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Practicing gender or practicing science? Gender practices of women scientists

by

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A dissertation submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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ABSTRACT

The subtle biases women face in science, technology, engineering and mathematics (STEM) fields have been the subject of many studies and initiatives in recent years. Many programs hoping to increase the numbers of women in these fields and to contribute to women's advancement have focused on identifying and remedying gendered institutional barriers and practices that ultimately disadvantage women. This dissertation focuses specifically on one component of institutional barriers and practices: individual women's gender practices. The interactions in which women engage and the way women position themselves relative to other women professionally using gender practices contributes to the recreation of systemically gendered biases. Findings based on interview data from 30 women in academic STEM fields reveal that women draw on cultural, occupational and organizational expectations for gender to discursively position themselves as superior to other women. Discursive practices of differentiation and distancing allow women scientists to distinguish themselves from other women and align with the occupational and organizational requirements for success and professionalism within academic STEM fields. These discursive practices reproduce gendered cultural, occupational and organizational expectations, and, by extension, reproduce the gendered structures on which gender inequality in STEM fields is based.

CHAPTER 1: INTRODUCTION

When we think of the subordination of women, we often think of men and patriarchal structures and institutions as the oppressors. To a large extent, this is warranted. Theory and research have provided numerous accounts of structural components to gender inequality. Research has also demonstrated that micro-level interactions between women and men, and the practices in which men engage also contribute to gender inequality. Theory and empirical research, however, have largely overlooked the role that women play in the subordination of other women. If we, as a society and a culture, are ever to fully incorporate women into all aspects of society in an equitable way, we must pay attention to the subtle, sometimes surprising, sources of women's subordination. In order to do this, we must identify when, where, how and why women may contribute to the subordination of other women. If we can understand the conditions under which women subordinate other women, we can begin to devise means to challenge the variety of ways in which women are subordinated.

Existing research and theory have provided a great deal of insight into how cultural patterns of gender inequality are reproduced in organizations, institutions and micro-level interactions and practices (Acker 1990; Bird and Sokolofski 2005; Britton 1999, 2000; Butler 1993; Connell 1987; Martin 2001, 2003; Myers 2004; Pyke and Johnson 2003; Schwalbe et al. 2000). Past research focusing on micro-level interactions between women and men has provided us with a way of understanding some of the more complex and subtle means by which men subordinate women (Bird and Sokolofski 2005; Butler 1993; Connell 1987; Martin 2001, 2003; Myers 2004; Pyke and Johnson 2003; Schwalbe et al. 2000). One of the primary means through which men subordinate women in micro-level interactions is through *gender practices*. Gender practices (Martin 2003) are a set of activities available to be

performed in accordance with cultural gender expectations (354). Gender practices may also be manifested in discourse, or the ways in which people talk about concepts or verbally position themselves relative to others. Engaging in gender practices reproduces the gender arrangements, or the gender order of society and the gendered relations within it (Connell 2002; Martin 2003). Thus, by examining the gender practices in which women engage, we can begin to understand how cultural patterns of gender inequality may also be reproduced by women.

The gender practices in which workers engage have become a popular subject of investigation among scholars studying gender and work. Most notably, scholars have focused on how workers' interactions with one another contribute to gendered status hierarchies among groups of workers. For example, Williams (1995), Pierce (1995) and Martin (2003) have found that men's gender practices enacted in interactions with women contribute to a gendered hierarchy among workers. Martin (2001) found that men's gender practices enacted in interactions with other men also create a hierarchy of men/masculinities in the workplace. Still needed are studies that enhance our understanding of how women's practices affect other women (both positively and negatively) in the workplace and whether or not these practices have implications for relations between women and men. Do the gender practices in which women engage when interacting with other women in the workplace contribute to status hierarchies among women?

Science, technology, engineering and mathematics (STEM) fields are traditionally male-dominated. The male-dominated history of STEM fields has resulted in an occupational culture that privileges men and masculinity. We know from research on STEM fields that women in STEM often face a work environment that is hostile towards women and an

institutional structure that privileges male workers and masculinity practices. We know also that many, if not most, work organizations—including those that employ professionals in STEM fields—place a premium on employees who are able to minimize obligations outside of work while also placing top priority on their organizational roles. This "ideal worker" model is one of the many ways in which work organizations favor men over women (Acker 1990; Bielby 1991; Bystydzienski and Bird 2006; Ong 2005; Sheridan 1998; Valian 2005).

Workers in STEM fields are aware of what is required to meet the occupational and organizational definition of success. For the most part, occupational and organizational standards for success more closely approximate the lives of men and masculine gender practices (Ely 1994, 1995; Kvande 1999; Miller 2004; Ong 2005; Pierce 1995). Living up to occupational and organizational standards of success relies on approximating STEM-specific images of the "ideal worker." This is as true for women in STEM fields as it is for men. But how and to what extent do women engage in the practices necessary in order to live up to this image? Do all STEM women embrace current constructions of the "ideal worker?"

I focus the present study on women in academic STEM fields. Because STEM fields are male-dominated, women scientists experience gender in a highly salient manner (Ridgeway 1997). Women scientists' salient experiences of gender and the fact that the organizational structures of STEM fields are gendered may influence women scientists' practices. Women are under-represented in STEM fields, with fewer women than men pursuing college majors and careers in most of the sciences. Gender gaps in academic STEM fields are pronounced, with women holding fewer positions as faculty, chairs and deans in Universities. The traditionally male-dominated nature of STEM fields and the fact that there are still few women in these fields has led to several different theories on why women are

under-represented. Below, I review some of the attempts to explain why women are under-represented in STEM careers in order to describe the context in which this study takes place.

Women in Academic Science, Technology, Engineering and Mathematics

Efforts have been made to increase women's representation in science, technology, engineering and mathematics fields (STEM)[1] over the past 30 years (Blickenstaff 2005). Historically, women have made significant contributions to the sciences, but these contributions have often been overlooked by a field and a culture that believes that women are not suited for the sciences (Sheridan 1998; Kohlstedt 2006). Explanations citing sex differences in academic preparation and performance on tests as primary reasons for women's low representation in STEM fields have been discounted (Blickenstaff 2005; Bystydzienski and Bird 2006; Catsambis 1994; Clewell and Campbell 2002; Cronin and Roger 1999; Greenfield 1997). Research has revealed that girls and boys receive similar class grades and scores on achievement tests in math and science (Blickenstaff 2005; Bystydzienski and Bird 2006; Catsambis 1994; Clewell and Campbell 2002; Cronin and Roger 1999; Greenfield 1997). Therefore, in the past couple of decades scholars have turned their attention to other possible explanations for women's low representation in STEM fields.

Two of the more popular approaches to understanding women's under-representation in STEM fields include the "pipeline" approach and an approach that focuses on the climate or environment of STEM fields. The "pipeline" approach to understanding women's representation in STEM fields uses a pipeline (or funnel) as a metaphor to frame women's advancement in STEM throughout the educational trajectory. Despite their academic achievement in STEM fields, women's participation in STEM steadily decreases with each educational stage beginning in grade school and following through pursuit of a career in

STEM. For example, young girls express interest in science and math fields early in their educational careers, but as they age, interest begins to decline (Blickenstaff 2005). Still others receiving Bachelor's degrees in STEM fields choose a career in another field. Expressed interest and intention to major in science and math differs by racial category. For example, African American girls hold more positive attitudes towards science and math and perform as well as white girls in science (Hanson 2006). African American women are also more likely to report a science major in college than white women and make up a higher proportion of African American scientists than white women make up of white scientists (Hanson 2006). Suggestions for increasing the number of women in STEM fields include encouraging and providing extra support to girls and women throughout the educational trajectory. In other words, if girls and women can be "fixed," more will go into STEM fields.

While the statistics certainly fit the pipeline or funnel image, the pipeline approach does not explain *why* more women than men drop out at each stage (Cronin and Roger 1999). Some of the explanations as to why fewer women go into STEM or drop out along the way center on the culture or environment in STEM fields. Research has revealed that STEM fields are problematic for white women and women of color because of a lack of female role models as both teachers and as portrayed in text books; a chilly classroom climate and pedagogical style; a racialized, masculine worldview of science; and a curriculum that uses strategies that are more favorable to men (Blickenstaff 2005; Etzkowitz, Kemelgor and Uzzi 2000; Hanson 2006). All of these problems speak to the issue of cultural and occupational biases surrounding women's abilities and roles in society (Valian 2005) as determined by gender based assumptions. For example, teachers may not call on girls or students of color as often as white boys or expect girls or students of color to do as well in science and math

classes (Dingel 2006; Hanson 2006). These assumptions and the overall culture of STEM fields send explicit and subtle messages that STEM fields are not the place for women, especially women of color, thereby creating a barrier to women's entrance. These types of problems, in addition to gender and race based hostility or doubt surrounding women's presence in science and math majors in college, foreshadow the types of career experiences women often have when going into academic sciences. The doubt and hostility faced by many women, in addition to stereotypes regarding women's abilities and aptitude may contribute to certain practices among women in STEM fields. For example, in order to demonstrate that they are capable and professional, women may comply with many of the occupational and organizational expectations for an "ideal worker." Further, women may accept many of the occupational and organizational values that advantage men and masculine practices in order to survive within a field that is openly hostile to women and feminine practices. Acceptance of such values may be demonstrated by aligning with occupational and organizational values and suppressing any sentiments that do not fully support such values (Cohn 1993). This dissertation explores how the interplay of cultural stereotypes surrounding women's math and science ability and gendered occupational and organizational values and expectations in STEM fields influence women scientists' professional and gender practices relative to other women.

Overview of Chapters

In chapter two, I review the gendered organizations and gender practices literature in order to provide a framework for understanding women's experiences in STEM fields. Examining the gendered norms of both organizations and occupations are necessary for understanding the experiences of women in STEM fields and how micro-level interactions

among workers contribute to workers' experiences. The interaction of gender practices with gendered organizational norms contributes to gendered interactions among co-workers that often reflect and reproduce cultural gender relations and gender inequality.

In chapter three, I provide a theoretical framework for understanding how status hierarchies among women may be created, maintained and challenged. Research and theory explaining historical, institutional, cultural and social psychological processes that contribute to the sex composition and gendering of occupations and organizations are reviewed in order to contextualize the current state of women's experiences in STEM disciplines. More specifically, I review and link gender practices theory and research to gendered organizations theory in order to explain how gender practices within the workplace reinforce the gendered organization and hierarchies among workers. I then examine extant literature on women's gender practices in the workplace and highlight examples from previous research that demonstrate women engaging in practices that subordinate other women.

In chapter four, I give an overview of the research methods used to conduct this study. Semi-structured interviews were conducted with 30 women faculty members in STEM departments at a large Midwestern University. I discuss the potential advantages and disadvantages of my own standpoint on the research process and analysis. Finally, I introduce my respondents by providing an overview of each woman's position in STEM and information about personal circumstances that, according to previous research, tend to influence women's gender practices (e.g. marital status and children living at home).

Chapter five is the first of two chapters about this study's findings. This chapter focuses on the concept of *differentiation. Differentiation* is the term I use to refer to the tendency among women scientists to discursively set themselves apart from women in non-

academic occupations and non-STEM academic disciplines. Chapter five specifically focuses on women scientist's discursive acts of differentiation from women who are either employed outside of academia or from women who are employed in academia, but in disciplines other than STEM disciplines. The acts of discursive differentiation in which my respondents engage reveal that cultural gender expectations and professional work requirements of STEM fields influence how women scientists perceive themselves in relation to other women. Women scientists engage in differentiation in order to distinguish themselves from the "typical" woman who presumably does not have the innate ability to participate in a STEM field. Differentiation, as demonstrated in Chapter five, is a gender practice as it is motivated by cultural expectations and beliefs about women and stereotypical femininity.

Chapter six, the second chapter of this study's findings, focuses on the concept of *distancing. Distancing*, is the term I use to refer to the tendency for some women scientists to separate or dissociate themselves from other women scientists based on perceptions and interpretations of the appropriateness of other women scientists' practices given a particular context. In this chapter, I focus on women scientist's discursive acts of distancing from other women employed in academic STEM disciplines. The distancing in which these women scientists engage is based on occupational and organizational notions of professionalism. Women scientists are able to discursively attain status over other women by portraying themselves as more professional than other women scientists. The reasons women scientists cite for distancing from other women indicate that they expect women to engage in different professional practices than men. By holding women to a different set of standards than men, the women scientists, as shown in Chapter six, are not questioning or challenging the

structural gendered expectations and policies that create the discriminatory treatment women often endure in STEM fields.

Chapter seven provides a final overview of the key findings, including the implications these findings have for understanding how women's practices contribute to the subordination of other women. The theoretical implications of discursive acts of differentiation and distancing are also discussed as are practical implications for the studies findings. The limitations of this study are then discussed, followed by future research suggestions and suggestions for improving the status of women in STEM fields.

CHAPTER 2: LITERATURE REVIEW

Previous research provides insight into women's experiences, including the barriers to success and satisfaction that they face in STEM fields. Gendered norms, beliefs and expectations exist within organizations and occupations and are often based on masculine models for ideal employees. The gendered norms, beliefs and expectations within organizations influence the range of acceptable behaviors and practices among workers. These normative constraints determine the types of micro-level interactions in which workers engage.

Explaining Women's Experiences in Academic STEM fields

When it comes to understanding women's under-representation in STEM fields, early approaches favored a focus on individuals, focusing on beliefs about intrinsic ability and the encouragement of girls in science and math classes. As explained in the previous chapter, explanations that have centered on beliefs about "intrinsic ability" have been debunked (Blickenstaff 2005; Bystydzienski and Bird 2006; Catsambis 1994; Clewell and Campbell 2002; Cronin and Roger 1999; Greenfield 1997). Because there are no significant differences in intrinsic ability or motivation between women and men, subsequent approaches have focused on institutional processes, structures and practices that disadvantage certain individuals over others. Central among these approaches is Acker's (1990) gendered organizations theory. Understanding organizations as gendered is useful in understanding how gender practices interact with organizational norms in facilitating gendered interactions among co-workers. Previous literature suggests that within society, gender practices reinforce cultural gender arrangements and statuses (Connell 1987; Martin 2003). Similarly, as work

organizations are part of a broader culture, gender practices within work organizations may also reinforce organizational and cultural gender arrangements and statuses.

Academic STEM as Gendered Organizations

Acker's (1990) theory of gendered organizations is a useful perspective for understanding how academic STEM fields are sites in which gender relations are played out. Cultural gender beliefs are built into practices and assumptions, or organizational logics, that are integral to most work organizations and provide guidelines for behavior and interaction (Acker 1990). Workers conduct themselves in a gendered way on the job and gendered organizational structures and norms shape the criteria used to evaluate workers. Acker (1990) identifies a set of interrelated processes that contribute to the gendering of organizations. These include: creating divisions along gender lines (occupational sex segregation), reinforcing divisions through symbols and ideology (devaluing women's work and femininity) and the use of gender in creating organizational logic. Sex segregation, the use of gendered symbolism to reinforce sex segregation and create an organizational logic also influences workers individual gender identities and interactions with co-workers (Acker 1990). For the purposes of this study, I am most interested in exploring the interactional component of gendered organizations theory, but I assume the work organization (the university) as a backdrop for gendered interactions.

As gendered organizations, the organizational logics of academic STEM fields promote professional practices that are portrayed as gender neutral, but often create barriers to advancement for women scientists and contribute to harmful workplace interactions between women and men. Universities, as work organizations and work settings for academic STEM fields, are premised on the belief that the ideal worker is one unencumbered

by obligations outside the workplace (Etzkowitz, Kemelgor and Uzzi 2000). This belief and the occupational and organizational practices associated with it translate, in most instances, to the ideal worker being a man (Acker 1990). The ideal worker belief, embedded in the structure of STEM occupations, shapes evaluations of workers' performances, practices and interactions as well as criteria for success. Occupational and organizational practices and ideology, to the extent that they support this ideal worker model, will advantage men as a group over women (Acker 1990; Ely 1994, 1995; Etzkowitz, Kemelgor and Uzzi 2000; Kvande 1999; Martin 2001; Miller 2004; Pierce 1995). This "ideal worker" model creates conflicts for women when it comes to childbearing and family responsibilities. As a result, women often feel compelled to comply with the "ideal worker" models to the extent possible, often making modifications in their professional or personal lives in order to accommodate organizational models of an "ideal worker" (Etzkowitz, Kemelgor and Uzzi 2000).

Organizational logics in universities and in STEM fields also promote an image of a scientist that is most often white and male (Etzkowitz, Kemelgor and Uzzi 2000; Ong 2005; Turner 2002). This gender and race based imagery combines with normative standards for professional conduct to influence the types of practices and interactions in which workers engage. For example, practices that are stereotypical to masculinity, such as competitiveness, are encouraged within many STEM disciplines (Etkowitz, Kemelgor and Uzzi 2000). These practices are held as "professional" within many STEM disciplines and are used as criteria when evaluating the "professionalism" of other workers. Because they are a numerical minority (or token; Kanter 1977) and do not fit in with the traditional image of a worker in STEM careers, women and people of color are more likely to receive negative attention and criticism from co-workers hoping to identify some flaw or problem with their professional

performance (Beoku-Betts 2006; Jackson 2004; Ong 2002; Rosser 2006; Turner 2002). Thus, coping with the skepticism of co-workers and the gendered occupational context often prompts many women and people of color to comply with white, masculine models of "professionalism" in order to demonstrate that they "belong" (Etkowtiz, Kemelgor and Uzzi 2000; Kvande 1999; Miller 2002, 2004).

In addition to skepticism surrounding their capabilities and inclusion in STEM fields, women scientists and people of color, as tokens, must contend with other harmful interactions with co-workers in STEM fields. For example, women and people of color are often marginalized, isolated or excluded by white and male colleagues in mentoring, professional networks, decision making and information exchange, and collaborative research (Beoku-Betts 2006; Sheridan 1998; Fox 1991; Rosser 2006). Much of this exclusion has to do with the white, masculine culture of many STEM fields. White men in these fields share work styles, accept one another and promote other men far more than they promote women colleagues (Fox 1991). This can be particularly difficult and potentially damaging to a woman or person of color's career because a researcher often needs access to resources to do the kind of research that leads to publication (Zuckerman 1991). Difficulty in becoming part of a professional network may lead to fewer collaborative relationships, or being placed in a subordinate role in collaborative research. Collaborative research often produces more publications and access to research funding (Zuckerman 1991). In addition to potential difficulties in establishing research partnerships and establishing professional networks, women and people of color may also be pressured to take on more service-typed duties within the department or university, such as sitting on committees (Sheridan 1998).

Committee work and advising are not duties that are always valued in promotion and tenure decisions and make time management difficult for women (Rosser 2006).

The organizational practices and ideologies of universities and STEM fields promote gender and race differentiation and inequality and influence interactions between workers (Acker 1990; Britton 2000; Dellinger 2002, 2004; Etzkowitz, Kemelgor and Uzzi 2000; Martin 2003). While gendered ideologies and organizational logics play important roles in the construction and maintenance of gender inequality and hierarchies in organizations, micro-level interactions support and maintain structural inequality. Schwalbe and colleagues (2000) identify several processes that take place in small groups and face-to-face interaction that reinforce structural inequalities in organizations and societies. The processes identified by Schwalbe and colleagues (2000) provide insight into how symbols and meanings are created and then manifested in interaction in such a way so as to sustain patterns of inequality. In the next section, I will review the contributions that extant literature has made in understanding how gender practices influence and/or maintain power and status hierarchies within organizations.

