to something other than ability (Valian, 1998).
- **Recognition** – Women faculty tend to have their research trivialized (Johnsrud & Wunsch, 1991) and consequently receive less recognition than their male peers (Clark & Corcoran, 1986; Olsen et al., 1995). Women also express experiences of not being “heard” by peers and their ideas unrecognized (Olsen et al., 1995).

- **Work itself** - Women faculty tend to have heavier teacher loads (Austin & Gamson, 1983) and more service responsibilities (e.g., Kulis, Sicotte, & Collins, 2002; Menges & Exum, 1983; Rosser & O'Neil Lane, 2002).
- **Responsibility**- Women tend to be excluded from important committees and decision-making (e.g., Aguirre, Hernandez, & Martinez, 1994; August & Waltman, 2004).
- **Advancement** - Women faculty are tenured and promoted less often than male counterparts (e.g., August & Waltman, 2004; Smart, 1991; Umbach, 2006).
- **Salary** – Women have consistently been found to be paid less than their male colleagues (e.g., August & Waltman, 2004; Nettles, Perna, & Bradburn, 2000; Smart, 1991; Umbach, 2006).
- **Ethnicity** – Women faculty of color face all the obstacles of gender compounded by racial discrimination and bias (e.g., Knowles & Harleston, 1997).
- **Institutional type** – Women tend to be underrepresented among research university faculty and women at research universities face much more stress and competition than do women faculty at other institutional types (e.g., Olsen et al., 1995; Ward & Wolf-Wendel, 2004).
- **Discipline** – The sciences, in particular, are very male-dominated and male-centric, causing more difficulties in recruitment, retention, and advancement of women faculty (e.g., Etkowitz, Kemelgor, & Uzzi, 2000; Fox, 2001; Kulis et al., 2002; Rosser & O'Neil Lane, 2002).
- **Collegial relationships** – Women faculty tend to face more obstacles in networking (Rankin, Nielsen, & Stanley, 2007) and sustaining positive mentoring relationships (e.g., Wasburn, 2007).
- **Student relationships** – Women also face discrimination in the classroom and encounter chilly climates (e.g., Aguirre, 2000; Aguirre et al., 1994; Hall & Sandler, 1982).
- **Administration** – Women faculty tend to feel excluded from important decision-making (Aguirre et al., 1994) at the administrative level of academia.
- **Institutional culture** – In higher education, culture is defined as “the collective, mutually shaping patterns of norms, values, practices, beliefs, and assumptions that guide the behavior of individuals and groups” (Kuh & Whitt, 1988, p. 12). These norms, values, practices, beliefs, and assumptions can serve as obstacles to women and other underrepresented faculty members (Aguirre, 2000; August & Waltman, 2004; Jayakumar et al., 2009).
- **Change in life stage** – Stages of a faculty career (early career, midcareer, late career) can play a role in faculty satisfaction (e.g., Hagedorn, 2000) and changes in life stage, particularly for women, can also trigger positive or negative feelings toward one’s job (e.g., Gilligan, 1978).
- **Change in family or personal circumstances** - The academic careers of women are more likely to be affected by changes in life or familial status (e.g., Grant, Kennelly, & Ward, 2000; Ward & Wolf-Wendel, 2004) and women faculty may wait longer to have children or marry/partner (Etkowitz et al., 2000).
- **Change in rank or tenure** - Women faculty are tenured and promoted less often (e.g., August & Waltman, 2004; Smart, 1991; Umbach, 2006) and changing rank can also play a role in faculty career satisfaction (Hagedorn, 2000) or research interests (e.g., Neumann, 2009).
- **Transfer to new institution** – Faculty who come from other institutions may experience a sense of culture shock, particularly in regard to new colleagues, new students, new institutional missions, and new responsibilities (Hagedorn, 2000). Women faculty in particular have a higher turnover rate than men faculty (Tolbert, Simons, Andrews, & Rhee, 1995).
- **Change in perceived justice** – Hagedorn (1996) also found that women faculty experienced more dissatisfaction when they perceived their salary as being less than their male colleagues. Other practices in addition to salary disparities, such as in promotion, hiring, awarding of tenure, or nomination for awards also play a role in faculty satisfaction (Hagedorn, 2000).
- **Change in mood or emotional state** – Mood has been found to play a strong role in satisfaction (Hagedorn, 2000). Given all of the issues listed above, women faculty may indeed experience negative emotions or moods in regard to their faculty positions.