Gender Practices at Work

Gendered organizations theory suggests that who succeeds in any organization is often influenced by gendered expectations that are embedded within the structure, symbolism and ideology of an organization (Acker 1990). Extant research on gender practices at work has demonstrated that individuals use and draw on gender in meaningful ways that contribute to the construction and maintenance of gendered status and power hierarchies (Acker 1990; Britton 2000; Dellinger 2002, 2004; Martin 2001, 2003, 2006; Pierce 1995; Prokos and Padavic 2002; Williams 1995). We can understand how power and status hierarchies are

reproduced and how individuals position themselves in terms of power and status by examining the ways that people enact gender in work organizations (Martin 2003). Micro-level gendered interactions between women and men contribute to barriers to women's advancement and satisfaction at work in a number of different ways. Below I review extant literature that illuminates the impact of micro-level gendered interactions on women's and men's status within the workplace. I examine three different types of interactions: men's interactions with women, men's interactions with other men and women's interactions with men. The extant literature on each type of interaction reveals how workers negotiate their status within their workplace relative to other workers through the use of gender practices. While there are other ways in which workers may attain status, the literature on the use of gender practices demonstrates how workers use gendered occupational and organizational expectations and norms as resources in dealing with gender based hierarchies.

Men's Interactions with Women in the Workplace

The research of Williams (1995), Pierce (1995) and Martin (2003), among others, has provided insight into how the gendered ways in which men interact with women at work demonstrate a status or power hierarchy. While not all men do gender in the same way and some men actively try to resist engaging in behaviors that may have negative consequences for women, the extant literature has identified some behaviors in which men engage that contribute to gender inequality at work. As gender is often practiced unconsciously, or with liminal awareness (Martin 2003), research reveals that men's gendered behavior at work tends to avoid or minimize interaction between women and men, particularly when men are "tokens" in female dominated occupations (Henson and Rogers 2001; Pierce 1995; Williams 1995). Williams, for example, found that within the context of female-dominated occupations

such as social work, elementary education, nursing and librarianship, men tended to engage in behaviors meant to maintain their masculinity and differentiate themselves from women. Williams describes the behaviors men use to differentiate themselves from women as "distancing strategies." Williams found that some men in her study chose more "masculine" specialties within their occupation as a way of defining themselves in more masculine terms and both distancing and differentiating themselves from women and other men in the less masculine specialties. Some men intended to go into upper level positions or positions of authority within their occupation as a way of maintaining their masculinity. Men were often encouraged by others to seek out upper level positions or were appointed to upper level positions. Similarly, Pierce (1995) found that, within the context of law firms, male paralegals were more likely to hold positions of authority over female paralegals.

Another way token men differentiate and distance themselves from women involves emphasizing the masculine aspects of the job or relying on stereotyped notions of acceptable masculine and feminine activities (Williams 1995). Williams found that male librarians often focused on the technology involved in automated library systems in talking about their job, while grade school teachers emphasized the prestige of the school at which they worked as a way of making the job seem more masculine. Williams (1995), Pierce (1995) and Henson and Rogers (2001) also found that male tokens tended to rename their work or misrepresent what they do in hopes of making is sound more masculine. When asked what they do for a living, male paralegals stated that they worked at a law firm (by simply saying the name of the firm; Pierce 1995); male temporary workers reframed their work as "word processing" or some other technology related position (Henson and Rogers 2001); and male librarians would not reveal what they did for a living in certain company (Williams 1995). In addition to

recasting the occupation in which they worked in more masculine terms, some men choose not to participate in feminine-labeled activities (such as baby showers, potluck dinners or informal social gatherings) with the women with whom they work (Pierce 1995; Williams 1995).

Another distancing strategy used by men took distancing and differentiating to a more extreme level. Williams (1995), Henson and Rogers (2001) and Pierce (1995) report that many of the men in their studies refused to comply with the "feminine" aspects of their occupations and engaged in behaviors meant to separate themselves from both the feminine aspects of their job and other individuals complying with these aspects. Williams (1995) refers to this strategy as dissociation, Henson and Rogers (2001) identify a similar strategy they call "refusing to do deference," and Pierce (1995) identifies strategies to avoid emotional labor among male paralegals. Men engaging in dissociation in Williams' study often played down the importance of their job and their interest in their job by condemning or ridiculing other members of their profession (especially other men), thereby distancing themselves as not only different than, but better than others in the profession. Henson and Rogers found that many male temporary workers in their study refused to engage in one of the unspoken requirements of temporary work: deference, a characteristic often associated with women and femininity. Similarly, Pierce found that male paralegals did not engage in emotional caretaking in the same way female paralegals did, nor were they expected to. By refusing to engage in these feminine-typed job requirements, the men in Williams, Henson and Rogers' and Pierce's studies maintained their own masculinity and the social superiority of masculinity over femininity.

When men are not tokens their interactions with women may result in the isolation, marginalization or exclusion of women. As previously discussed, women in STEM fields are often marginalized, isolated or excluded by male colleagues at work, which makes developing professional networks and gaining access to information and resources difficult (Beoku-Betts 2006; Sheridan 1998; Fox 1991; Rosser 2006). Men also emphasize differences and create distance between women and men, both socially and professionally (Sheridan 1998; Fox 1991; Martin 2001, 2003; Prokos and Padavic 2002; Rosser 2006). Male employers who choose to give high-profile or prestigious assignments to other male workers engage in marginalizing and excluding women employees, a behavior that also harms women professionally (Martin 2001).

The treatment of women may also take more overtly hostile and damaging forms, as in the case of sexual objectification and sexual harassment (Quinn 2002; Prokos and Padavic 2002) and treating women as subordinates (Martin 2001; Miller 2004). Sexual harassment at work is a form of power enacted by men over women, usually in response to the feeling that women are threatening men's jobs or men's status (Quinn 2002). Objectification and harassment may make women feel intimidated, fearful, and uncomfortable or unwelcome in a workplace and also serves as a way of devaluing women and thereby elevating men's status. Men also often make demands of women, make decisions regarding women, act paternalistically toward women or treat women as subordinates as a way of establishing dominance over women at work (Martin 2001; Miller 2004).

Men's Interactions with other Men in the Workplace

The ways in which men interact with other men at work also provides insight into how status and power hierarchies may be constructed at work. Martin (2001) found that men

may try to impress or demonstrate superiority over other men or otherwise draw attention to themselves and away from others. Martin refers to these behaviors as contesting behaviors, or contesting masculinities. Contesting behaviors are meant to establish dominance or superiority within the presence of other men. Men mobilize contesting masculinities with the intent to distance or separate themselves from others by establishing superiority or status, enacting control over or benefiting from the work of others (Martin 2001). Men may also engage in affiliating behaviors or affiliating masculinities, meant to align themselves with others so as to benefit from the affiliation. Affiliating may take the form of bonding through social interaction, sucking up, protecting other men from negative aspects of the workplace such as negative evaluations, helping and supporting other men, basing formal decisions on personal feelings towards a person and expressing fondness for each other (Martin 2001).

As alluded to, the interactions between men, either in the form of contested or affiliating masculinities, have the effect of excluding women or making women feel uncomfortable or frustrated (Martin 2001). Quinn (2001) points out that “girl watching” (sexually evaluating women) is a game played for men, by men with the purpose of establishing intimacy among men at work. The bond between men is established primarily because women are excluded through such means as topics of conversation or intentionally not inviting women to socialize (Miller 2004). Male “bonding,” no matter what manifestation it may take, serves as a type of interaction between men and excludes and marginalizes women at work in a way that establishes dominance for the men engaging in this bonding (Williams 1995).

Other scholars have examined how practices among men are informed by race, ethnicity and class-based understandings of masculinity (Chen 1999; Cheng 1996; Collinson

1988). Chen (1999) has demonstrated how Chinese American men strategically engage in practices in the workplace meant to hide perceived differences between themselves and white American men and thus convince the dominant culture that they are conforming to hegemonic standards of masculinity. Similarly, Cheng (1996) discusses how race-based notions of hegemonic masculinity dominant in the U.S. influence the evaluation of Asian men by white men in work-simulated settings. In both of these studies, Asian masculinity is seen as feminine and non-aggressive, thus influencing job performance evaluations by white male counterparts or self-evaluations by Asian men.

Collinson (1988) discusses the way that social class shapes interactions among men in the workplace. “Shop floor” men differentiated the masculinity of their own group with that of “managerial men.” Shop floor masculinity was marked by independence and the ability to take a joke, whereas managerial masculinity was defined as effeminate. The definition of shop floor masculinity was meant to promote solidarity and mark independence from the status system of the company in which the men worked. Displays of masculinity at work were encouraged primarily through the separation of shop floor and managerial masculinity, in which shop floor masculinity was constructed as superior to managerial masculinity. As the shop floor workers understood the constructions of masculinity in that workplace, they behaved accordingly (in most cases), thus reinforcing both types of masculinity as well as class differences.

Women’s Interactions with Men in the Workplace

Men’s interactions with each other also influences the way women interact with men. When men are engaging in contested or affiliating masculinities, women are left out and made to feel incapable of being part of the male network (Martin 2001). When faced with

work environments that are dominated by masculine standards and behaviors, women may adopt different techniques or strategies for interacting with their co-workers. Some of these techniques may be motivated by a desire to fit in to the organization or occupation, while others may be motivated by a desire to resist or redefine the work environment. For example, Miller (2004) and Kvande (1999) found that some women adopted a work persona that was complicit and consistent with the masculine standards of the occupation or organization. Through promoting the image of being the "same" as men (Kvande 1999) or assimilating (Miller 2004) to the ideal of the occupation, women behave in ways meant to elicit the least conflict and/or resistance from other organizational members. Assimilating (Miller 2004) and acting like "one of the boys" (Kvande 1999) are more overt in that women actively adopt the masculine practices and demeanors that are rewarded and received positively by colleagues. Still other women in engineering denied the salience of gender in their workplace (Miller 2004).

While some women demonstrate an adoption of masculine standards and work personas and benefit from their adoption of these practices, other women are resistant to these masculine standards. Kvande (1999) found that some women engineers did not comply with or agree with the values of their occupation. Some women actively criticize, reject and challenge the masculine work culture and struggle to participate on their own terms. These women actively resist male dominance and feel comfortable being "different" as women at work (as opposed to those who adopt masculine work styles and personalities). Other women distanced themselves from the masculine values of the profession while not overtly challenging them (Kvande 1999). Instead of working to reconstruct the gendered values and messages of the organization, those women who either consciously or unconsciously

complied with or disengaged by not challenging the masculine standards and values of an organization participated in maintaining the status quo of that organization.

Missing from the extant literature on gendered practices at work is research examining women's gender practices relative to other women. Part of understanding status hierarchies at work involves understanding the myriad ways these hierarchies may be constructed. Previous research has indicated that some women do participate and comply with masculine standards and norms (Ely 1994, 1995; Kvande 1999; Miller 2004). Do women scientists also do this? If so, what impact does this have on other women? Do women purposely and actively position themselves in superior positions relative to other women in the same ways that many men do? If so, how?

Understanding the impact that gender practices have on other women will help us understand how inequality is reproduced in everyday situations and interactions. While social inequality is structural, these structures are maintained by interactions at the micro-level. The extant literature on the production and reproduction of inequality has identified certain behaviors (either conscious or unconscious) that cast others into a subordinate position (Schwalbe et al. 2000). Similar to men's interactions with women and other men, distance and separation are two means by which inequality may be reproduced among women (as seen in Miller [2004] and Kvande [1999]). In Miller and Kvande's studies, the women were practicing gender in such a way so as to assimilate (or not) to the organization in which they worked. The gender practices literature has not yet addressed the ways gender may be practiced by women in a strategic way so as to subordinate other women. My study seeks to fill this gap by focusing on women's practices relative to other women in the workplace.

CHAPTER 3: THEORETICAL FRAMEWORK

The extant literature on gendered interactions at work has provided a foundation for understanding how gender inequality is reproduced in gendered interactions between women and men in the workplace. The literature on gender inequality in the workplace has yet to provide a thorough explanation of how interactions between women may also produce and reproduce status hierarchies between women in the workplace. As discussed in the previous chapter, gendered organizational structures and expectations often set the stage for gendered interactions between workers. Gender practices, actions and behaviors made available by the gender order (Connell 1987, 1995; Martin 2003) may be used to understand how women position themselves relative to other women in terms of power and status. Before applying the gender practices approach to understanding inequality between women in STEM careers, I review the extant literature on the use of gender practices in power relationships. Next, I lay out a framework for understanding how hierarchies among women might be constructed, maintained and challenged within traditionally male-dominated occupations. In particular, I review gender practices theory and the existing literature on gender practices. Finally, I propose a framework for understanding how the enactment of gender practices in the workplace interact with cultural and social psychological processes to impact women's interactions with one another in the workplace and the potential implications for power and status hierarchies among women.

Gender as Practice

The gender as practice approach is particularly useful in understanding how gender inequality is reproduced through interaction (Martin 2003). Practicing gender consists of the routines, thoughts and actions (configured in particular ways, namely femininities and

masculinities) that occur with liminal awareness and are central to the reproduction of cultural and structural gender arrangements (Connell 2002:81; Martin 2003: 352). For example, Martin (2003) recounts a story from her field work in which Tom, a vice president of a company asked Betsy, a vice president in that same company to answer a ringing phone. Tom practiced gender by calling on assumptions, made available by cultural gender expectations and arrangements, which cast women as help mates and subordinates to men. Betsy also practiced gender by complying with Tom's request. Though unconscious, or practiced with liminal awareness, the actions of both Tom and Betsy reproduce cultural and structural gender arrangements because they both complied with expectations about the roles of women and men.

Gender practices are significant in creating and recreating inequality as practices are configured according to the expectations of the gender order and culture in general. The types of gender practices in which people engage vary by an individual's race (Bettie 2003; Connell 1995; Glenn 1999; West and Fenstermaker 1995a), class (Bettie 2003; Connell 1982; Lareau 2003; Pyke 1996; West and Fenstermaker 1995a), sexual orientation (Connell 1995; Hamilton 2007), material life conditions and situational context (Bettie 2003; Martin 2003; Hill 2005).

Variations in gender practices or configurations of femininities and masculinities are indicative of power relations (Connell 1995). For example, Connell (1995) asserts that hegemonic masculinity is constructed in relation to femininities and other marginalized masculinities, thus producing a hierarchy of men/masculinities. Previous research has revealed that constructions of masculinities work to reinforce the privilege of middle-class masculinities over working-class masculinities (Connell 1987, 1995; Pyke 1996),

heterosexual masculinities over homosexual masculinities (Connell 1992), homosocial masculinities over heterosocial masculinities (Bird 1996) and white masculinities over racial and ethnic minority masculinities (Chen 1999; Connell 1995; Messner 1989). The construction of hegemonic masculinities in relation to other masculinities reinforces variations in status and power among different social groups by marginalizing and suppressing masculinities that are not hegemonic (Bird 1996; Connell 1995). In other words, the masculinities that attain the most status and are most likely to be hegemonic are those most often associated with white, middle class to upper class, heterosexual men. Moreover, the gender practices associated with hegemonic masculinities serve to differentiate social groups and the type of masculinities associated with each in such a way so as to identify one set of practices as superior to another.

Gender practices have also been used by men to produce and reproduce power relations between women and men by excluding, subordinating and marginalizing women and femininities (Bird 1996; Bird and Sokolofski 2005; Martin 2001, 2003). Gender practices used by men have contributed to the reproduction of the gender order through the exclusion, marginalization or objectification of women in public spaces (Bird and Sokolofski 2005), over the internet (Kendall 2000) or at work (Acker 1990; Beoku-Betts 2006; Britton 2000; Dellinger 2002, 2004; Fox 1991; Henson and Rogers 2001; Martin 2001, 2003, 2006; Miller 2004; Pierce 1995; Prokos and Padavic 2002; Quinn 2002; Rosser 2006; Sheridan 1998; Swerdlow 1989; Williams 1995; Yoder and Aniakudo 1997); the subordination of women in academia (Katila and Merilainen 1999) and marital relationships (Pyke 1996); or casting women as helpmates to men (Martin 2003).

Evident in the results of previous research, gender practices often result in the creation and recreation of power differences, either between women and men or between men and other men. The use of gender practices to establish power distinctions between men and other men has been theorized and discussed by several scholars (Bird 1996; Chen 1999; Martin 2001; Messner 1989; Pyke 1996), following the lead of R.W. Connell (1987, 1992, 1995). While gender practices reproduce the power differential between women and men, the fact that gender practices are also used to demarcate status between men is important to note. While the gender order is usually discussed in terms of power and hierarchy differences between women and men (Connell 1987, 2002), there is clear evidence that the gender order also applies to different types of masculinities and femininities. If middle-class masculinities are revered over working-class masculinities (Pyke 1996), then it is safe to assume that the gender order does not just maintain power hierarchies between individuals of different *sex categories*. Power is attained and reproduced through the *enactment of gender*. Individuals may benefit over other individuals of the same sex category through enacting the kind of gender (masculinities or femininities) with the most status in any given time and place.

Despite the proliferation of research on masculinities and power relations, little research has examined the use of gender practices in constructing hierarchies among women. Pyke and Johnson (2003) and Myers (2004) have demonstrated the privileging of one type of femininity over another within a specific context. Pyke and Johnson (2003), for example, found that the Asian women they interviewed constructed white American femininity as superior to Asian femininity, constructing a hegemonic form of femininity based on ethnicity. For the women in Pyke and Johnson's (2003) study, white American femininity is constructed as self-confident, independent, assertive and successful whereas Asian femininity

is constructed as submissive. The Asian women that valued white American femininity over Asian femininity were more likely to enact practices thought to comprise white American femininity when interacting in white contexts. The use of white American femininity (which most of the women interviewed identified with) over Asian femininity allowed the women engaging in this type of femininity to gain power and status due to cultural preferences for white American femininity. Asian women's use of white American femininity also served to reinforce the status awarded to this type of femininity while denigrating Asian femininity.

Similarly, Myers' (2004) examined Southern Ladyhood, a femininity most closely associated with emphasized femininity (a type of femininity oriented towards complying with women's subordination to men; Connell 1987). Myers' research reveals that "Ladyhood" is a class and race based set of practices. Among the women in Myers' study, status was achieved through the accomplishment of "Ladyhood," which required appropriate lifestyles, styles of dress and interactions with other women. A woman who exemplifies 'Ladyhood,' for example, is economically privileged, always complies with stereotypical notions of feminine appearance and supports and helps to maintain men's status over women. The women in Myers' study enforced the notion of "Ladyhood," subordinating each other through the denigration of women who did not fulfill the requirements. Further, like Connell's (1987) assertion that emphasized femininity supports hegemonic masculinity, "Ladyhood" also supports the domination of men over women, and, in this case, upper-class women over lower-class women. Similar to Pyke and Johnson's (2003) study, this study also reveals that a certain set of gender practices (used to enact a particular type of femininity) contains power in a particular context, thus those women able to embody this type of femininity have power over women who cannot.

The importance of studying women's use of gender practices to subordinate other women lies in the implications this has for gender inequality. Much of the previous research has discussed the ways in which hegemonic masculinity is supported and men are privileged through cultural and individual practices. Women often play a role in the support of masculinity and subordination of femininity and other women. As evident in the research of Pyke and Johnson (2003) and Myers (2004), women engage in practices that have implications for status and power among women. Identifying the practices that subordinate women in interactions between women and other women is important for understanding and combating attempts at subordination.

The workplace is a particularly fruitful site in which to observe gender practices (Martin 2003). Martin (2003) drew on workplace practices in her discussion of gender practices/practicing gender. Martin's (2003) study revealed the way men's practicing of gender works to marginalize and subordinate women, potentially contributing to women's limited advancement in corporations.

Further contributing to harmful gender practices in the workplace is employers' hierarchical ranking of groups of workers by sex, race and other demographics (also known as labor queues; Reskin and Roos 1990), which identifies "ideal" workers for a particular position, contributing to the sex composition of occupations. Over time, labor queues also affect occupational culture. For example, Ong (2005) discusses the white, masculine culture of physics in particular and science in general. Within any occupation, those not fitting the raced and gendered quality of that occupation may be faced with issues of marginalization or questions about their competence (Etzkowitz, Kemelgor and Uzzi. 2000; Ong 2005). In these

cases, much is to be gained from conforming to the raced and gendered quality of the occupation.

Structural Foundations of Gender Hierarchies

Labor Queues

In addition to demographics, employers also rank potential employees on educational attainment, experience and group membership all of which are viewed as determinants of productivity (Reskin and Roos 1990). This ranking system contributes to the sex or race composition of a particular occupation because hiring decisions are not based solely on job requirements but on preferences for certain types of employees (Reskin and Roos 1990). Because the perceived "ideal" worker is one unencumbered with other obligations (Acker 1990), men are seen as more productive by employers and thus tend to get the most attractive jobs (Reskin and Roos 1990). Additionally, employers favor white men in labor queues due to a combination of gender (in terms of a worker being unencumbered with other obligations such as child care) and race (in terms of the desirability of a worker of a particular racial category based on racialized meanings assigned to that category). Gender and race discrimination in hiring is illegal, but subtle forms of discrimination take place in the form of job segregation (Padavic and Reskin 2002). Padavic and Reskin (2002) point out that while African American women are being hired for clerical positions, they are segregated from white women in the lower paying clerical jobs. Similarly, Black men are segregated from white men when hired for service jobs and are also over-represented in low-skill jobs (Padavic and Reskin 2002).

The actions of employers and co-workers play a large role in the reproduction of race and gender economic inequality in society and in organizations. Ridgeway (1997) lays out a

social psychological framework for understanding how workplace interactions reproduce gender inequality. This framework may be extended to include race as well. According to Ridgeway, categorization of self and other using cultural schemas provides a way to make sense of other people. These cultural schemas activate expectations for characteristics and traits of persons based on stereotypes associated with sex or race categorization (Ridgeway 1997: 221; West and Fenstermaker 1995). Because sex and race categorization rests on presumed difference, status beliefs define difference in terms of superiority/inferiority. For example, traits are viewed as either superior or inferior based on the sex and race of the people who possess these traits (Ridgeway 1991). These cultural schemas and status beliefs contribute to organizational preferences for employees based on status characteristics rather than job requirements and qualifications.

Organizational preferences for a certain type of worker have implications for women of color in that workers of color may be funneled into race-typed jobs (or jobs dealing with customers or clients of minority groups; Collins 1989; Roos and Reskin 1992; Segura 1992). Women of color, especially, are at risk of being confined to the least attractive jobs within an occupation (Roos and Reskin 1992). Segura (1992) asserts that job segregation by race, ethnicity and gender reinforces a “gender-race-ethnicity” (a classification based on the intersection of gender, race and ethnicity) that keeps certain groups socially isolated and excluded from the dominant group positions. The “gender-race-ethnic” structure of jobs may reaffirm a workers sense of themselves as part of a “gender-race-ethnic” group. Thus, gender, ethnicity and race based organizational practices and structures play into a workers sense of identity as both a worker and a member of a “gender-race-ethnic” group. In most cases these

workers work under white men or women, further reinforcing gender, ethnicity and race based hierarchies (Segura 1992).

Acceptance of one's position in certain types of jobs within the labor market may rely on an individual's sense of themselves as a member of a particular gender, race or ethnic group. A woman of color who agrees to head an affirmative action or diversity committee may be further reaffirming her "gender-race-ethnicity." To the extent that a worker accepts expectations or standards for themselves as members of a particular "gender-race-ethnic" group, the gendered and raced hierarchical structure of an organization or the labor market may be reinforced. As Ridgeway (1997: 224) states:

> Referential standards for both 'people like me' and 'people in jobs like this' are beliefs about what is typical. From these beliefs people form expectations about the rewards to which they are entitled; these expectations in turn affect their willingness to settle for a given reward in a job or to press for more.

Thus, an individual's gender and racial identification influence their appraisal of their position in an organization or the labor market. This appraisal may inspire an individual to resist the organizational and structural position to which they have been allocated, or it may lead to their acceptance of that position.

Gendered Organizations, Occupational Culture and Gender Practices

Just as the conceptualization of gender as a practice posits that the social structure shapes actors practices, gendered organizations theory posits that the gendered structure of organizations also shape workers practices (Acker 1997; Britton 2000). Practices simultaneously shape and reproduce the gender order of society and the hierarchical structure of organizations (Acker 1990; Pierce 1995). As noted previously, organizations are premised on the belief that the ideal worker is one unencumbered with obligations outside the

workplace; historically, this has meant that the ideal worker is a male (Acker 1990). This belief, embedded in the structure of organizations, shapes evaluations of workers performance as well as criteria for success (Ely 1994, 1995; Kvande 1999; Martin 2001; Miller 2004; Pierce 1995). Workers construct work personas[3] in accordance with the demands of their occupation, the norms and ideologies of the organization or workplace and in accordance with gender and race based societal expectations (Dellinger 2002). The resulting effects of these expectations on workers are patterns of differential work execution by gender as well as differential occupational requirements for men and women (Dellinger 2002; Pierce 1995). Race, class and sexual orientation may also play into the development of a "work persona" (Collinson 1988; Keister 2004; Segura 1992) if a "work persona" is constructed in a way similar to that of a "gender persona" (Acker 1990).

Some occupations emphasizing masculine standards include law (Ely 1994, 1995; Pierce 1995), engineering (Kvande 1999; Miller 2005), science (Ong 2005) and management (Pini 2005). For women, managing gender is an important aspect of succeeding in such occupations (Ely 1994, 1995; Kvande 1999; Martin 2001; Miller 2005; Ong 2005; Pierce 1995; Yoder and Aniakudo 1997); women who appear too masculine are disparaged as are women seen as too feminine (Britton 2000; Ely 1994, 1995; Pierce 1995; Pini 2005). The culture of male-dominated occupations makes gender highly salient for women (Ridgeway and Correll 2004), resulting in a "balancing act" in which women must construct work personas that are consistent with both cultural expectations regarding gender and occupational expectations. The race composition of a particular job may further complicate this balancing act by requiring a worker to also consider race based expectations when constructing a work persona (Ong 2005).

Cultural Expectations and Women

Cultural status beliefs that prescribe greater status and competency to one group over another are instrumental in the perpetuation of inequality in the workplace (Ridgeway 1991, 1997; Ridgeway and Correll 2004). For example, Ridgeway (1991: 368) states: "people widely hold assumptions that it is more worthy or valuable to be male than female or white than black." According to Ridgeway (1991, 1997), status beliefs are activated in interaction through categorizing someone by race or sex. Within the workplace, occupational or institutional roles become intertwined with sex and/or race categorization in interpreting an individual's performance or behavior (Ridgeway 1997: 220). The result of status beliefs and sex and race categorization is the expectation that whites and men (in most U.S. work organization settings) are more competent than people of color and women (221). Status beliefs also impact inequality at work in that disconfirming stereotypes will not receive the same attention from those in advantaged positions as confirming stereotypes.

Ridgeway (1997) uses sex categorization and the resulting gender status beliefs to explain gender inequality and the construction of hierarchies at work. Ridgeway addresses the role of resources in evaluating distinguishing attributes (such as race, class or gender) by pointing out that when a person possesses greater resources, the accompanying attributes will be regarded more positively (222). For example, if a white male in an organization has greater access to resources and power, actors will perceive his race and/or biological sex as the reason for his advantage and thus evaluate "male-ness" and "white-ness" more favorably. It is important to note that while sex categorization may create status beliefs based on biological sex, it is gender that becomes revered and evaluated more positively (226). For example, feminine labeled jobs are seen as requiring less competence, compensation and

respect because the skills associated with the job are devalued (Henson and Rogers 2001; Kilbourne, England, Farkas, Beron and Weir 1994; Steinberg 1990; Williams 1995). The skills associated with feminine labeled jobs are also skills associated with femininity in general.

The valuing of masculine characteristics and practices over feminine characteristics and practices explains how and why some women may use gender practices to construct hierarchies among women. Masculine characteristics are valued over feminine characteristics in some occupations (Britton 1999; Etzkowitz, Kemelgor and Uzzi 2000; Fletcher 1999; Henson and Rogers 2001; Katila and Merilainen 1999; Korvajarvi 1999; Kvande 1999; Miller 2004; Pierce 1995; Pini 2005) and in general, making it difficult to value any practice considered to be feminine (Connell 1987, 1995; Britton 1999; McGuffy and Rich 1999; Reay 2001; Ridgeway 1997). The differential valuing of masculine and feminine characteristics is noted by women who may then employ strategies in an attempt to obtain status (Kvande 1999; Miller 2002, 2004; Reay 2001). Paechter (2006b), for example, argues that a girl adopting a "tomboy" persona is attempting to distance herself from femininity, renouncing the powerlessness associated with it and claiming the power associated with masculinity (257). Further, because preferences for a certain type of worker and for certain gender typed practices exist within the workplace, any workplace environment will be difficult for women to navigate. All women are initially evaluated and perceived in a similar way in male-dominated workplaces, setting the stage for women to take steps and make efforts to distinguish themselves from a universal perception of women. In the next section, I draw on women's knowledge of perceptions of women and femininity to argue that women may

engage in particular gender practices in the workplace with the purpose of establishing difference from or alliances with other women.

Hierarchies among Women

Given the occupational cultures of traditionally male-dominated occupations, women can engage in gender practices that subordinate other women. To make my argument I will use data from existing research to highlight gender practices in which women engage. Even though men's mobilization of masculinity at work is not always directed at women or done in interaction with women, it is still harmful and creates divisions (Martin 2001). Similarly, women's verbal representations of themselves or other women can be just as harmful as overt behavior directed at other women.

Defensive Othering, Fragmentation and Passing

Schwalbe and colleagues (2000) identify *defensive othering* as a strategy adopted by members of subordinated groups that works to deflect stigma and increase distance from the negative image of the group. Members of a disadvantaged group may disparage other members of their group as a way to dissociate themselves from the "other" more stigmatized members (425). Fragmentation is another strategy used to separate oneself from one's own social and cultural identity in order to decrease differences between oneself and members of the community to which one wishes to belong (Ong 2005). "Passing" may be seen as an act of fragmentation in that a woman of color may alter her appearance in order to comply with the expectation of what members of a particular group look like (Ong 2005). For example, Ong (2005) discusses the way women physicists of mixed ethnicity are able to "pass" as white in order to be seen as an "ordinary" physicist (read: white and male). "Passing" as a strategy of fragmentation may involve denying or diminishing other aspects of the self in a

way that delegitimates identities other than "white and male." By employing these strategies, individuals may gain advantage by denying their own membership in a group. This separation between oneself and other members of one's group works to grant legitimacy to the dominant group's superiority, reproducing inequality.

Just as hegemonic masculinity is constructed in relation to subordinated masculinity and femininity, femininity is also constructed in relation or opposition to other femininities (Bettie 2003). I argue that defensive othering and fragmentation are two ways of constructing femininity in opposition to other femininities in such a way so as to benefit from the opposition. For example, the women partners (senior women) in Ely's (1995) study on women's constructions of gender identity in a law firm reveals that partners choosing to adopt a more "masculine" style did so to purposely differentiate themselves from other women they perceived as having made a mistake in displaying feminine practices:

> I've seen many women set themselves up—and maybe I did this in the beginning before I learned a lesson, now that I think back on it—for being cast as feminist. Once they're labeled like that, no one will deal with them anymore. It's not in [the partners'] interest…Let's face it, this is a man's environment, and it's sort of Jock City, especially at my firm. But either you're going to stay there and deal with it, or you can leave…I just tend to join in and laugh with them (quoted in Ely 1995: 619).

> I think of the women as being whiners…Instead of being aggressive about something that bothers them, they whine about it, and I think it's a waste of everybody's time, and it annoys me…You don't win a law suit by whining to the judge, you win a law suit by making a logical and aggressive argument (quoted in Ely 1995: 619).

Here, gender practices serve to differentiate these women from those they perceive as having displayed the wrong kind of femininity.[2]

Women's behavior is noted by other women in the workplace. The junior associates (non-partnered women) interviewed in Ely's (1994) study also perceived women partners as

having enacted masculinity in order to succeed. These associates' comments indicate that they perceived the women partners as having differentiated themselves to the extent that women who do not act like them will be disadvantaged:

> The women who are going to become partners here are going to be women who act pretty much like men. They're not going to make things more tolerable for me, or change my chances of becoming partner (quoted in Ely 1994: 221).

> One participant described a woman partner in her firm as "just the opposite of why I described I like women. It doesn't seem to me that she's accessible at all as a person." Another said she expected "women partners to be nice to women because, gee, we're all in this together…" (quoted in Ely 1994: 221).

Similarly, Ong (2005) found that women of color in the field of physics used similar strategies in order to "pass" as someone fitting the traditional image of a scientist (white and male). The following quote from a Latina physics student demonstrates the way that separation of one's racial self from one's scientist self allowed those women able to pass as white to be accepted into the physics community:

> I definitely know that if I had been brown-skinned and [given] the typical skewed view that the United States has about Latin America, then it would've been a lot harder. You know, as difficult as women have it in the sciences, white women have it better than women of color, definitely…All of a sudden, people would think that I would come from some first-world nation, and even though I'm a woman, it's still higher…I have pale skin, people are interested in me until they find out that I'm from Central America (Ong 2005: 604).

This woman, and others able to "pass" as white, benefit from the perception of others in terms of their acceptance in the physics community (which also involved not hiding, but not revealing their ethnic heritage). Ong (2005) reports that while race and ethnicity were determinants of acceptance in the physics community, many of the women interviewed felt that gender was a more important determinant to acceptance. For example, an African American female physics student stated:

> All the women I found in sciences—oh man, it's really sad, actually—are not quote-unquote very feminine…The ones that ask a lot of questions and are really out there and being seen seem to be very forceful, have very masculine tendencies. Like I do myself. Like I talk a lot, I'll ask questions in class. I'm loud…And I found that the women that ask questions are the exact same way. It's almost like we have become more quote-unquote masculine in order to make it (Ong 2005: 604).

This student also reported that women displaying stereotypically feminine characteristics "did not make it" (Ong 2004: 604). In other words, as evident in the above quotes, not performing whiteness or masculinity led to exclusion or alienation within the physics community. Thus, race and gender intersect to create a set of challenges and strategies for women of color.

Resistance to women's use of masculinity as a defensive othering technique is also evident in the literature (Brooks and MacDonald 2000; Ely 1994, 1995; Pierce 1995). Most common is the tendency for those being "othered" to redefine their own style or approach as valuable (whether it be the domestic/feminine tasks involved in caring for patients or the refusal to take on a masculine work persona). By acknowledging that other women were suppressing or rejecting femininity as a legitimate professional persona, those resisting are also openly challenging masculine standards. Fletcher (1998, 1999) documents women engineers actively resisting the masculine standards of engineering and adopting a more relational approach in their professional lives. While relational work is "disappeared" in the organization Fletcher studied, the importance of this work in the organization is obvious, thus lending support to the notion that work practices based on traditionally feminine styles are just as important and effective as those based on masculine standards.

Trading Power for Patronage

Trading power for patronage involves accepting one's subordinate status and trying to benefit from relationships with members of a dominant group (Schwalbe et al. 2000: 426). Trading power for patronage may be adaptive for some members of a subordinate group but ultimately works to the detriment of other group members. I argue that this strategy contributes to the subordination of other women because it involves affiliating with men and rejecting women/femininities as legitimate actors in a professional field. Trading power for patronage reinforces the inequalities that contribute to the use of this strategy in the first place (Schwalbe et al. 2000). Instead of connecting and bonding with women in such a way so as to challenge the value associated with masculinity and the devaluation of femininity, potentially enacting change, women engaging in this strategy perpetuate the view that women's professional capabilities are not conducive to success. Evident in Ely's (1994, 1995) study, junior women's criticism of this behavior seems to be based on the senior women's complicity with male dominance and female subordination or negative female stereotypes, much like Connell's (1987) emphasized femininity:

> [They are] very, very deferential to men. I don't like that. And maybe it's not true. I mean, they must be good lawyers to have made it, I'll grant them that. But their demeanor is just very flirtatious. One of them, everyone feels is a manipulative bitch who has no legal talent…She's talked about all the time as having slept with numerous partners. It doesn't even matter if it's not true, if that's the way she's perceived, she's a bad role model (quoted in Ely 1994: 222).

> [The women partners are] just such lousy role models in one way or another. There's one who worked herself to death. And there's one who got there---it doesn't matter if it's not true, if that's the way she got there, she's a bad role model—her reputation is that she got there by laughing at all these guys' jokes and just submitting to that (quoted in Ely 1994: 223).

Both of the above quotes imply that the senior women's behavior reflects negatively on women in law in general in that it implies that women need to flirt, "submit" to men's jokes or need men's patronage to succeed. Women "trade on" their femininity in order to obtain better treatment and status from the male partners. Gherardi and Poggio (2001) interviewed female engineers and found similar behavior:

> I try to feign ignorance, asking for an opinion, trying to make the other person feel superior, so that I can get better treatment, because if you as a woman enter a male work setting and you're an analyst and begin to make comments, they cut you out. After which, after some time, when you manage to get yourself trusted again, then you can put yourself forward again and they'll listen to you (255).

While these practices may not overtly create the separation that defensive othering creates, they still work to create an environment that suggests that women must cater to men to succeed. Further, the alignment of these strategies with "emphasized femininity" underscores the underlying male dominance that makes this strategy possible.

Junior law firm associates' resistance to the trading power for patronage technique was evident in the lack of legitimacy they assigned to the authority of the women partners who used this technique in Ely's research (Ely 1994: 222). This serves as a sign of resistance in that junior associates are not validating the strategy of trading power for patronage or using one's femininity in a subordinate way. The recognition and criticism of women "pandering" to men is recognition on the part of junior women that subordinating oneself to men does not lead to legitimate authority or respect from other associates. This recognition and the claims made by junior women that they cannot see any of the women partners as role models (and presumably do not use any of the senior women as mentors) sends a message that this strategy is not sanctioned.

Despite the resistance just indicated, maintenance of hierarchies among women is made possible through rewarding the subordinating feminine practices (either through promotion or favorable evaluations from others). Ideas of what makes a successful lawyer, engineer or scientist are gendered as are the organizations in which these jobs are held (Acker 1990; Martin and Collinson 1999). As gender-typed conceptions of success are embedded in the structure of the organization as well as individuals own perceptions (in the form of work personas), defensive othering, fragmentation, "passing" and trading power for patronage become legitimated strategies. When these strategies are successful and result in promotion or some other status enhancement at work, they legitimate the gender-typed conceptions of success. As indicated in prior research, these strategies have been successful for women in male-dominated occupations (Ely 1994, 1995; Kvande 1999; Pierce 1995). While they confer success, they also create and maintain hierarchies among women within these occupations. When individuals believe these strategies are necessary or useful the chances that they will be challenged at the organizational level are slim.[3]

CHAPTER 4: METHODS

Given the theoretical arguments on which I am basing this study and because my goal is to better understand how the behaviors and interactions of women in academic STEM fields influence the work environment and have implications for status and power hierarchies, I am using a qualitative approach. In particular the research methods I am employing are semi-structured interviews. Also, as women scientists work in diverse and varied workplaces, I examine more than one academic STEM field in order to get a more thorough and accurate assessment of how variations in the workplace or the structure of work may influence the outcome of interactions between women.

Setting and Participant Selection

Science, Technology, Engineering and Mathematics (STEM) careers have been traditionally male dominated fields. Male dominated fields are masculinized (Britton 2000) in that the policies and practices to which those working in these fields are held are based on assumptions that hold men as the "ideal" employee. In particular, these fields hold expectations for employees that are more consistent with men's lives and masculinity, and, as a result, determine standards for rewards and success that privilege men and masculinity, and define the work men do as more important than the work women do (Acker 1990; Blickenstaff 2005; Britton 2000; Fox 1991; Jackson 2004; Rosser 2006; Sheridan 1998; Valian 1995; Zuckerman 1991). Because of the masculinized nature of these fields and the fact that they have been traditionally dominated by men, women may face unique challenges when it comes to both constructing a work persona that is consistent with the expectations and standards for success established in the field and in expressing themselves in feminine ways. Previous research has indicated that women must take steps to prove themselves

"worthy" of being a respected member of the STEM academic community (Etzkowitz, Kemelgor and Uzzi. 2000; Kvande 1999; Miller 2004). This is an important point to consider given my theoretical arguments regarding the use of gender practices in creating and maintaining the gender order. If a woman adopts the practices associated with an "ideal" employee in any of the male-dominated STEM fields, she could potentially reinforce the masculinized nature of that field and establish hierarchies between herself and other women based on the strategic use of gender practices. More importantly, the actions of both men and women may cast women into subordinate positions, making the workplace climate of STEM careers even more difficult for women to navigate.