Theories Guiding the Study

Several theoretical assumptions guide the social science study on the Rising Tide effort at UMaine. First, the work of Hagedorn (2000) in regard to faculty satisfaction will serve as the overarching conceptual

framework for the study. The myriad studies described above support the specific components of the faculty satisfaction model and will be utilized individually and collectively to inform the investigations detailed below. Second, the social science study is guided by an understanding of the problems and issues facing women faculty as owing to multiple intersecting organizational dimensions: the individual, the disciplinary, and the institutional systems. One way through which to view the intersecting dimensions of personal, disciplinary, and institutional factors that contribute to the satisfaction of women faculty is through the lens of systems theory. A system is defined as “a set of components or elements that are interrelated, interactive, and interdependent” (Bess & Dee, 2008, p. 94). Systems theory assists in “analyzing and explaining the behavior of two fundamental complex institutions in all societies – organizations and individuals” (p. 93). A system is generally composed of three elements: (a) inputs, including environmental characteristics such as external political, social and cultural factors, resources, and competitors; (b) transformation processes, including the interplay of the organization’s design with individuals, groups, and their particular roles; and (c) outputs, which include the organizational products, or in the case of higher education, educated students, research findings, services, employee satisfaction, and employee motivation and commitment (Bess & Dee, 2008). Systems are composed of subsystems or components, which carry out specific functions or tasks and are, in effect, miniature systems, including their own inputs, processes, and outputs. Within the context of higher education, systems theory assists in understanding how inputs and system components ultimately influence outputs or products. Viewed within the dynamics of the social science study, the inputs can be viewed as the surrounding environment for UMaine, including the funding allocated from the state level and surrounding forces in the regional area. The system components of study include the individual faculty members, their departments and colleges, and university administrators, with the output represented by faculty satisfaction and commitment to the institution.

Finally, the social science study is guided by a social constructivist perspective. This perspective “suggests that the organizational world is a human creation achieved individually and in groups. Organizational reality is created and recreated every day through interpersonal interactions” (Bess & Dee, 2008, p. 14). In other words, each individual in a particular organization brings his or her own unique frame of reference, which is made up of specific values, concepts, and ideas (Bess & Dee, 2008). Therefore, the underlying assumption in social constructivism is that each individual “will construct and interpret reality in a variety of ways” (p. 14). In the context of issues relating to retaining women faculty, for example, department chairs may view the problem very differently from faculty. Moreover, a female department chair and a female faculty member may see the issue distinctly from a male department chair or faculty member. A researcher using a social constructivist approach consequently examines the “specific contexts in which people live and work in order to understand the historical and cultural settings of the participants” (Creswell, 2003, p. 8). Taken together, social constructivism will be an important underlying assumption in the social science study as it will take into account how individuals’ beliefs about the organization differ and how these understandings contribute to or detract from the recruitment, retention, and advancement of women faculty at UMaine.

Study Hypotheses and Methods

The social science study will be constructed of several interrelated investigations that incorporate the guiding conceptual and theoretical frameworks while also focusing upon the defining characteristics that are unique to UMaine. The investigations represent a mixed method approach to understanding the cultures and contexts that contribute to or detract from the recruitment, retention, and advancement of women faculty. Specifically, a triangulation design will be utilized (Creswell, 2003), in that both quantitative and qualitative methods will be given equal priority and provide a more comprehensive understanding of the issues at play at UMaine. In addition, a triangulated design will allow for an off-set of the weaknesses of each method, wherein traditional quantitative and survey-based approaches cannot provide a more holistic view of the individual accounts (Weiler, 1985) and qualitative approaches are generally not able to provide representative or generalizable findings. In sum, this mixed method approach will allow for a holistic understanding of the issues facing women faculty departure at UMaine, thereby resulting in varied and innovative additions to existing knowledge about women faculty.

Given the relatively small size of the campus, confidentiality is of the utmost importance in any reporting of data and results from the following investigations. In all resulting documents, reports, manuscripts, and presentations, confidentiality of participants will be maintained through reporting disciplinary groupings (i.e., STEM and SBS) in lieu of departmental names along with pseudonyms of participants.

Hypothesis 1: Departments with high retention and promotion rates of women faculty exhibit more supportive cultures than those departments with low retention and promotion rates.

Faculty turnover rates at research institutions tend to vary between 2-10% per year (Harrigan, 1999); however, women faculty have been found to have higher turnover rates compared to those of their male peers (Tolbert et al., 1995). Moreover, women faculty have been found to have lower rates of promotion and tenure (August & Waltman, 2004; Smart, 1991; Umbach, 2006). The purpose of this investigation is to examine the organizational cultures in those departments that exhibit low versus high rates of turnover of their women faculty. This mixed method study will utilize institutional data to determine the rates of turnover in UMaine STEM and SBS departments since 2000. After these rates have been determined, departments exhibiting both high and low rates of turnover will be studied utilizing several methods. First, qualitative interviews of women faculty who have left the department will be contacted so that they may share their experiences. Second, interviews with current and past department chairs will also be conducted to solicit their opinions about their turnover rates. Third, observations of department meetings and events will be conducted to determine cultural conditions in the department over one academic year. Finally, interviews with women and men faculty will solicit their thoughts about the cultures and contexts that facilitate their specific turnover rates.

Hypothesis 2: Women faculty who exist as “solo” individuals in their departments (i.e., the only woman faculty member in their department) and women who exist in departments with less than a critical mass (less than 15%) display different traits and characteristics in relation to their peers who are in departments with a critical mass of women faculty or greater.