Because the purpose of this study is to understand how the gender practices of women in STEM fields influence the working environment and the effect this may have on status and power hierarchies among women, I chose to recruit participants for this study from academic STEM departments at a Midwestern University. Academic STEM departments were chosen as sites for data collection because research has revealed that the barriers women face in academic STEM fields are due, in large part, to the masculinized nature of these fields and of academia in general (Acker 1990; Blickenstaff 2005; Britton 2000; Fox 1999; Jackson 2004; Rosser 2006; Sheridan 1998; Valian 1995; Zuckerman 1991).

Female tenure-track faculty members comprise 34 percent of all tenured and tenure-eligible faculty at the Midwestern University from which my sample was drawn. Of all tenured and tenure-eligible female faculty members, 3 percent are classified as African American, 0.3 percent as American Indian/Alaska Native, 9 percent as Asian/Pacific Islander, 2 percent as Hispanic and 85 percent as White/Other. In all, women of color comprise 5 percent of all tenured and tenure-eligible faculty members, while white women

comprise 29 percent of all tenured and tenure-eligible faculty members. Within STEM fields, women comprise 18 percent of all tenured and tenure-eligible faculty members (Iowa State University 2009).

I sent a total of 70 recruitment letters to every known female faculty member in 17 selected academic science, engineering and math departments at a Midwestern University in the summer of 2007. I did not include STEM departments already participating in other known research studies. I selected participants based on their appointments as tenured, tenure track or adjunct or affiliate faculty members in these departments. I used cultural assumptions about secondary sex characteristics of women to identify female faculty members using pictures posted on departmental websites. For departments that did not post pictures of faculty members on the website, I relied on the first names of faculty members in making my decisions. Approximately 1 to 1 ½ weeks after recruitment letters were sent, I contacted each woman by email inquiring about whether or not she was willing to do an interview. Of those that responded, interview times and locations were arranged via email. Only five women declined via email, and 35 did not respond to my follow up email.

I conducted all interviews personally; each one lasted between 40-120 minutes. Most of the interviews were conducted in the offices of my respondents, with the exception of 2 who wanted to meet in coffee shops. All but one of my respondents allowed me to audio-record the interviews. All audio-recorded interviews were transcribed verbatim. Professional transcribers transcribed 19 interviews. I transcribed 10.

My final sample is comprised of 30 women in 13 academic science, engineering and math departments: Chemical and Biological Engineering; Agricultural and Biosystems Engineering; Electrical and Computer Engineering; Computer Science; Chemistry;

Biophysics, Biochemistry and Microbiology (BBMB); Mathematics; Statistics; Veterinary Microbiology and Preventative Medicine (VMPM); Veterinary Pathology; Veterinary Diagnostic and Production Animal Medicine (VDPAM); Biomedical Sciences and Veterinary Clinical Sciences. The racial composition of my sample is as follows: 3 Asian/Pacific Islander, 2 Hispanic, 25 White/Non-Hispanic. I interviewed 9 Assistant Professors, 9 Associate Professors and 12 Full Professors (Table 1). Included in my sample are four non-tenure track respondents. These respondents held appointments as adjunct professors (e.g. Adjunct Associate Professor) or research collaborators with faculty rank (e.g. Full Professor, Associate Professor) in the departments from which they were recruited. The rank title (e.g. Full Professor, Associate Professor, Assistant Professor) of these non-tenure track faculty respondents is used to identify their rank in Table 1.

Table 1: College affiliation and rank of respondents.

	Assistant	Associate	Full	Total
College of Engineering	3	1	3	7
College of Veterinary Medicine	5	4	4	13
College of Arts and Sciences	1	4	5	10
Total	9	9	12	30

Data Collection Methods

Semi-Structured Interviews

Similar to previous studies examining the implications of gendered interactions and the use of gender practices in the workplace (Ely 1994, 1995; Martin 2001, 2003; Pierce 1995; Williams 1995), this study used semi-structured interviews to uncover the extent to

which women may participate in and reproduce gendered status hierarchies. Semi-structured interviews allowed me to compare the responses of my participants and provided the freedom to follow up on any themes or issues posed by the respondent (Maxwell 2005). Semi-structured interviews allowed me to get an in-depth look into the particular interactional strategies women may use to enhance their status relative to other women as well as their experiences of the behaviors of other women in their workplace. Allowing women to explain how they go about doing their job, managing their work and interacting with co-workers provides much insight into whether or not women engage in behaviors meant to either differentiate themselves from or establish alliances with other women.

Other researchers have conducted interviews with the purpose of understanding how workers interpret and experience the gendered actions of their co-workers and the gendered nature of their occupation or organization (Ely 1994, 1995; Martin 2001, 2003; Pierce 1995; Williams 1995). I developed my interview schedule with these studies in mind, writing questions that allowed me to examine the respondent's perceptions and experiences of her co-workers as well as the mechanisms by which she constructs her own work persona, performs her job and interacts with co-workers. I developed questions under five main categories: Entrance into job, enjoyment of work, success in job, workplace relations and work/family balance (Appendix A).

Entrance into job.

I began each interview by asking my respondents about their reasons and motivations for choosing their occupation. This section of the interview allowed me to learn about their life prior to their decision to pursue an academic career in their chosen profession. This

portion of the interview also allowed me to appraise each individual woman's personal disposition and early childhood motivation for particular types of work or interests.

Enjoyment of work.

Understanding how women feel about their occupation helped me assess which aspects of work as scientists my respondents find to be most enjoyable and why. This line of questioning opened the door for my respondents to discuss any aspects of their jobs that they do not enjoy and their feelings about whether or not their colleagues contributed to their enjoyment of their job.

Success in job.

I asked each respondent to explain what she thought it took to be successful in her field and in her particular department within the university. This section of the interview allowed my respondents to talk about whether or not they perceived any obstacles or workplace conflicts for women in general. Questions posed in this section also allowed my respondents to discuss obstacles or conflicts they may have personally experienced, such as compromises they may have made in their personal or family lives to accommodate their career or the types of impressions they try to convey about themselves to others. I also asked them to compare themselves to their female colleagues on each of these points as a way of determining whether or not my respondents perceived themselves as similar to or different from the other women in their field.

Workplace relations.

I asked each respondent to talk about her interactions with colleagues, both in the workplace and outside of work. The degree to which each respondent felt accepted by others in her department and integrated within her department was assessed in addition to how

relationships or friendships were established both within and outside of the department. Respondents also answered questions regarding the extent to which women purposely establish formal and informal relations with other women. I also asked respondents to comment on the relations between women and other women, men and other men and men and women within their department. This section of the interview allowed me to further assess how my respondents experienced interactions with co-workers.

Work/Family balance.

Finally, I asked each respondent to comment on the division of labor between herself and her domestic partner (if she had one). In this section, I also asked questions about arrangements made with the department following the birth or adoption of a child, the level of support for family involvement within the department and the extent to which family was discussed informally with co-workers.

Data Analysis

Using NVivo qualitative software program, I first conducted open coding. Open coding refers to the identification and categorization of emergent themes, independent of a theoretical framework (Strauss and Corbin 1990). I then used focused coding (Strauss and Corbin 1990), also referred to as theoretical coding (Maxwell 2005), to look for themes that were consistent with the theoretical arguments discussed in chapter 3. To ensure that the focused coding identified elements that were consistent with my theoretical argument, I kept the following questions in mind when coding: 1) Is my respondent indicating that she engages in behavior or interactions that are meant to create distance from or establish alliances with her female colleagues? 2) Is my respondent indicating that she has positioned herself within her particular department/field in such a way so as to benefit from the

masculinized culture of the department/field? 3) Has my respondent indicated that she engages in behavior or interactions that cast other women into a subordinate position either in that interaction or that department?

Standpoint

My standpoint as a college-educated, white woman in her early 30s may have influenced the responses of my participants. The fact that I am (presumably) of the same sex category as my respondents, may have made the respondents feel as if they could be more forthcoming with me (Williams and Heikes 1993). The gendered context of the interview (Williams and Heikes 1993) may have allowed my respondents to feel as if they could discuss their experiences in a male-dominated occupation with me without judgment or critique because we shared a sex category. The research of Williams and Heikes has indicated that respondents are able to say things with less hesitation or censoring when talking with a person of the same sex. This was especially significant in my research when my respondents were discussing issues faced by women in STEM fields and how some of these issues are due to the masculinized nature of their field. Some potential disadvantages associated with my position as a young, white, female graduate student are those of status and rank. Because I am not a faculty member, I did not have similar status or job expectations in common with my respondents. This could have posed a potential disadvantage if my respondents felt as if some information was inappropriate to discuss with a graduate student. If respondents thought that institutional change within their University was necessary, they may have been hesitant to discuss these thoughts or any activities in which they may participate to enact change with a graduate student for fear that their professional reputation may be at risk. Further, my respondents may have perceived me to be

much younger than themselves, which may have led them to alter the way they answered some of my questions.

The Respondents

The women scientists I interviewed varied not just by department and rank, but by marital status and whether or not they had any children. In this section, I provide a brief "introduction" to my respondents, who were given pseudonyms. I organize this section into two sub-sections: tenured faculty and untenured faculty. Also included in the "introductions" is information about my respondent's marital status, how many children they have (if any), how many of their children are under the age of 18, and the percentage of women in their current department. Previous research has indicated that these factors may influence women's work experiences and perceptions. This information is presented in table format in Appendix B.

Tenured

Chandra is a tenured professor in the College of Engineering in a department with less than 20 percent women faculty members. Chandra is married with no children. Cathleen is a tenured professor who is also in the College of Engineering in a department with less than 10 percent women. Cathleen is married with two children, one of whom is under 18 years of age. Betsy, also in the College of Engineering is a tenured professor in a department with less than 10 percent women. Betsy is married with children under 18 years of age. Shari is also a tenured professor in the College of Engineering in a department with less than 20 percent women. Shari is married with two children, both under 18 years of age.

Robin is a tenured professor in the College of Veterinary Medicine in a department with less than 30 percent women. Robin is not married and has no children. Helena is a

tenured professor who is also in the College of Veterinary Medicine in a department with less than 20 percent women. Helena is married with three children, all under 18 years of age. Faye, also in the College of Veterinary Medicine, is a tenured professor in a department with less than 30 percent women. Faye is married with one child under 18 years of age. Julia is a tenured professor in the College of Veterinary Medicine in a department with less than 40 percent women. Julia is married with one child under 18 years of age. Bernice is a tenured professor who is also in the College of Veterinary Medicine in a department with less than 30 percent women. Bernice is married with 1-2 children, none of whom are under 18 years of age. I did not specifically ask my respondents how many children they had. In cases where the respondent did not specifically mention how many children she had, I estimated based on her responses to other questions. Sarah, also in the College of Veterinary Medicine, is a tenured professor in a department with less than 20 percent women. Sarah is married with two children, both under 18 years of age. Deborah is also a tenured professor in the College of Veterinary Medicine in a department with less than 40 percent women. Deborah is married with one child under 18 years of age. Barbara is a tenured professor who is also in the College of Veterinary Medicine in a department with less than 40 percent women. She is not married and has two children, both under 18 years of age.

Becky is a tenured professor in the College of Arts and Sciences in a department with less than 20 percent women. Becky is married with two children, both under 18 years of age. Lorraine is also a tenured professor in the College of Arts and Sciences in a department with less than 20 percent women. Lorraine is married with no children. Gertrude, also in the College of Arts and Sciences, is a tenured professor in a department with less than 20 percent women. Gertrude is married with three children, all over 18 years of age. Shirley is a tenured

professor who is also in the College of Arts and Sciences, is in a department with less than 30 percent women. Shirley is married with 4 children, most of whom are under 18 years of age. Leona is a tenured professor in the College of Arts and Sciences in a department with less than 20 percent women. Leona is married with one child over 18 years of age. Sue is a tenured professor in the College of Arts and Sciences in a department with less than 30 percent women. Sue is married with no children. Raquel is also a tenured professor in the College of Arts and Sciences in a department with less than 40 percent women. She is married with no children. Janet is a tenured professor in the College of Arts and Sciences in a department with less than 20 percent women. She is married with two children, both under 18 years of age.

Untenured

Brittany is an untenured professor in the College of Engineering in a department with less than 10 percent women. Brittany is married with no children. Nadine is an untenured professor who is also in the College of Engineering in a department with less than 10 percent women. Nadine is married with no children. Carrie, also in the College of Engineering, is an untenured professor in a department with less than 20 percent women. Carrie is married with one child under 18 years of age.

Marion is an untenured professor in the College of Arts and Sciences in a department with less than 20 percent women. Marion is married with 2-3 children, none of whom are under 18 years of age. Pam is also an untenured professor in the College of Arts and Sciences in a department with less than 30 percent women. Pam is not married and has no children.

Kristen is an untenured professor in the College of Veterinary Medicine in a department with less than 40 percent women. Kristen is married with two children, both

under 18 years of age. Justine is also an untenured professor in the College of Veterinary Medicine in a department with less than 40 percent women. Justine is married with one child under 18 years of age. Linda is an untenured professor who is also in the College of Veterinary Medicine in a department with less than 40 percent women. Linda is married with three children, all under 18 years of age. Amber, also in the College of Veterinary Medicine, is an untenured professor in a department with less than 40 percent women. Amber is married with no children. Beth is also an untenured professor in the College of Veterinary Medicine in a department with less than 40 percent women. Beth is married with no children.

In the next two chapters, I will present the findings of the study. These findings reveal the intricate interaction between cultural and organizational gendered expectations and individual women scientists' own discursive renderings of their own and other women scientists' professional conduct. Women scientists, in particular, draw on perceived differences between themselves and other women in discursively positioning themselves as different than other women. These two chapters also reveal that women scientists' verbal renderings of their own and other women's conduct constitute gender practices.

CHAPTER 5: DIFFERENTIATION

Culturally, women have been incorrectly stereotyped as lacking the innate abilities necessary to participate successfully in science, technology, engineering and mathematics (STEM) fields. Stereotypically feminine characteristics have been similarly devalued by both the general culture and within STEM fields. As a result, many women themselves devalue stereotypically feminine characteristics and make assumptions about the innate abilities of women in non-STEM fields. While research has demonstrated that there are no differences between women and men in math and science ability (Blickenstaff 2005; Bystydzienski and Bird 2006; Catsambis 1994; Clewell and Campbell 2002; Cronin and Roger 1999; Greenfield 1997), the male dominated history of many STEM fields has resulted in a set of occupational expectations that equate stereotypically masculine characteristics with professionalism and success and stereotypically feminine characteristics with unprofessionalism and lack of success. The education and socialization in many STEM fields further solidifies this devaluation of stereotypically feminine characteristics, with STEM participants often adopting stereotypically masculine characteristics and/or holding the belief that such characteristics are the most professional and most successful (Bielby 1991; Beoku-Betts 2006; Etzkowitz, Kemelgor and Uzzi 2000; Kvande 1999; Miller 2004; Ong 2002; Sheridan 1998; Turner 2002). Thus, for women in STEM fields, distancing themselves from stereotypically feminine characteristics and the women they perceive as displaying such characteristics can be useful in constructing an image of themselves that fits their discipline's ideal of the professional, successful scientist.

In this chapter, I use the concept of "differentiation" to refer to the tendency among women scientists to discursively set themselves apart from women in non-academic

occupations and non-STEM academic disciplines. Many of the women in this study made comments indicating that they believed they possessed intellectual abilities, organizational skills and personal commitment and motivations that the "average" woman does not.

Do women scientists position themselves in superior positions relative to other women? And if they do, how? The findings of this study reveal that women scientists positioned themselves relative to other women in three ways. First, some women scientists, when thinking about their own lives in relation to those of other women, focused on how personal educational commitment and the ability to deal with excessive time demands sets them apart from women in non-academic occupations. Second, when thinking about their professional lives, some women scientists identified themselves as different from women who are academics but who are not employed in STEM fields. Women who engaged in this type of differentiation were more specific and focused on the cognitive characteristics, abilities and professional requirements that set them apart from non-STEM women academics. Finally, some women scientists positioned themselves relative to other women academics in STEM disciplines in such a way so as to *distance* themselves from other women scientists. This group of women identified themselves as exceptional in their fields of science and as exceptional among women academics in STEM. This chapter will focus on the first two types of positioning: women scientists who position themselves as different from women employed in academia, but not in STEM fields and women scientists who position themselves as different from women who are not employed in academia or STEM fields. Chapter 6 will then focus on the third type of positioning: distancing.

Women scientists' practices of differentiation have many implications. Women scientists in this study work within an organization (the university) that has gendered

expectations and standards for academic scientists, and, as indicated in their comments, feel pressure to comply with occupational and organizational expectations that devalue women and stereotypically feminine practices and characteristics. For the women in this study, differentiation serves to devalue stereotypically feminine practices and characteristics as well as the women who exhibit such practices and characteristics.

Social psychological research and theory explains that individuals make basic distinctions between themselves and individuals they perceive as being similar to themselves ("in-group" members) and others they perceive as different from themselves ("out-group" members; Brewer 1991; Tajfel and Turner 1985). An individual's self-worth or self-esteem is linked to their ability to balance their similarity with "in-group" members and distinctiveness from "out-group" members (Brewer 1991). My findings also suggest that some women scientists attempt to increase their level of distinctiveness from women more than other women scientists do. Women scientists who perceive themselves as more similar to men than women, by virtue of participating in STEM fields, may feel compelled to dissociate from women and emphasize similarity to men. Women scientists who do not perceive themselves as more similar to men than women will dissociate less from other women. Noting difference, in any form, is the first step in the creation of symbolic hierarchies and is often used to elevate the status of one's own group relative to "out-groups" (Tajfel and Turner 1985). The types of differences my respondents note between themselves and other women progress from general—based on occupation—to specific—based on professional conduct. The first type of positioning in which my respondents engage—academic vs. non-academic differentiation—is indicative of the status of certain types of occupations over others. Women who engage in this type of positioning identify women employed outside of

academia or women who do not participate in paid labor as the primary comparison group. The women who engage in academic vs. non-academic differentiation note a basic distinction in the status of academic occupations over other occupations that presumably require less education, time and commitment and the status of paid work over unpaid work. While my respondents may not consciously reference or imply a hierarchy based on these criteria, the fact that they have chosen to comment on this difference is indicative of some level of understanding of the different status awarded to different types of occupations and different types of labor. Women who engage in the second type of positioning—academic disciplinary differentiation—are able to establish themselves as more extraordinary than women in academic disciplines other than STEM because of the presumed status awarded to the types of knowledge, time and energy necessary to comply with the demands of a STEM career. Women who engage in the third type of positioning—distancing (discussed in Chapter 6)—are able to establish themselves as more extraordinary than other women scientists based on their ability to comply with organizational notions of professionalism and professional interaction styles.

Differentiation

One theme that emerged from my interviews was that of *differentiation.* Respondents expressed sentiments that indicated they saw themselves as different from women outside of academia or women in other disciplines. Respondents' perceptions of difference can be further categorized by two sub-themes: academic vs. non-academic differentiation and academic disciplinary differentiation. These themes emerged in response to two categories of questions: one, questions asking the respondents to compare themselves with other women; and two, questions asking the respondents to talk about various aspects of their field

including what it takes to be successful, how they manage professional impressions of themselves and what types of work styles and interactions they engage in and observe in others. Because the women were asked to talk about several facets of their professional lives, respondents indicating they felt they possessed different traits did so in response to several different interview questions that asked them to compare and contrast themselves with other women and discuss the scholarly and intellectual requirements of their field in general. For the most part, women saw themselves as possessing more desirable characteristics and attributes than some discursively "othered" group of women. The women scientists in my study perceived STEM fields as occupations that require more time, energy and intellectual aptitude than non-academic occupations or non-scientific occupations in academia.

Though women scientists' comparison of themselves to women in other disciplines or occupations is not the primary purpose of this study, the differentiation in which some of my respondents engaged was directed at a number of different groups of women. The differentiation noted in this chapter seemed to emerge from women scientists' perceptions of themselves as leading lives that differ in significant ways from the lives of "generalized other" women (Mead 1934). By referencing a "generic" woman as a point of comparison, my respondents also reference cultural dualisms in how they view themselves in relation to other women. The first dualism is that of the academic vs. the non-academic and the second is that of the academic scientist vs. the academic non-scientist. These comparisons indicate the types of discursive practices women use to enhance and support their positions in symbolic status hierarchies.

Academic vs. Non-Academic Differentiation

According to the women scientists I interviewed, the professional requirements and demands of a career in academia set them apart from a discursively "othered" group of women who are not employed in academia. Noting the basic differences between themselves and women not employed in academia allowed my respondents to position other women as "out-group" members and thus increase their distinctiveness from these "out-group" members. My respondents discursively differentiated themselves from women who work outside of academia by highlighting the educational, intellectual and professional demands of their careers and jobs. The three primary themes, as articulated by these women scientists, centered on *intelligence and commitment, time demands* and the nature of *paid vs. unpaid work.*

Intelligence and Commitment

Two of my respondents commented on subtle cultural perceptions of individuals with degrees in science and engineering. Carrie, an untenured professor in the College of Engineering, in response to a question asking if she thought her occupation differentiated her from women in other occupations, explains that people outside of scientific and academic occupations tend to be intimidated by the sciences and do not have the ability to relate to someone whose occupation is in those fields:

> Yes, in the way that, if I'm at some, if I'm somewhere where I'm exposed to different people in a different social setting or something, you know, as part of the ice breaker we go around the room and say what we do, I get the, ahh, you know, the look like, oh, you know, don't touch her. She's just way too smart… I think even though I'm a woman there's still like the geek factor [laugh]. So that is different. I will try my hardest to avoid saying specifically what I do when I'm in a social setting and I'm not interested in promoting…(I: So there's intimidation of the science part of it?) Yeah, you know, and then I think as people get to know me, they'll just throw out there,

> 'Well, she'll know that, [female name] will know that, she won't agree with this.' I think they're almost intimidated by me, think that I must know all these different things that they don't. Really, it's not true, but… (Carrie).

Here, Carrie comments that "even though I'm a woman, there's still the geek factor." Carrie's comment references what she views as the tendency for others to associate science with "geeks" and suggests that Carrie believes that the average woman is not often associated with science. Thus, in Carrie's mind, others' perceptions of her are a reflection of how her profession sets her apart from women who are not academics and who do not work in academia.

Justine (Untenured Professor, College of Veterinary Medicine) explains that in addition to others having a hard time relating to an academic science career, those participating in academic sciences are probably motivated by more than just monetary gain. Responding to the same question as the one above (that Carrie responded to)--about whether or not she believed her occupation differentiated her from women in other occupations, Justine explains:

> I think any occupation by nature of the occupation itself says something about who you are…As I joke with my younger brother, the fact that I'm a doctor-doctor [DVM and PhD] in a degree that most people don't even understand what I study just makes me a dork in general (Justine).

Justine's comments, like Carrie's, indicate that she believes that science is perceived by others to be a highly selective and challenging occupational field. Justine indicates that in her experience, other people think of scientists as much more intelligent than the average individual. Justine explained, further, that in her view, the fact that she chose to become a veterinarian who teaches at a university rather than practicing veterinary medicine in a non-academic setting, sets her apart from the average woman because it suggests that she is less

motivated by monetary gain. In Justine's words, she's a "bit of a bleeding heart" because she cares "more about the overall world" than she does "about how much money" she makes. Both Carrie and Justine's comments suggest that they think of themselves as unique in relation to the "average" woman, and that women who participate in non-scientific occupations are not attributed the same status in society as scientists.

Similar to Justine, when asked if there is something unique about the women hired in her field, Beth (untenured professor, College of Veterinary Medicine) talks about the pursuit of an academic career as indication of a commitment to doing what you "really love." As Beth indicates, non-academic careers pay better and allow more time for non-work related activities, therefore choosing an academic career, to her, is a greater commitment:

> Persistence…when you're a grad. student it's about 50/50 in terms of women and men and sometimes even more women, by the time you move into post doc you've lost a lot of the women who move on to that because they're going, they're going to do something else and you know at my post doctoral institution very few people…stayed in academic I think that's just you know you can get a job doing something else making a lot more money that doesn't require the same kind of commitment um, gives you a little more freedom outside of your professional life um, but I do think…it's a love of what you do and it's the inability to let anything stop you from doing it… (Beth).

Beth specifically references a choice between an academic career and a non-academic career that some of her colleagues have made. According to Beth's comments, academic careers require a greater level of commitment in time and willingness to accept less money. Those who continue on from graduate school to pursue a post-doctoral position and then a position in academia, according to Beth, demonstrate more persistence due to the added requirements at each stage of pursuing a career in academia. Beth explains that more women leave academia prior to pursuing a post-doctoral position because they know they can get a job making more money outside of academia, thus the women who are hired for academic

positions have demonstrated the persistence required to fulfill new requirements at each stage in the process. Like Justine, Beth is also saying that choosing a career that doesn't pay as well as the alternative and places more demands on a person is indicative of some type of internal motivation and commitment to either do what you "really love" or work for the greater good. Implied in Justine's and Beth's comments is that this type of commitment and motivation is more noble and respectable.

The types of discursive differentiation in which Carrie, Justine and Beth engage position them as having a higher status relative to other women based on occupational choice. By differentiating themselves from a "generalized other" woman based on their participation as a professional in academia, Carrie, Justine and Beth are noting a general difference in occupational choice. These basic differences reference an implicit hierarchy of women based on the level of education and level of commitment required to participate in academia.

Time Demands

Respondents also identified the time demands that an academic position places on individuals as a point of differentiation. The inclusion of time demands in comments made by women scientists is also indicative of other demands that an academic career places on an individual. Securing grants, publishing, teaching and service work are all time consuming. Academicians often work at home in the evenings and on weekends to meet all the expectations of an academic career. When asked if she felt her occupation differentiated her from women in other occupations, Becky, a tenured science professor in the College of Arts and Sciences, referenced time demands:

I wouldn't say that science does. I think being faculty at a university is a job

> that sort of never quits. You take it home with you at night and so to that end yes, um, but I wouldn't say that that's particular to science (Becky).

Similar to Becky, when asked if she had ever experienced any personal or professional conflicts in participating in her occupation, Robin, a tenured professor in the College of Veterinary Medicine, replied:

> Well, um, you know, it's not always easy to go where the job takes you I think and spend the amount of time it requires to be successful. It's just not an 8-5, five day a week job, it's not. And so, there are trade offs I guess, is the best way I can put it (Robin).

Inherent in Becky and Robin's discussion of time demands is the required level of commitment to work in a career that places such demands on one's time. Linda, an untenured professor in the College of Veterinary Medicine, also talks about the commitment to working in a career that places heavy demands on a person. When asked if she felt there was something unique about the women hired in her field, Linda replied:

> I think they tend to be kind of self-sufficient and, again, have a strong commitment to success in the profession because of the time commitment involved and especially if they want to balance a family as well. That may be true of any career but there are…I think it takes perseverance (Linda).

The time demands that an academic career places on a person is clearly noted by many of my respondents. Women scientists understand that they are held to certain expectations and requirements that place such demands on their time. In discussing the time demands of an academic career, Beth and Sarah (tenured professor, College of Veterinary Medicine) refer specifically to the fact that they must approach their lives with their occupational demands in mind. In other words, these two women indicate that they approach time management in terms of fitting everything in. When asked if they thought their occupation differentiated them from women in other occupations, Sarah replied:

> …My experiences and my expectations and how I have to, how I have to conduct my life in terms of trying to fit things in as best I can certainly [is] different for me and the other people that have similar jobs as I do compared to, you know, somebody that has a job they don't take home at night or have a part-time job doing something where they just kind of go and do something that somebody else tells them to do for a certain number of hours. And then …different than other people that I've known, for example, the, um, work in a factory or as a waitress, or…(Sarah).

Beth replied similarly:

> Maybe in some other occupations I don't, I mean it's a very demanding occupation… so in a kind of demanding occupation way it certainly changes the way I look at time outside of work and that kind of thing because you have, it requires a lot of time (Beth).

Not only do these respondents have limited free time, but the way they think about and approach time is largely dictated by the demands of their career.

Shari, a tenured professor in the College of Engineering, identifies the types of stressors associated with different occupations as a point of differentiation between herself and her friends. Her friendship group is comprised of women in fields outside of science and outside of academia. When I asked her if it was easier for her to maintain friendships with a group of women that were not under the same stress and time pressure of an academic career, Shari replied:

> Most of them have more time than I do. Well, I shouldn't say…I should qualify that, I shouldn't say they have more time than I do, they have different levels of stress than I do. Different stressors, you know, they could have more time than me but they have financial stress, so…(Shari).

While Shari qualifies her statement by acknowledging the different stressors associated with different occupations, she does see her occupation as requiring more time than the occupations of her friends.

Paid vs. Unpaid Work

While some women scientists saw themselves as different from other women due to their participation in academia, others saw themselves as different by virtue of having a job outside of the household. In general, the occupation in which a person works often means that they lead different lives based on both the requirements of that occupation and the ways in which they must balance other aspects of their life with their paid work. The women in this section also indicate that they feel they lead different lives than women who do unpaid work due to their being employed in the paid labor market. For many of my respondents, their occupation influences much of the way they understand themselves, including how they see themselves in relation to other women.

Responding to a question about whether or not she felt her occupation differentiated her from women in other occupations, Kristen, an untenured professor in the College of Veterinary Medicine, made a distinction between herself as an employed professional in a particular field of Veterinary medicine and women whose primarily responsibility is taking care of children:

> I think being a [field of veterinary medicine] distinguishes, not distinguishes, what's the word? Sets me apart from normal society because [field of veterinary medicine] is not a particularly glamorous or pretty field, but um, I think the fact that I work outside the home probably sets me apart from women who work in the home, and I hope they work very hard in the home, that's the bigger change. [I: So separation from housewives or women that do their professional work in their home?] Mothers whose primary job is, and sole job is to take care of children (Kristen).

Linda also saw herself as different from women who work in the home. When asked if there were any aspects of her work life that benefited her at home, Linda, an untenured professor in the College of Veterinary medicine replied:

> …If I were a stay-at-home mom, probably an issue that came up with one of my children or my relationship with my husband would seem more overwhelming if I had only that to think about and so I think both the workplace has benefited somewhat from family life and family life has benefited from having a career (Linda).

Linda's perception that she is different from women who work in the home is due, in part, to having to balance work and family. For Linda, the requirements of her job allow her a type of freedom from family issues taking over her focus and concentration. Linda is acknowledging that while she has to juggle work and family, women who primarily work in the home often have different stressors that can be overwhelming.

Deborah, a tenured professor in the College of Veterinary Medicine, also sees herself as different from women who are not employed outside the home. When asked if there were any aspects of her work life that benefitted her in her family life, Deborah comments that she sees herself as having accomplished more than women without jobs in the paid labor market because she has a full time job in addition to caretaking responsibilities:

> Well definitely the income (laughs) helps a lot, um, well yeah, because I think, you know, for the most part I feel good about what I've accomplished at work and I think that definitely makes you a broader person. I have many, um, not many, but I have several women friends who are stay-at-home moms, um, and they enjoy their lifestyles a lot, um, and I respect them for doing that because it is difficult, too, and they tend to be the ones that volunteer more at school and things like that so I totally respect what they're doing, but sometimes I really have to chuckle to myself because, you know, I'll get into a conversation with them and they'll be complaining about how much they have to do and, you know, I don't think they realize that I'm doing the same things that they're doing but also a full time job but I think you fill your hours no matter what, so... (Deborah).

For Kristen, Linda and Deborah, their jobs as academic scientists differentiate them from women who work in the home because of the demands of having a career in academia. While

Deborah acknowledged that her stay-at-home mom friends do difficult work, she sees the demands of her occupation as exceeding theirs because it is something "in addition to" her role as caretaker for her children. In general, paid labor is awarded greater status than unpaid labor. Women who have careers are likely to award greater status to paid labor over unpaid labor precisely because they have chosen to have careers and invest their sense of self-worth in their participation in the paid labor market. Though this distinction in status may not be conscious, the fact that Kristen, Linda and Deborah have referenced a difference from other women based on their participation in the paid labor force indicates that this distinction is meaningful to them.

Academic Disciplinary Differentiation

Academic disciplinary differentiation refers to women scientists and engineers' tendency to see themselves as different from women employed in academia but in disciplines outside of STEM fields. Women engaging in academic disciplinary differentiation note the status awarded to the types of knowledge, time demands, energy and personal motivations required to participate in academic STEM fields. The responses of some of my participants indicated that they felt they possessed different *cognitive or intellectual traits* than women in non-STEM disciplines within academia, that their discipline required greater *time and energy* than other disciplines or that their *interest* in science or engineering differentiated them from other women.

Cognitive Traits and Abilities

Respondents who expressed the belief that they possessed unique skills and abilities can be placed in two groups: those that believed they possessed these skills prior to entering their discipline and those who acquired these skills through their professional training. Those

who believe they inherently possessed unique cognitive skills and abilities prior to entering their disciplines suggest that these skills and abilities are necessary for success in their fields. For example, in response to a question about whether or not she believed her occupation differentiated her from women in other occupations, Brittany, an untenured professor in the College of Engineering replied:

> I don't think my occupation does, but I think the personality traits that I have that make me gravitate towards this occupation differentiate me a little bit. (I: In what way? Could you elaborate on that?) Well, I'm really, really practical. I've always been that way, and I'm not, my emotions don't usually play a very big role in my decision-making, and so sometimes that makes it difficult for me to relate to other women (Brittany).

In the above quote, Brittany is referencing a general "other" woman who possesses stereotypically feminine characteristics such as being guided by emotions rather that practicality. For Brittany, being "really practical" and not making decisions based on her emotions are two traits that many other women do not have. Not possessing stereotypically feminine characteristics makes her particularly well-suited for her occupation, presumably because these characteristics are not conducive to professionalism or success in her field.

Other respondents believed that their training enabled them to develop a particular set of skills that were valued in their discipline. The skills cited by these individuals are skills that they did not believe women possessed inherently, but that men did. These women scientists explained that their participation in a male-dominated scientific field allowed them the opportunity to develop skills that they would not have otherwise been required to develop. For example, when asked if she thought her occupation differentiated her from women in other occupations, Betsy, a tenured professor in the College of Engineering, referenced disciplinary differences:

> When you get trained to think like an engineer, which is, I guess, probably a fairly male way of thinking where you're very logical, you want to solve things, it's like, okay, I've heard enough, this is how you should solve the problem (Betsy).

According to Betsy's comments, being logical and wanting to solve problems is a masculine trait that women do not possess, but must receive training in a field like engineering in order to acquire.

The tendency among some of my respondents to paint their discipline as requiring a set of skills or personality characteristics that tend to be more highly valued is often done in reference to some "other" set of skills or characteristics. The "other" skills and characteristics that serve as a point of reference are those commonly attributed to women. For example, in response to the question about whether or not she felt her occupation differentiated her from women in other occupations, Marion, an untenured professor in the sciences in the College of Arts and Sciences, replied:

> I think I'm, I think it's a forced, maybe, opportunity to be more analytical. And to focus on technical writing skills that perhaps I wouldn't otherwise… (Marion).

Gertrude, a tenured professor in the sciences in the College of Arts and Sciences, made a similar distinction between those trained in scientific disciplines that have a reputation for being more difficult (such as chemistry or physics) and those trained in disciplines that have a reputation for being "easier" (such as biology). Gertrude, a member of an interdisciplinary scientific department, explains how different scientific disciplines are perceived in her department. When asked if she felt as accepted as other women among women in her department, Gertrude revealed that her male colleagues do not have a very positive opinion of members of the department who do not have a chemistry background. She goes on to say:

> I guess people that are educated, what I have noticed, people that are educated in chemistry and physics are much more analytical than the ones that are not and I think that is a major difference. And men are very often very analytical and maybe that's part of it (Gertrude).

Having a background in chemistry herself, Gertrude is able to distinguish herself from those who do not possess the skills most valued by the field of science in which she was trained. According to Gertrude, men naturally possess analytical abilities, but women do not, thus she is not like the "other" women. By not being like "other" women, Gertrude can claim similarity to men and benefit from this association both in her occupation and more generally.

While the above examples concern characteristics or traits that are common among engineers or scientists, they are also indicative of what has been associated with success in STEM fields. Being "logical" "practical" or "analytical" in the above examples is referenced in terms of solving problems or making decisions, something that is required in practice for engineers and scientists. The possession of these particular cognitive traits or abilities is equated with stereotypical masculinity as well as professionalism and success by the women depicted in this section. Cathleen, a tenured professor in the College of Engineering expresses a similar sentiment when discussing what it takes to be successful in engineering:

> And I think, and this is where I think engineers often, those trained in engineering are often good in leadership or executive type positions because in engineering you learn how to solve problems with constraints, so there's always constraints. You can't do A, you can't do B, so there's the limits, and I would say that in administrative, executive, or other leadership positions it really is a matter of trying to come up with the result amidst constraints. So I think if you're good at doing that you have a chance of being successful (Cathleen).

For Cathleen, training in engineering results in an individual who is able to solve problems, something that she equates with leadership and success.

Professional Requirements

Still other women imply that the requirements of STEM fields are more rigorous or demanding than those in social sciences, presumably requiring greater intensity of intellectual energy. For example, when discussing her interactions with other women on campus, Betsy, a tenured professor in the College of Engineering, indicated that she got along extremely well with her research collaborators, who were all women in engineering or the natural sciences. When asked how well she got along with other women on campus, she chose instead to comment on how she perceived the working lives of women outside of engineering or the natural sciences:

> Well the ones I was saying…get along fine. I mean, it's different I guess people in sociology where they just do studies, they seem to have more free time (Betsy).

Similarly, when asked if her work style was similar to or different from that of other women on campus, Marion, an untenured professor in the College of Arts and Sciences, replied:

> Well the people who are in science I think are pretty serious and hard working and you know, analytical, uh, so I think the styles that's pretty much similar. I've interacted with people who are not in the sciences or who are not in the types of sciences that I'm in, maybe a softer science…(I: Social?) No, not social science, but more, um, family? (I: Oh, family studies, that kind of?) Yeah, that kind of thing, and you know, they just, it seems like it's a looser schedule, it's not as intense, maybe (Marion).

By stating that the people in the natural sciences were serious, hard working and analytical, Marion is indicating that she believes that those in fields other than the natural sciences (and presumably engineering) are not serious, analytical or hard working and have less demanding occupations or a less rigorous schedule. Marion also indicated a belief that her field of science was different from other disciplines due to what she perceived to be a particular focus on cultivating outstanding scholars and rewarding them with research funding and

prestigious jobs. When asked if she believed there was something unique about the women hired in her department, she replied:

> No, I don't. I think that's one of the things that I particularly like about science and this field that I'm in is that women or people are judged on their, their research abilities, their scientific thinking, their ability to attract funding, so probably all of that is wrapped up in writing ability. But I think they're judged on their minds, and that is maybe one reason I'm here is because I find that so refreshing. If you are not a good thinker and a good researcher, you're not going to cut it, no matter what gender you are…But, I think that, you know, really talented people rise to the top and that's, I think, very evident in the sciences…(Marion).