“A minority group (especially one that has traditionally been discriminated against) is easily marginalized when only a small presence in a larger population” (Etzkowitz et al., 2000, p. 106). A critical mass, or a “strong minority” of at least 15%, has been shown to downplay some of the effects of isolation and discrimination (Kanter, 1977). At the same time, some research has demonstrated conflicting findings in regard to critical mass (see Etzkowitz et al., 2000). The purpose of this investigation is to determine how the presence or lack of a critical mass of women faculty in UMaine STEM and SBS departments influences their experiences. Descriptive analyses of department demographics will be followed by qualitative interviews of women faculty in departments exhibiting a critical mass of women and those that do not. These interviews will ask women to describe the cultures of their departments and to describe experiences that were affected by the number of women in their department.

Hypothesis 3: The “Queen Bee” phenomenon exists in departments with less than a critical mass of women faculty.

In both the 2009 faculty climate survey, and the 2009 qualitative study of women faculty departure at UMaine, a similar issue arose. One faculty member, remarking about the cause of negative climate issues for women on campus, stated, “Women are part of the problem.” Indeed, women have been shown to contribute to climates of discrimination and bullying of other women in male-dominated settings as a result of their tokenized status (Kanter, 1977). This phenomenon, also called the “Queen Bee Syndrome,” has been demonstrated in male-dominated academic settings wherein more senior women may more harshly rate less senior women peers (Ellemers et al., 2004) or may even initiate gossip or other bullying behaviors (Twale & DeLuca, 2008). This investigation will examine the interactions of women faculty members in departments displaying less than a critical mass first through surveys of the women in these departments about their interactions with one another, followed by qualitative interviews of representative individuals.

Hypothesis 4: The striving aspirations of UMaine create stressful environments for its women faculty in STEM and SBS fields.

The concept of striving “is broadly defined as the pursuit of prestige within the academic hierarchy” (O’Meara, 2007, p. 123). UMaine has expressed its desire to be ranked among the top 50 public institutions and top 100 research universities in its 2006 strategic plan, thereby defining itself as a striving institution. An institution seeking to gain more prestige will often pressure its faculty constituency, in particular, to produce and garner more research support to assist in gaining prestige (Brewer, Gates, & Goldman, 2001), thereby changing the institutional culture through a new set of behaviors and attitudes (Becher & Trowler, 2001; Tierney, 1988). This investigation will examine how the recent striving aspirations of the UMaine administration have influenced women faculty in STEM and SBS fields. This mixed method study will be conducted first through an examination of descriptive data that document grant applications, publications, and national presentations over the past 10 years, along with tenure, promotion, and retention rates of women faculty in this same time period. This part of the study will seek to understand what trends, if any, exist in relation to the striving behaviors that emerged at UMaine during this time period. In addition, focus groups of women faculty in STEM and SBS departments will be conducted to qualitatively understand how these women feel about the university’s aspirations in relation to their current work and demands.

Hypothesis 5: The existing stop-tenure-clock policy and memorandum of understanding related to alternative to teaching assignments for faculty who have new children (2009-2010) laid the foundation for ongoing policy change and development in the larger contract process through the faculty union and its status in the larger University of Maine System.

Faculty unions are generally not commonplace at four-year universities. Indeed, only 21% of all faculty members at four-year public institutions are unionized (including part-time faculty and graduate teaching assistants) (Dobbie & Robinson, 2008). While the existence of faculty unions has generally signified more positive outcomes for its members, including satisfaction with pay (Gomez-Mejia & Balkin, 1984), the existence of a faculty union across the seven-campus University of Maine System (UMS) contributes to a more complex environment for policy changes given the inherent need for all campuses’ faculty to agree upon issues for ratification. Two work-life balance policies already exist, including the stop-tenure-clock policy and alternative assignment policy. The purpose of this investigation is to examine how the initiation and ratification of these policies occurred, including the obstacles encountered in the process. Through document analyses of faculty senate and union meeting minutes, union contracts, and negotiation materials as well as interviews with key faculty members involved in these processes, a better understanding of the process of policy implementation will occur.

Hypothesis 6: The programs and policies that result from the UMaine Rising Tide effort will result in increased satisfaction and retention among STEM and SBS faculty women.

Faculty satisfaction has been found to have a strong relationship with retention (August & Waltman, 2004; Blackburn & Lawrence, 1995; Gomez-Mejia & Balkin, 1984; Hagedorn, 2000; Lee & Mowday, 1987; Rosser, 2004). The proposed programs and policies that will result from the Rising Tide effort at UMaine are designed to improve faculty satisfaction among many dimensions of Hagedorn’s (2000) framework. In turn, it is hypothesized that faculty satisfaction will improve as a result of these efforts. To test this hypothesis, the Faculty Work Life Survey that was first administered in 2009 will be redistributed in subsequent years to track longitudinal views of satisfaction over time. In addition, data will be collected from those women faculty in STEM and SBS departments as they participate in Rising Tide programs and evaluated over time in regard to their satisfaction, utilizing the instrument created by Olsen et al. (1995). For example, women who receive a professional development grant will be asked to complete a survey related to their satisfaction. After the grant activities have completed, these women will be asked to complete this survey once again, as well as a year after the activities have culminated. These scores will be compared and contrasted along with open-ended responses about their experiences with the grant activities.