Marion states that she does not believe biological sex category has anything to do with success, but that success is determined by intellect and ingenuity in research and research funding. She goes on to say that in her department, more men are brought in for job interviews than women. If Marion believes that people are rewarded based on merit and that more men are called for job interviews than women, she is effectively saying that women tend not to possess what it takes to be successful in the sciences and that those women who are successful are exemplary and superior to women who do not succeed. By stating that she believes the sciences are unique in rewarding talented individuals, she is also implying that women who are not in the sciences are less likely to be exceptional and that other fields reward mediocrity or perhaps have lower standards.

Interest

Chandra and Nadine both express views that suggest they differentiate themselves from other women academics who presumably have no interest in science and engineering. Both Chandra and Nadine identify women's under-representation in STEM fields as a problem. For example, in response to a question about whether or not she perceives barriers

to women in her occupation, Chandra, a tenured professor in the College of Engineering explained:

> I wouldn't say there's barriers, I think there's just for some reason not as much interest in going into science and engineering, you know, especially engineering, which is quite unfortunate. But, yeah, no, in fact there's quite a few incentives in the science and engineering programs and so on, trying to actively recruit more women, but, again, they've had limited success (Chandra).

Chandra had the type of interest necessary to pursue a career in engineering. By mentioning the limited success of programs that actively try to recruit more women, Chandra also seems to be implying that most other women do not have interest in science or engineering or need to be encouraged in order to develop such an interest.

Nadine, an untenured professor in the College of Engineering also points to women's lack of interest in pursuing science and engineering fields as reasons for their under-representation in STEM disciplines. In addition to lack of interest, Nadine points to what she perceives to be social stigma for women to pursue engineering. Nadine had commented earlier in the interview that she saw a lack of social support for women pursuing science and math fields. She goes on to say:

> It's not cool to be an engineer female, or your boyfriend doesn't like it, or your parents don't encourage you, but whatever it is, the media doesn't encourage you…And even the women that are there in my class, they don't talk. I've tried direct, indirect ways. (I: So a lot less outspoken?) Yeah, and they're good, and one of them, I have 2 women in my class…One of them is, I won't say top of the class, but very good. That person, she could have made an A or A+ if she had talked or asked me questions, but she didn't (Nadine).

Here, Nadine further elaborates on her belief that there isn't enough social support for women to pursue a career in engineering. She goes on to explain that the women who are in her engineering classes are not being assertive enough in class in order to earn the highest

grades they can. Nadine's comments suggest that women are not only uninterested in engineering, but that they are also less interested in seriously pursuing the field. She bases these perceptions on her experiences with female students who do not talk or ask questions in class.

Chandra and Nadine both mention failed attempts to encourage women's interest in pursuing engineering. In doing so, they both imply that women generally do not have an inherent interest in math and science fields. Therefore, by virtue of having pursued and succeeded in obtaining a career in engineering, Chandra and Nadine are also implying that they are different from most other women because they did not need to be encouraged or persuaded to go into engineering.

Discussion

I began this chapter questioning whether or not women scientists positioned themselves in superior positions relative to other women. Women scientists in this study do discursively position themselves as being different from and having a higher status than other women in several ways. According to my respondents, participating in their particular field of science is the primary means by which they differ from other women. The data reveal two primary categories of distinction, as articulated by women scientists. First, for many of my respondents, having an academic career distinguishes them from women who have a *non-academic career*. Working in academia places demands on women scientists' time and requires forms of emotional energy that working outside of academia does not. Second, many of my respondents articulated a belief that possessing the cognitive traits and abilities that allow them to succeed in their fields of science is what differentiates them from women academics in *other disciplines* (both scientific and non-scientific). From the perspectives of

some of my respondents, women who enter other fields of science or non-scientific fields are not likely to possess the intellectual and cognitive skills required to succeed in STEM disciplines.

The verbal mechanisms that women scientists in my study used to differentiate themselves from other women say a great deal about how women scientists think of themselves in relation to other women. The professional work requirements of a career in an academic STEM field and cultural gendered expectations influence how women scientists in this study perceive their own and other women's occupations, abilities and behaviors. Preconceived notions of what counts as work, what types of occupations are more rigorous and what types of skills and abilities are most desired influence how women scientists in this study evaluate themselves in relation to other women. I argue that women scientists' discursive evaluation of themselves in relation to other women using cultural and professional expectations and standards is a central component to practicing gender (Martin 2003). Below I will review how the themes of differentiation discussed in this chapter are connected to gender practices. Subsequently, I will explain the implications of women scientists' responses for inequality between women.

Gender Practices/Practicing Gender

Martin's (2003) two-sided dynamic of *gender practices* and *practicing gender* is a theoretical perspective that illuminates the pervasiveness of gender in culture as well as the effects that engaging in gender practices have on social inequality and the gender order. This framework provides a useful lens for interpreting the results of this study. *Gender practices* are a pervasive part of culture, including workplaces (Connell 1987; Martin 2003). Individuals configure (Connell 1987) personal practices in gendered ways, namely

femininities and masculinities, to comply with cultural expectations and norms. Because gender practices are so pervasive in culture and routine in individuals everyday interactions and behaviors, we are all able to identify behavior as complying with or resisting cultural expectations for femininity or masculinity (West and Zimmerman 1987).

Practicing gender, as noted in Chapter 3, refers to the "literal activities of gender, physical and narrative—the doing, displaying, asserting, narrating, performing, mobilizing, maneuvering" (Martin 2003: 354). When gender practices are put into action, one can be said to be practicing gender. Gender practices are derived from cultural expectations and reflect cultural constructions, therefore, it is through practicing gender that the gender order is reproduced. Individuals may not intend to practice femininities or masculinities, but nevertheless engage in femininity or masculinity practices because it is so much a part of their everyday existence. We all have knowledge of some of the gender practices that are available to be used at any given moment, but when we are practicing gender we are rarely aware of doing so.

Differentiation as a Gender Practice

Many of my respondents sought to discursively position themselves as different from other women, who, in their view, embody or enact traits, practices and characteristics that do not comply with my respondents' expectations for scientific "professionalism." My respondents' comments indicate that they believe that being logical, analytical and unemotional are characteristics or practices that they personally possess and that ultimately differentiate them from women outside of their particular field of science. For example, Brittany and Gertrude talk about having characteristics and abilities that make them particularly well-suited for their chosen occupation. By identifying themselves as practical,

analytical, and unemotional, my respondents are discursively aligning themselves with the expectations and attributes that are commonly associated with both professionalism in STEM fields and idealized masculinity. Thus, in positioning themselves as different from women in non-STEM disciplines, my respondents are also implying that they are not like the "typical" woman who presumably does not possess aptitude, competence or the required traits and abilities necessary for a career in a STEM field.

The differentiation from "typical" women (who have been socially constructed in popular discourse and the media as not having aptitude for math and science) could be a response to cultural myths surrounding women's capabilities in math and science. Recent research tells us that women and girls have math and science capability equal to that of men and boys (Blickenstaff 2005; Bystydzienski and Bird 2006; Catsambis 1994; Clewell and Campbell 2002; Cronin and Roger 1999; Greenfield 1997), but stereotypes in the general culture still suggest that girls are biologically inept in those fields. The belief in this myth, coupled with the greater prestige awarded to math and science fields by universities and the general public, means that being like men, in intellect or cognitive traits or abilities, allows women to be part of these prestigious fields and to garner greater respect in general. In order for women to be respected as experts and professionals in their field of science, they must "play the part" and draw on the gender practices and "scripts" for masculinity, to the extent possible, including managing the impressions they convey about themselves to others in their field of science and others outside of their field of science. Differentiation from women in non-STEM disciplines indicates that the women scientists in my study acknowledge that the perceived intellectual traits and characteristics associated with STEM fields are valued over the intellectual traits and characteristics associated with non-STEM fields. And these

characteristics are valued because they are associated with stereotypical masculinity. Other research has found that occupations that require workers to engage in characteristics and behavior commonly associated with women and stereotypical femininity have less prestige and are paid less primarily because stereotypical feminine characteristics are devalued (Kilbourne, England, Farkas, Beron and Weir 1994; Steinberg 1990; Williams 1995).

The discursive act of positioning oneself as different from others is influenced by professional standards for success and cultural expectations for gender (Ely 1994, 1995; Dellinger 2002, 2004; Pierce 1995). The differentiation in which my respondents are engaging is a form of discursive positioning that allows them to align with what is most valued and respected by their occupation and by the general culture: characteristics that are seen as stereotypical of men and masculinity. Given the construction of professionalism in the sciences and cultural myths that suggest that women do not have an "innate" ability for math and science, resisting being associated with stereotypical femininity is lucrative. As Sandra Harding states: "…were these biological deterministic arguments true, a 'woman scientist' *should* be a contradiction in terms" (1986: 93). Academic STEM fields hold males/masculinity as the standard for success. Thus it is not surprising that many women in STEM fields feel that, to be successful as a professional, one must practice forms of masculinity and demonstrate that one has abilities commonly associated with males.

Practicing Gender through Differentiation

The act of discursively positioning oneself as different from other women, I argue, is part of how some women scientists practice gender. Women who discursively differentiate themselves from other women in the ways outlined in this chapter are both taking into account professional standards for success and culturally devalued stereotypes of femininity

and then constructing themselves as different from women and similar to men. The act of verbally expressing to me their belief that they are different from other women is an example of practicing gender- it is the literal narrative act of gender (Martin 2003: 354). Martin explains that gender may be practiced narratively, by expressing sentiments or discursively positioning oneself as gendered. As implied in my respondents' narratives, being feminine or not possessing the skills and abilities that have been associated with STEM fields are not seen as professional, successful, or desirable. Given the cultural perceptions of the intellectual traits and abilities of women, the practices available to be performed by my respondents in their occupations, when put into action, position my respondents as appropriately gendered for their *professional context*. Given the gendering of academic STEM fields, the range of available practices in which women can engage and be perceived as professional are largely masculine. Thus, differentiating themselves from femininity and women not employed in STEM fields works to position my respondents as "professionals."

Differentiating oneself from others based on the belief in and complicity with cultural notions regarding what traits and abilities are most valued also has implications for the reproduction of cultural gender inequality. Cultural notions of which gendered characteristics and practices are valuable and desirable, when reiterated through action or narrative, are reproduced and given life and continue to play a role in how women perceive their own traits and abilities and those of others. If the women presented in this chapter believe that most women do not possess the cognitive skills and abilities required for STEM fields, then it is plausible to assume that they may echo the cultural notions that only a few extraordinary women are cut out to be in STEM fields. Thus, when the women scientists in this study are discursively positioning themselves as different from most other women on the basis of

cultural beliefs about the types of skills and abilities women possess, they are positioning themselves as superior to most other women.

Further, my respondents' comments imply the classical economic argument for women's segregation into lower paying, lower prestige occupations. According to this argument, the inherent traits and abilities possessed by individuals and the choices individuals make regarding education and careers account for the difference in pay between women and men. The best paying, most prestigious jobs, according to this view, will be filled by the most talented people. My respondents' comments indicate that they believe that women in non-STEM fields either have not made the right educational and career decisions or do not possess the necessary abilities to have a career in STEM fields. According to this logic, the people who have STEM careers are likely the most talented or have made better career choices. When women scientists subscribe to this argument, there is little chance they will critically examine or challenge the cultural messages regarding women and STEM careers.

CHAPTER 6: DISTANCING

As outlined in Chapter 5, women in academic STEM disciplines differentiate themselves from women outside of academia and from women who are employed in academia, but in disciplines other than STEM. Do women in STEM disciplines distinguish themselves from other women *in STEM*? And do gendered occupational and organizational expectations influence how women scientists view themselves in relation to the other women in their own fields of science? The women depicted in this chapter distance themselves specifically from STEM women *colleagues* whom they perceive as having violated unspoken gendered norms, expectations and standards of conduct within their own occupation or organization. *Distancing*, as I use it in this chapter, is the act of discursively separating or dissociating oneself from other women scientists. *Distancing* is distinct from *differentiation* in that differentiation occurs when women scientists perceive a general difference between themselves and other women. Distancing goes a step beyond differentiation in that it involves a more deliberate, discursive separation or dissociation from other women scientists based on perceptions and interpretations of the appropriateness of other women's behavior given a particular professional context. The acts of distancing explained in this chapter were used by women scientists in an effort to elevate their personal status and enhance their own careers relative to other women in their own discipline. This was achieved by women scientists in this chapter by distancing themselves from other women scientists who do not comply with expectations for professionalism. The two primary expectations for professionalism used as the basis for distancing include accepting the informal occupational and organizational expectations and standards as legitimate and complying with the "ideal worker" model.

Within Discipline Distancing

The unspoken, informal gendered occupational and organizational norms, expectations and standards to which women in academic STEM fields are held are referenced by women scientists in this chapter as a way to identify how they differ from their female colleagues. Women scientists distanced themselves from other women within their disciplines on the basis of professional interaction styles and professional practices. Women scientists' explanations of their own professional interaction styles and practices in relation to those of women colleagues in STEM can be organized into three categories. Women scientists set themselves apart from women colleagues by personally *rejecting feminine characteristics*, by *engaging in "professional" conduct*, and by how they *deal with barriers, biases and conflicts*.

Rejecting Feminine Characteristics

When discussing their relationships and interactions with both female and male colleagues and the types of impressions they try to convey about themselves, some women scientists made comments indicating that stereotypically feminine characteristics and practices should be suppressed in the workplace. Women scientists' comments regarding stereotypically feminine characteristics and practices can be organized into two categories: First, some of the women scientists distinguished themselves from other women scientists on the basis of their ability to suppress stereotypically feminine practices. Women scientists in this category indicated that they believed femininity was innate to women and that professional women will be able to suppress it in the workplace. Second, other women scientists reported trying to avoid engaging in practices that they deemed unprofessional. The

practices that these women reported avoiding are those that are associated with stereotypical femininity.

"…The nature of women…"

Several of my respondents indicated that the practices displayed by other women were reflective of traits or attributes that are stereotypically associated with femininity. Their accounts of other women's behavior suggest that they believe stereotypically feminine characteristics and attributes are inherent to all women. While my respondents may believe that they too possess stereotypically feminine characteristics and attributes, they see themselves as having the ability to suppress such characteristics and attributes in a professional context. For example, in response to a question about what she enjoys most about interactions with colleagues, Gertrude (tenured professor, College of Arts and Sciences) reports that some women in her field do not take criticism or disagreement well:

> And, this is what I have found, I get along a lot better with male colleagues than with female colleagues. I found that male colleagues don't take things personal. They're much more abstract, objective, while many of the female colleagues…some of them, not the ones in my group, but others I have to be careful what I say, how I say it because they may take it personal and I don't mean it that way. With the male colleagues, it's very obvious wherever I've been, the male colleagues are much more objective, don't take things personally (Gertrude).

For Gertrude, her ability to get along better with male colleagues is due to her perception that they do not take things as personally as women. In other words, she gets along better with men because men do not possess or exhibit stereotypically feminine tendencies such as taking criticism personally. By stating that almost all the male colleagues she has had interactions with throughout her career have been more objective and accepting of criticism,

Gertrude is suggesting that these traits are innate to men. She implies, at the same time, that the typical woman is inherently incapable of accepting criticism in an objective way.

Deborah, a tenured professor in the College of Veterinary Medicine, also expressed views about women and feminine traits and attributes that were similar to Gertrude's. When responding to a question about how well integrated she felt among the men she worked with, Deborah explained that she felt more integrated with the men than with the women. She attributes this to her graduate training in a male-dominated field. Deborah explained that she became accustomed to working with men through her graduate training. When I asked her if she felt more at ease with men, she replied: "I actually find men to be more straight shooters…men tell me exactly what they're thinking or if your idea is off-base or something like that."

Deborah goes on to discuss her interactions with men and women in her workplace. When asked if her female co-workers' inability to be straight-shooters caused any problems for her ability to get her work done, Deborah replied that there were some women that were able to give their objective opinions when discussing professional matters, but that other women are unable to do that:

> …then there would be other women I would suggest that they wouldn't, I wouldn't say that they were trying to impede your research but they may have emotional baggage about how you react or interact with other people and that type of thing and, you know, men can compartmentalize that much better than I think a woman can, I think, because women tend to be more emotional creatures, I think they tend to bring all that along…(Deborah).

Deborah identifies two types of women: professional women (those who can accept criticism) and emotional women (women who cannot accept criticism). The difference between the two, according to Deborah, is the extent to which they are able to suppress what

Deborah perceives as an inherent trait in women: emotion. In this case, Deborah is identifying what she perceives as natural to women as something that makes women prone to unprofessional behavior.

Deborah's comments include many assumptions about women and men and gender. Through her discussions of workplace relations between women and men and between women and other women, Deborah expresses a belief in biological determinism. For example, when discussing how the relations between women in her workplace differed from the relations between men, Deborah explained that women were jealous of each other and tended to be more critical of other women. When I asked her why she thought that was the case, she replied: "I just think it's the nature of women to be honest." Deborah generalizes stereotypically feminine characteristics to all women and links these characteristics to what she perceives to be unprofessional conduct or demeanor. Both Gertrude and Deborah, in discussing what they describe as their difficulties in interacting with female colleagues, are positioning themselves as different from these women in terms of their professional development and their ability to suppress emotion and other stereotypically feminine traits on the job.

Gertrude and Deborah saw stereotypically feminine traits they perceived in other women as inherent or innate and unprofessional. Faye, a tenured professor in the College of Veterinary Medicine, also distanced herself from other women on the basis of displayed stereotypically feminine traits. Faye attributed passive aggression to femininity and women. When asked how her colleagues contributed to her enjoyment of her job, Faye cited "constructive discourse" with colleagues as something she finds to be particularly stimulating. She contrasts "constructive discourse" with "passive aggression" in saying that

she doesn't think most people are capable of constructive discourse because they feel threatened if someone disagrees with their assessment. In particular, Faye identifies women as being more likely to be passive aggressive by stating: "…and frankly I think women are more comfortable in that passive aggressive role and I actually quite detest that." She goes on to say that she thinks that women have a hard time accepting criticism because they have been trained to try to make things perfect. Women's difficulty in accepting criticism, according to Faye, is problematic for her discipline. Faye identifies immaturity as one reason for women's tendency towards passive aggression. According to Faye, being able to accept constructive criticism and engage in "constructive discourse" requires a certain level of maturity. Women who have not reached this level of maturity, according to Faye, are more than likely going to be passive aggressive and thus unprofessional. Faye identifies femininity with passive aggression and with immaturity, which she sees as unprofessional. In other words, stereotypical femininity is unprofessional.

"I just try not to be meek."

Gertrude, Deborah and Faye distance themselves from other women who do not suppress what they perceive to be innate feminine characteristics. Helena, Carrie, Bernice and Kristen avoid displaying characteristics that are associated with stereotypical femininity. Helena, Carrie, Bernice and Kristen do not cite observations of other women colleagues displaying stereotypically feminine characteristics as motivation for avoiding displaying feminine characteristics. Rather, their comments indicate that they themselves try not to engage in practices associated with stereotypically feminine characteristics. For example, when asked what types of impressions she tried to convey about herself, Helena, a tenured professor in the College of Veterinary medicine replied:

> I think in general I try to be forceful… I tend to speak fairly clearly…I'm just trying to think, how do I do that? I just try not to be meek…So if I have an opinion I speak it. That doesn't mean I hold to it, that's one thing I definitely don't necessarily feel I have to do is, is I can't say I'm wrong. I've never had that problem. I'm quite capable of saying I'm wrong, but I am capable of voicing an opinion…(Helena).

As indicated in her comments, Helena equates meekness with not voicing an opinion. Helena also reports that she tries to be forceful in asserting her opinion, something that is not considered to be a stereotypically feminine practice (Cohn 1993). Similarly, Carrie, an untenured professor in the College of Engineering, also reports making a concerted effort to avoid engaging in practices that are commonly associated with women and stereotypical femininity. When asked what types of impressions she tried to convey about herself, Carrie replied that over the last couple of years she has been trying not to giggle as much because it is unprofessional. When I asked her why she felt she couldn't giggle, she replied:

> See, that's something that's been told to me, too, I mean, from talking and when you giggle at the end. I mean, me, I think I'm just a friendly, smiley person but sometimes I think that's viewed as not very professional. (I: Was it told to you by a mentor or somebody informing you about the professional field, or?) No, it wasn't anybody…I don't think I've ever been told directly, that's a behavior that you, you know, myself, have to change, but they've mentioned it about other people and I thought, I'm sort of like that, too, so, I guess it's not a very good impression of me (Carrie).

Carrie's discussion of the types of impressions she sees women colleagues conveying sheds further light on her decision to avoid giggling. When asked if her women colleagues tried to convey similar impressions to those she reported, Carrie explained:

> Some women are just very coarse and I think they really have a defensive attitude. Other women, and these would probably be the ones that I really admire, are very poised, they definitely portray an open-mindedness but they don't have the giggly, girly nature attached to it. But they're very poised, you know, maintain their calm (Carrie).

Here, Carrie reveals her perception that not only is giggling seen as unprofessional, but it is also equated with stereotypical femininity. For Carrie, being professional means not being "girly" and giggling, but remaining "poised" and "calm."

Helena and Carrie both avoid engaging in specific practices that they link to stereotypical femininity. Kristen, an untenured professor in the College of Veterinary medicine reports trying to suppress behavior she links to emotionality. For example, when asked what types of impressions she tries to convey about herself, Kristen responds:

> I worry sometimes since…I have tried to make sure that I don't come off as too highly emotional, or…not so much emotional but not thinking straight before I open my mouth. If there is something that really bothers me then I will speak up and I will say it, but I don't want people to secretly roll their eyes and think "oh here she goes again…" or "is this grounded in anything or are you just having an emotional moment?"….I want to be respected for trying to have a broad perspective in thinking about the college and department first rather than thinking about my personal gain (Kristen).

Bernice, a tenured professor in the College of Veterinary medicine also identifies emotionality as a problematic characteristic to display in a professional work environment. When asked what types of impressions she tries to convey about herself, Bernice responds: "professional." When asked how she conveyed a "professional" impression, Bernice replies:

> Well. you think before you talk and you try not to get, I mean, minimal emotion, you know…Most of the time, most of us are very fact oriented; you talk about the facts, it's not a field that really goes with a lot of emotion as far as a part of the job. Of course you deal with emotion, but when you're making decisions it's not based on emotion, it's based on numbers, facts, things like that, that's what we're trained to do…(Bernice).

Here, Bernice explains that emotion has no place in her field of veterinary medicine because making decisions and dealing with facts do not require emotion. When asked if other women in veterinary medicine conveyed similar impressions about themselves, Bernice explains:

> …I think, you know, you're trained when you go to vet school to become a professional, so that's what I think most people try to be is, you know a professional, uh, maintaining control over your emotions, trying not to fly off the handle, that's kind of strongly discouraged within our profession…(Bernice).

Kristen and Bernice both define professionalism as a lack of emotion. According to their comments, displaying emotion is not only unprofessional, but the standards and expectations of their profession do not allow for emotion, as "facts" and "making decisions" do not require it.

Distancing by "Professional" Conduct

The women scientists in this section all make comments that indicate they believe that, in order to succeed, women must engage in certain professional practices. Many women scientists, as elaborated below, view relatively less successful women in their discipline as failing to engage in appropriate professional practices or failing to make the kinds of decisions necessary to enhance their careers. The respondents in this section used the concept of professionalism, or ideals commonly associated with professionalism, in three separate ways as they engaged in distancing practices. Two of the three distancing practices based on 'professionalism' involve an uncritical acceptance of the masculinist "ideal worker" model (Acker 1990; Britton 2000). The third involves criticism of an occupational and organizational structure and culture that may prompt some women to align with men in order to be successful or organize their lives in a way that allows them to comply with the "ideal worker" model. Women scientists' professionalism-based distancing practices can be organized into three categories: practicing self-promotion in order to get deserved recognition or awards; practicing the prioritization of work (as a scientist) over family commitments; and practicing *criticism towards* women who participate in activities that

involve either mimicking masculinist notions of the ideal worker or embodying negative stereotypes of femininity.

"You gotta pat yourself on the back once in a while."

Some women scientists commented on the types of professional behaviors that are required in order for a person to be successful and attain a positive reputation in their workplace. Amber, an untenured professor in the College of Veterinary Medicine mentioned the requirement for confidence and assertiveness in order to be successful in her field. When asked what it was like being a woman in her field of veterinary medicine, Amber commented that she felt she was treated as an equal and that her particular qualifications and certifications, in addition to her tendency to be a "straight shooter," made her very well received within her department and within the Veterinary hospital where she worked. When asked if she thought the positive treatment she received from others was due to her being a "straight shooter," she responded that it was and that those who do not speak up in workplace conversations may have a difficult time getting rewarded:

> People don't realize, if you don't sell yourself people don't realize you're doing things and they don't have time to pour over your CV everyday so if you're not selling yourself a little bit, you gotta pat yourself on the back once in a while (Amber).

For Amber, being willing to speak up and make others aware of your accomplishments contributes to positive treatment and reception on the job. Amber distances herself from those people who are not assertive and do not get the rewards she receives. Amber sheds light on the notion that being assertive in one way or another will be rewarded positively, in this case, by receiving respect from co-workers.

Bernice, a full professor in the College of Veterinary Medicine, also commented on how the ability to be assertive can contribute to rewards in terms of salary. When asked if she thought men and women tried to convey different impressions about themselves, Bernice responded:

> …the biggest thing would be like in small animal practice potentially where women work part-time and may be willing to accept lower salaries and not be quite as competitive…they may not actively attempt to get equivalent salaries…most women tend not to be as good at negotiating for salaries, um, I think that would be one of the biggest differences in why the salaries are lower, women as a whole are not trained or don't seem to be as aggressive as far as salaries (Bernice).

Bernice distances herself from the part-time female workers in small animal medicine by focusing on what she perceives as a lack of assertiveness in asking for higher salaries. Bernice is in large animal medicine and does not work directly with animals. According to her comments, Bernice, and presumably other women in large animal medicine, are assertive and more competitive, thus they are less likely to have to deal with pay inequity. Large animal medicine is better paid in general than small animal medicine, thus women participating in large animal medicine will likely not have the same salary obstacles as the small animal veterinarian.

"Gone are the days of the housewife serving as a personal assistant."

Leona, Beth, Amber and Gertrude all acknowledge that women in academic STEM fields often have to balance work with family and childcare responsibilities. In order to ensure that they are able to meet both family and work requirements, all four assert that women scientists must plan accordingly and make strategic decisions. These women all distance themselves from the "other" women who presumably do not make such strategic decisions. For example, when asked what it was like to be a woman working in a male-

dominated field, Gertrude, a tenured professor in the College of Arts and Sciences, explained that women are often not taken seriously because others believe that they will have children, something others see as compromising their careers. Gertrude and her husband, who had their children in the 1970's, hired a nanny to care for their children so that they could both work during the day. When asked if she made any adjustments in her work schedule following the birth of her children, Gertrude explains:

> At work, when my second child, I went to work after my first child was about 6-8 weeks old. But they were so particular that I couldn't miss any work that, there was the babysitter at home so it was much easier…Well, I just never let home interfere with work. That was number one, I mean, both my husband and I felt very strong. Never let home interfere with work. Because we knew they were going to say, 'See because you're married and have children that's why you can't be a scientist'. We knew that that's often what supervisors look at first. So we made a point never to let… home interfere with work (Gertrude).

Here, Gertrude indicates an awareness of the popular view within STEM fields (and other occupations) that women with children were not serious about their career. While she acknowledges this view, Gertrude also explains that she chose to operate within the gendered constraints of her field at the time because to do otherwise could potentially jeopardize her career. Gertrude explains that she and her husband consciously decided to hire a nanny so that they could both continue their work and because they suspected that Gertrude may not be taken as seriously if she were not able to work the hours expected. Gertrude and her husband made sure that family and childcare responsibilities never interfered with her work, allowing her to succeed according to the standards and expectations of her occupation at that time. Further, Gertrude's comments also suggest that women who work in an environment that is not accepting of women can avoid any potential problems by making the kinds of

arrangements that she and her husband did--if they have childcare responsibilities. Thus, succeeding in STEM fields relies on making strategic decisions and choices.

Leona, a tenured professor in the College of Arts and Sciences, also acknowledges that women face added pressure when they have to juggle childcare responsibilities with tenure pressure. When asked if she had ever experienced any personal or professional conflicts in participating in her field of science, Leona said that she hadn't, but she saw other women dealing with conflicts. Leona explains that she observes other women dealing with conflict between the tenure clock and biological clock and specifically states that women who have children prior to tenure put pressure on themselves. Leona was able to postpone her childbearing until after she obtained tenure, thus she did not deal with many of the obstacles of raising children while trying to attain tenure. Leona cites the conflict between women's tenure clock and biological clock as a barrier for women, but asserts that as long as childbearing is delayed until after tenure, the atmosphere is friendly. Further, Leona explains, having a helpful spouse can alleviate much of the pressure of balancing work and family and that the decisions made by dual career couples can facilitate women's advancement in STEM fields.

Beth, an untenured professor in the College of Veterinary Medicine, also points to childcare responsibilities as potential barriers to women's advancement in her field. For example, when asked if she thought there were any barriers to women in her occupation, Beth replied:

> …I think again, you know, women bear the children and generally, you know, if you start having to do things like pick the child up from daycare and you don't have the proper support outside, I don't think it has to be a barrier as long as you have the good support system outside of work…(Beth).

Having children "doesn't have to be" a barrier if women and their partners make strategic decisions regarding childcare responsibilities. Beth and her husband decided not to have children because Beth was dedicated to her career and knew she couldn't be the primary caretaker. When asked if she found any challenges in balancing work and family, Beth explains that she spends time in her lab on week-ends which disappoints her husband at times. Beth goes on to say that the amount of time she spends on her career facilitated her and her husband's decision not to have children:

> …I think this career played a large role in that [not having children] because I couldn't, you know, be the primary caretaker and my husband didn't really want to so, you know, the decision was kind of made in a way…it certainly was influenced by the career that I chose (Beth).

Beth and her husband took into account both of their personal preferences for childcare responsibilities and career motivation when deciding not to have children. Beth's earlier comments suggest that she believes that women who do not make sure that they have a supportive partner will likely encounter barriers in their career advancement.

Amber, an untenured professor in the College of Veterinary Medicine, also explains that work and family can be managed effectively if women make the correct decisions. Amber does not have children and describes herself as "not really into kids." According to Amber, she and other women like her face fewer problems in balancing work and family and attaining career goals because of the choices they have made. When asked if she perceived any barriers to women in her occupation, Amber cites difficulty in deciding when to have children:

> I think it's difficult to, by the time you get where you feel you need to be in your career, if you're gonna try to have a family, those things can be challenging. I think it's very doable, a lot of people do it, but I think it's challenging. So trying to schedule it all in is probably the difficult part. That's

> just trying to do everything that needs to be done. Gone are the days of the housewife serving as a personal assistant (Amber).

In the above quote, Amber does not talk about the timing of childbearing as an insurmountable hurdle for women in veterinary medicine. Instead, her comments indicate that she believes it is normal for women to wait until they have attained some degree of success before deciding to have children. In fact, Amber talks about how many of her female colleagues either do not have children, have a stay at home husband who takes care of their children, or have made some other type of childcare arrangements that allow them to continue working. Deciding to wait until attaining tenure or some degree of success and making childcare arrangements that allow a woman to fulfill her career aspirations is necessary in order for women to be able to succeed in veterinary medicine, according to Amber.

"…I was like, wow, that's totally dumb and unnecessary..."

Whereas the distancing practices described in the previous two subsections involve women scientists aligning themselves with notions of professionalism that are quite consistent with the masculinized concept of the "ideal worker," the distancing practices described in this section involve a criticism of occupational and organizational gendered norms and expectations that often disadvantage women. Some women scientists sought to distance themselves from women colleagues whom they perceived as engaging in inappropriate or unnecessary behavior with the purpose of complying with expectations for "professionalism" or becoming successful. Brittany, Faye, Shari and Pam all understand that the gendered structure of STEM fields poses more conflicts and difficulties for women who want to be respected and to advance professionally. The behaviors in which women must

engage and the decisions women must make in order to ensure success, as explained by the women in this section, while often consistent with occupational standards of "professionalism," tend to work against women in the long run. In this section, it becomes clear that though my respondents understand what is expected of women to be successful in STEM fields, they do not agree with or approve of some women scientists' strategies to meet those expectations. .

Brittany, an untenured professor in the College of Engineering, was one of the women whose conceptualization of "professionalism" differed from what she perceived as the normative way of interacting among other women scientists she encountered. Brittany explained that more attention is paid to women in her field due to their under-representation. This increased attention, according to Brittany, contributes to "turf war" tendencies on the part of some women in the field of engineering. A "turf war" as explained by Brittany, involves a woman feeling insecure about her particular contribution if another woman engineer is on the same committee or research team. When asked how well she got along with other untenured female professors in engineering, she stated:

> At the assistant professor level, certainly, there's a lot of pressure to be, like, very self-centered, right? I mean, you have to use a lot of self-preservation stuff and sometimes, I think particularly for early career or young women in engineering, they're used to being the only woman on a team or in a group. And so you can feel threatened by the presence of another woman because then you're not really sure what your unique contribution is. And I know that when I was beginning my career, I certainly had those tendencies myself. But then I was once in a situation where it was very clear to me that that's why another woman had such a problem with me. She didn't actually have a problem with me [as a person], she just had a problem with me being a woman on her, on her turf… Like you get kind of nervous if there was going to be another woman in the group there. Was she going to be more awesome than me? And once I realized that I had a little bit of that, I was like, oh, that's stupid. So the realization kind of made the fear disappear because I, as soon as

> I recognized that, I was like, wow, that's totally dumb and unnecessary…(Brittany).

Brittany's ability to separate herself from women who engage in behavior that she thinks is unnecessary or misdirected allows her to establish herself as operating under what she perceives to be higher level of professionalism than women who engage in "turf wars." What makes this quote unique is that Brittany is specifically acknowledging that the "turf war" behavior is due to women's under-representation in engineering and the occupational requirements for success, coupled with women's "token" status, and that these factors often contribute to professional behaviors and practices that may not necessarily indicate collegiality or support camaraderie among women.

Other women refer to some of their occupation's traditional bias against women or preference for men in describing the behaviors they see in other women. Faye and Shari distance themselves from the types of behaviors in which other women scientists engage to become successful, namely those behaviors that are consistent with stereotypically feminine practices that are perceived to be negative. For example, Faye, a tenured professor in the College of Veterinary medicine, explained that she had witnessed, over the course of her career, women aligning with men and using manipulative strategies to get ahead. When asked if she perceived any barriers to women in her occupation, Faye stated that she does not see as many opportunities for women in veterinary medicine as there are for women in the corporate world, and therefore sees women aligning with men in order to get ahead. According to Faye, it is unfortunate that women have to use personally demeaning tactics to be successful:

> …You just have to use different tools and be more manipulative and I think that's pretty disgusting frankly. That you need to worm your way in a

> different way rather than just based on your hard work and your efforts, you know, so I think that there are, I just don't think the opportunities are there for women. The opportunities in the profession are fantastic, but, I just think it's so much harder for women to get to those higher levels. (I: You mentioned women having to be more manipulative, what are some of the ways that women do this?) You have to be more a buddy-buddy and, you know, and tell them how great they are and, you know, and try to, you more worming up to them as far as, you know, really building up their ego so they can see you as a person that's going to be there to build up their ego, you know what I mean? (I: Do you see that a lot?) I wouldn't say a lot, but I think it's a game that women learn to play at a very young age and you bring it out when you need to if the stakes are high enough for you to have to use that. You know you don't have to play the game, but, there you'll stay (Faye).

Faye discusses this behavior in the context of the gender biased tradition of her profession, acknowledging that aligning with men is necessary for many women to attain higher level positions. Faye herself is critical the "disgusting" behaviors in which some of her women colleagues engage, thus distancing herself from those other women.

Alignment with men as a strategy for succeeding was also discussed by Shari, a tenured professor in the College of Engineering. Shari describes women who have formed personal relationships with men of higher prestige within the profession. When asked to describe the relations between women in her field, Shari reveals that some women are disappointed by the behavior of other women. In her discussion of women at other universities, she reveals that some women have received high profile positions because of a personal relationship with a man:

> Yeah, one of the things you have to deal with, think about as a female is there's part of this, there's so few women in the field that if you see someone else as a lightning rod or doing something that people generalize to all women, its like, 'Oh, no don't do that.' You know, I talked about, this doesn't happen here, but in my larger community, the women who have slept with the powerful men in the field and gotten a faculty position with them, that makes me cringe and it makes others cringe because these are really talented women, but because of that association its just gossip and notoriety that makes things really awkward (Shari).

Shari herself never had one of these alliances with a high profile male colleague. She distances herself from the women who are, in her view, "lightning rods," because she sees herself, and other women engineers like her, as having succeeded on their own merits, not based on who they were associated with. Seeing other women align themselves with high profile men in her field, while not the norm, makes Shari feel as though women who have made it on their own merits are not given the respect they deserve because of the actions of other women.

Pam, an untenured professor in the College of Arts and Sciences also distances herself from actions that, when taken by women, undermine the general status of women in society. She makes this point in the context of her reflections on her post-doctoral advisor. When asked to what extent she felt mentored by other women in senior positions, Pam first references the senior women in her current department. She explains that many of the senior women in her department have children, which she cites as comforting because it indicates that her current University is supportive and accommodating so that women can have children and a career if they wish. Pam then cites her post-doctoral advisor (at another research institution) as poor role model for women scientists combining work and family:

> One female faculty at the University had a nanny, so she and her husband were both professors and spent a lot of time working and so she had a nanny basically raising their two children, and so that's not a particularly good role model to think, well you're having children, but you're not really raising them, you're paying somebody else to do that… She worked all the time, so I imagine she literally only saw her kids for probably a few minutes before kissing them goodnight and going to bed and it's just based on the amount of time that you would see her there. That's just my impression that that's how it must have been (Pam).

In her comments, Pam implicitly acknowledges that institutional support for combining work and family responsibilities is necessary and a major concern for women. Pam cites her post-doctoral advisor's decision to hire a live-in nanny as one that points to the failure on the part of the institution to provide flexible family leave policies and accommodation for parents. Pam is also acknowledging, though not accepting, the expectations and standards within academic STEM fields that create a situation where many scientists must often choose between work and having a family, or make full-time arrangements for child care. While Pam does not agree with her post-doctoral advisor's decision to hire a live-in nanny, in a sense distancing herself from a woman who would choose not to raise her own children, she also implicitly understands the conditions that lead to her advisor's decision.

Distancing by Dealing with Barriers, Biases and Conflicts

The two final distancing practices that emerged in this study involved women scientists' efforts to deal with barriers, biases and conflicts. And like most of the distancing practices described at the beginning of this chapter, the final two support rather than resist socially pervasive gender hierarchies. Many women scientists expressed the belief that the way an individual woman handles difficult situations and her personal perspectives will determine whether or not she has a difficult time participating in a STEM field.

Women scientists, when describing how women colleagues in their field handle difficult situations, distinguish themselves from these women colleagues in two main ways. First, when discussing their perspectives on gendered barriers and professional conflicts, women scientists assert that individual women's perspectives on discrimination can influence their professional experiences. In other words, some women scientists assert that other women scientists who believe there are barriers to women will likely encounter barriers

precisely because they are "looking for" them. Second, some women scientists indicate that a woman's responses to contentious situations will influence whether or not that woman's career is negatively influenced by gendered barriers. These women scientists assert that because they do not personally respond to conflicts and barriers in the way many of their women colleagues do, they will attain (or have attained already) higher levels of professional success.

"I don't look for it."

Marion, Bernice and Carrie all make comments indicating their belief that women who pay attention to issues of gender inequality in STEM fields will likely encounter barriers and conflicts because they are "looking for it." In other words, these women scientists believe that the conflicts for women in STEM fields are self-induced or self-inflicted by women who perceive barriers for women in STEM fields. For example, when asked how well she got along with other women on campus, Carrie, an untenured professor in the College of Engineering replied:

> Pretty well, there's some that I avoid just for, we just have different styles. I tend to avoid the women on campus in the, so the STEM fields are science, in the STEM fields who are really big about promoting women, and I know that sounds horrible. But I guess with my own experience, I feel like if you don't make a big deal about it for yourself and you don't waste a lot of energy on it, you can just be successful doing what you're doing. I'm not saying that I'm not supportive and recognize that there's other issues…Some of them, I just I don't agree with the way they go about sort of promoting some of their activities that they do and so I just tend to, I avoid them… (Carrie).

Carrie explains that she thinks women can be successful by not making a "big deal" about barriers for women in STEM fields. Conversely, one could infer from Carrie's comments that she believes that women who do make a "big deal" about barriers for women will face problems precisely because they are paying attention to them. Carrie implies that, in her

view, women should not bring more stress on themselves by expending energy and getting involved in initiatives that try to remove "barriers" to women's advancement in STEM fields. Carrie disagrees with the perspective that the institutional structure of academic STEM fields is biased and actively distances herself from those women associated with this perspective.

Carrie's comments are indicative of the complexity of the role that discourse plays in creating and sustaining status differences (Cohn 1993). Carrie acknowledges that other women believe that they have encountered barriers. She understands that the view she holds on this issue differs from that of individuals and programs that work to eradicate barriers to women's advancement. As a woman in a STEM field, Carrie also acknowledges that given this other perspective, it "sounds horrible" for her to say that she avoids and disagrees with the other perspective. Carrie's decision to discursively distance herself from the other "perspective" indicates that she wishes to be perceived in a way that indicates that she accepts, supports, and complies with the standards and expectations valued in the field of engineering so as not to jeopardize her career (Cohn 1993).

Marion, an untenured professor in a science field in the College of Arts and Sciences echoes a similar sentiment to that expressed by Carrie. When asked if she perceived any barriers to women in her occupation, Marion replied:

> No, I haven't experienced barriers, but I, I do believe that other women perceive them. [I: What kind of barriers do you think other women perceive?] The fact that, well this is all hearsay but just the whole time off for raising children and that, those, I had a post-doc who was very careful when she was job hunting about explaining to people that, she didn't tell people that she was married or that she was thinking of having children because she perceived that they would not hire her, but I think that was maybe her paranoia, too. I think some people see discrimination…just because they want to. I don't know. I don't, I don't sense that much (Marion).

Here, Marion's comments indicate that she believes that her post-doctoral student was placing undo pressure on herself because she was paying attention to information that revealed that women with children are often taken less seriously in STEM fields. By defining her post-doc's actions as "paranoia," Marion is dismissing claims of bias and discrimination against women in STEM fields. Further, Marion is distancing herself from women who believe that barriers exist for women in STEM fields. According to Marion, women who believe there is discrimination against women encounter barriers or conflicts in STEM fields because they are already expecting them to be there. Following this logic, Marion herself has never encountered any conflicts or barriers because she does not believe they exist.

Bernice, a tenured professor in the College of Veterinary Medicine, similarly indicated that women who pay attention to issues of discrimination are more likely to experience it themselves. When asked if she had ever experienced any personal or professional conflicts in participating in her occupation, Bernice replied:

> Actually really not too much, um, I've always been very fortunate in minimal, what I would say, discrimination. I don't look for it. But I haven't really felt, and actually, if anything, um, the timing of my career has been at a time where most of the time they're looking to increase the number of women within each of the things, like when I got into vet school. I mean out of 70 we were the biggest class we had 10, they were increasing the size of the class, the class before us had only 6 women, um, you know, now with faculty, when I applied for faculty positions and even for leadership positions in academia, there aren't very many women that are similar to me, so I'm kind of at the forefront. So, if anything, you know, I have an advantage that way. But as far as discrimination, it's probably been there I just haven't paid any attention to it (Bernice).

Here, Bernice explains that because her profession has increased the number of women in recent years that discrimination against women isn't as much of a problem. Bernice also explains that the lower numbers of women in her area of research is due to very few women

pursuing that particular area of research. Bernice repeated several times throughout the interview that she "doesn't look for it," meaning she doesn't look for discrimination. Using the logic behind her comments, Bernice likely believes that women who do experience discrimination have been "looking for it." Similar to Carrie and Marion, Bernice distinguishes herself from women scientists who have encountered discrimination by suggesting that women who "look for it" will experience discrimination.

Carrie, Marion and Bernice all indicated several times throughout their interviews that they felt their field was based mostly on merit and that gender did not play a role in determining opportunities or advantages. All the women position themselves as someone who does not pay attention to gender issues and, because of that, they have experienced relatively little conflict. These respondents imply that they believe that the conflicts reported by women in STEM fields are self-created and therefore women's perceptions need to be changed in order to make experiences for women in STEM conflict free.

"…[It's] more of a personal thing than a professional thing…"

The women scientists in this section distance themselves from other women scientists who have been deterred by experiences of discrimination or bias. According to these women scientists, women who deal effectively with conflict or discrimination will succeed. Some women scientists cite confidence as the most important factor for successfully navigating a hostile work climate or discriminatory treatment. For others, responding to a difficult situation effectively is important in order to keep discrimination from deterring success. While Gertrude, Raquel, Robin, Barbara and Brittany all indicated in their interviews that gender bias against women exists to a certain extent, they do not believe that it absolutely deters all women all the time. These five women believed the deterrents to success faced by

women in STEM fields are due largely to attitudes, responses and actions (or inactions) of women scientists.

Gertrude has experienced several incidents of gender discrimination throughout her 40+ year career. The incidents include pay discrimination, discrimination in sharing information and crediting her on research papers. For each instance of personal gender discrimination and mistreatment, Gertrude explained that she persevered and worked hard. While Gertrude perceived her colleagues' mistreatment of her as gender discrimination, she explains that it hasn't deterred her from achieving success because she worked through it. For example, Gertrude recounted a story of a job she had in the early 1970's in which the men with whom she worked would wait until she went home to make big decisions. Gertrude's husband, who shared in childcare responsibilities, suggested that she stay as late as needed so that she could be there when they made major decisions. But the men would still wait until Gertrude had gone home to make the decisions. Gertrude explained that she was "just basically persevering" in that particular job. As she put it, "…I just kept my head high, didn't go into any arguments. I decided the best thing to do, I needed the job and the best thing was to do was just to keep working and do the best I could do." Gertrude is distancing herself from a generalized "other" woman scientist whose career suffered because she didn't respond effectively to discriminatory treatment.

Barbara, a tenured professor in the College of Veterinary medicine, entered Veterinary Medicine at a time when the professors and leaders were still mostly male. Because Barbara's experiences in the field began on the cusp of the shift in sex composition, she is aware of and has experienced some of the gender discrimination and gender bias in the field of Veterinary Medicine. Barbara specifically mentions the "macho" culture and hostility

towards women's participation in veterinary medicine at the time she was a student. For example, Barbara recalls her male cohorts in veterinary school consistently hazing other students, especially women. The male students would pressure women into using chewing tobacco or eating mountain oysters (castrated testicles) and then make fun of and insist that anyone who got sick while doing so was not a real veterinarian. Barbara was also discouraged from pursuing a career in veterinary medicine because she was a woman. When asked if it ever concerned her when she was making the decision to pursue veterinary medicine, a career that was traditionally male-dominated, Barbara replied:

> I think that just made me more motivated that I'm gonna do this thing anyway and nobody's gonna stop me (Barbara).

Like Gertrude, Barbara is distancing herself from a generalized "other" woman scientist who is presumably deterred by others' suggestions that women should not go into certain fields. Not only did Barbara have the type of attitude that allowed her to pursue a career in veterinary medicine even when others suggested she shouldn't, but she was also able to withstand the hazing rituals of her male cohorts in veterinary school.

Raquel, a tenured professor in the College of Arts and Sciences, explains that she is well accepted in her current department due to her accomplishments. Because she is one of only a few members of her current department to receive a prestigious fellowship in her discipline, Raquel claims that she is probably more accepted and better respected than many of the other women in her department. In addition to her success, Raquel also credits her "thick skin" for the ease with which she has progressed in her discipline. When asked if she thought the experience in her discipline was different for women than it was for men, Raquel replied: "…It isn't for me…but that might be because…I have a pretty thick skin…"

Raquel's "thick skin" is evident in her responses to other people. When asked if she had ever received any advice or suggestions as to how she should present herself, Raquel explains:

> Um, when I was, I will always remember this, so when I was an assistant professor and we still do this you know we get written evaluations from the department chair, and every year for like three years in a row I always got wonderful evaluations except that there was always this little comment thing, um…she jumps all over people, something to that affect or something like, she has a terrible temper or something like that…and one day I told my chair I said, you know, I don't want to hear this anymore, if somebody is mad at me because they think I have a bad temper because I chew their butt or something they should come and tell me, you know, I don't want to hear these anonymous comments anymore (laughs). And so I never heard them anymore. I don't know if the person is still mad at me or not but, uh…(Raquel).

Similarly, one of Raquel's graduate advisors suggested to her that she should take home economics because he assumed that as a woman she would need to know how to run a household. Raquel explains her response:

> …And I said you know, you must be kidding me (laughs), he meant well but he was an older guy and I said you must not know me very well (laughs), and I sort of laughed in his face and so he thought it was funny, he said well okay, forgive me for being old-fashioned (laughs) (Raquel).

These two incidents indicate that the way Raquel handles situations minimizes the amount of future conflict and barriers she may face as a result of being a woman in a STEM field.

Raquel does not specifically mention the responses of other women in explaining how she has dealt with conflict. Instead, Raquel's comments and her mention of her status in her department due to her accomplishments imply that other women who continue to face conflict or a hostile work environment likely do not respond correctly. Similarly, when asked at the end of the interview if there was anything else she would like to add, she talked about how women's experiences in STEM fields often depend on whether a woman has assimilated professionally:

> …I think, um, that whether you feel comfortable… in your profession or not is more of a personal thing than a professional thing. So, I think you'll find in every profession women that are very comfortable with what they're doing and feel accepted and have inserted themselves well…I think we hear that a lot about women in STEM fields because I am not sure that that's a STEM field or not a STEM field issue um, maybe it is I don't know (Raquel).

The overall tone of Raquel's interview suggests that she believes the personality traits or interactional style displayed by women can contribute to difficulties in being respected as a professional. For example, according to Raquel's discussion, women who do not "insert themselves" well are more likely to encounter problems as professionals. Raquel attributes her own lack of "problems" to her successes and personality traits. Thus, Raquel distances herself from women who do not effectively deal with conflicts or possess the required personality traits and professional aptitude to assimilate well into their occupation.

When asked if she had ever experienced any personal or professional conflicts in participating in her occupation, Robin, a tenured professor in the College of Veterinary medicine, listed several including being undermined and instances that could be construed as sexual harassment. She did not elaborate or go into detail, but rather provided a laundry list of conflicts. When asked how she responded to these situations, Robin explained that earlier in her growth as a professional she used to agonize over the situations but now she would deal with it on the spot. Robin did not indicate that any of these conflicts negatively affected her career. Instead, Robin explains: "I'm sure I worried a lot more about it than the person that did something to me. It only cost me, it didn't cost them." Similarly, when asked if she thought her experiences were similar or different from those of other women, Robin explained that it depends on the individual and that she chooses not to go around being upset by certain things that probably upset other people. In her comments, Robin distances herself

from women who do let negative situations upset them. Robin's emphasis on her personal interpretation of a situation and the importance of individual perspectives in shaping experiences indicates that she perceives individual attitudes and perspectives as key in determining whether or not conflicts deter women's success.

Brittany, an untenured professor in the College of Engineering, acknowledges a few things that have posed difficulties for either herself or other women, but quickly explains why this has not deterred her success or why it does not "have to be" a success-deterring problem for other women. For example, early in the interview, Brittany discusses a couple incidents in graduate school when male colleagues or professors talked down to her or indicated to her in some way that her presence as a woman in an engineering program was not taken seriously. Brittany comments later in the interview that she has spoken with other women who have had those same experiences. She explains that other women's responses to those situations fall into two categories: "One, people that took that very seriously and kind of sent them into a spiral of self-doubt, and then, two, people that were just like, what a jackass, and moved on." Here, Brittany, who indicates that she fell into the latter category, is distancing herself from women who let negative situations bother them. Brittany's discussion of her own and other women's responses to female-unfriendly colleagues indicate that she acknowledges that attitudes and climate can be negative, but Brittany does not directly identify these things as barriers. Instead, she explains that individual women's responses to such situations determine how they affect women.

Discussion

I began this chapter by asking two questions: Do women in STEM also distance themselves from other women in STEM disciplines? And, do gendered occupational and

organizational expectations influence how women scientists view themselves in relation to the other women in their own field of science? Results presented in this chapter indicate that the answer is “yes” on both counts. Women scientists in this study distanced themselves from other women in their own disciplines in a manner that suggests that their practices were influenced by gendered occupational and organizational expectations. Women scientists’ comments indicate that they believe that their own professional behaviors and modes of conduct set them apart from other women within their own discipline. Some women believe that their ability to suppress stereotypically feminine practices or characteristics distinguished them from other women scientists. Other women scientists believed that they engaged in respectable successful behaviors and made successful decisions and other women did not. And some women scientists believed their own perspectives and attitudes regarding participating in STEM fields allow them to be successful.

The distancing practices in which women scientists engage is a form of what Schwalbe and his colleagues (2000) refer to as “defensive othering.” Women scientists’ distancing practices enabled and allowed them to justify their dissociation from other members of the subordinated gender group—i.e. women. The dissociation, or distancing, from other women scientists is beneficial for these women because they are able to position themselves as more professional than other women scientists.

The ways in which the respondents in this section distinguish themselves from other women scientists indicates that they believe there is a dominant or highly valued way of enacting professionalism. The professional requirements and gendered expectations that are part of a career in an academic STEM field influence what professional practices are valued and how women perceive their own and other women’s gender practices, professional

conduct and individual perspectives and responses. Expressing sentiments or perspectives, engaging in practices or otherwise indicating support for the professional requirements and standards in their field of science allows my respondents to participate as professional scientists without the risk of losing their jobs. The status awarded to stereotypically masculine practices in academic STEM fields further influences women scientists' evaluations of the conduct and behaviors of other women scientists. Below, I will explain how women scientists' discursive acts of distancing themselves from other women are connected to gender practices theory and have implications for inequality between women.

Distancing as Gender Practice/Practicing Gender

Many of my respondents saw themselves as different from and sought to discursively distance themselves from other women scientists in their own field of science. My respondents discursively distanced themselves from women colleagues they perceived as not complying with expectations for professionalism as defined by the values of their occupation. There are two types of expectations for professionalism as indicated by my respondents' comments. The first type includes unspoken, informal expectations such as avoiding stereotypically feminine practices, pursuing success through legitimate institutionalized conduct, and accepting the standards and expectations of one's occupation as legitimate and objective. The second type is consistent with Acker's (1990) "ideal worker" model. My respondents make comments indicating that women scientists need to make strategic decisions that prevent family obligations from interfering with institutional expectations in order to be successful. Both types of expectations for professionalism, as articulated by the respondents, are gendered and closely approximate the lives of most men and idealized masculinity. Thus, by discursively distancing themselves from women whom they perceive

to be violating professional expectations, my respondents are aligning themselves with most male colleagues and idealized masculinity.

As already discussed, there exist appropriate and desirable gender practices for women and men in the general culture and in organizations. A person's understanding of what gender practices are appropriate for different contexts drives practices and individual perceptions and interpretations of the practices of others. Similarly, there is an inherent sense of what practices are valued and have status in different contexts. This sense of which practices are valued and have the most status drives the distancing exhibited by women scientists described in this chapter. Women scientists have to implicitly understand which practices are subordinated in order to distance themselves from those practices. The women scientists in this chapter distance themselves from gender practices and women whose practices and career choices are not deemed valuable or given status in STEM fields.

Thus, for my respondents, discursively distancing themselves from other women scientists is an example of *practicing gender*. Because the professional standards for success are informed by cultural stereotypes regarding femininity and masculinity, the act of distancing oneself from femininity and aligning with masculinity is evidence that my respondents understand and are influenced by both their cultural and occupational context in positioning themselves relative to other women. Similar to differentiation as practicing gender (discussed in Chapter 5), the literal, discursive act of distancing oneself from other women and stereotypically feminine practices is also *practicing gender*. The practices available to my respondents within their respective fields of science, when put into action (either behaviorally or discursively), allow my respondents to position themselves as embodying the desired characteristics for their fields of science. Because the desired

characteristics for most fields of science are those commonly associated with men and stereotypical masculinity, distancing themselves from women who do not comply with professional standards for success works to locate my respondents in a place where they can be seen as "professionals."

Distancing oneself from other women scientists based on professional practices also has implications for the reproduction of cultural gender inequality. As Schwalbe and colleagues (2000) explain, defensive othering allows members of subordinated groups to gain a certain degree of status through their dissociation with other group members. Similar to the differentiation discussed in Chapter 5, distancing also allows women scientists to claim that they are not like other women in their profession. There is an inherent implication that women who have not experienced diminished career success and who claim to have never encountered systemically gendered barriers are extraordinary compared those who have. What makes these women extraordinary, according to my respondent's comments, is their ability to embody occupational standards and expectations of excellence. Behind these statements is a belief in the objectivity of their occupation. Women scientists who distance themselves from women they see as not making the successful career decisions (e.g. regarding work and family) believe in the objectivity of their profession. These women believe that, in reality, merit is rewarded and that gender plays no role in determining success as long as one meets the expectations of the profession. Thus, women who have encountered barriers or experienced diminished career success are perceived as not having what it takes to make it as a successful professional in their field of science. The barriers and discrimination that are a result of gendered occupational expectations that ultimately disadvantage women

are overlooked in favor of focusing on individual level factors in explaining women scientists' diminished career success.

By focusing on individual level factors in explaining why some women are not as successful as others, the women scientists whose views are recounted in this chapter are holding women and men to different standards. In addition to complying with professional expectations and "ideal worker" models in order to be successful, women scientists must also be more strategic and careful in the decisions they make regarding childbearing, respond appropriately to conflict and not let information about discrimination contribute to being "hypersensitive" about gender discrimination. In other words, women scientists who hold women to different standards than men indicate that they accept the structures that are disadvantageous to women in the first place. As women are often the people doing the most work to transform institutional structures and address gender discrimination (Bird, Litt and Wang 2004), having women detractors can make such efforts appear useless to outside observers.

CHAPTER 7: DISCUSSION

The purpose of this study was to explore whether or not the gender practices in which women engage when interacting with other women contribute to status hierarchies among women. How and to what extent does the "ideal worker" construction in academic STEM fields influence women scientists' gender practices? Data presented in the preceding chapters reveal that women scientists do engage in practices meant to differentiate and distance themselves from other women. The differentiation and distancing in which women scientists in this study engage acts to create a symbolic hierarchy of women based on occupation, intellectual and cognitive skills and professional practices. This study contributes to extant literature on women in STEM fields and gender practices in the workplace in that it illuminates the role that gender practices play in creating status hierarchies among women. The findings of this study have implications for women working in STEM fields as well as for gender theory. This chapter will explore these implications as well as the opportunities women working in academic STEM fields may have to transform the culture and environment of STEM disciplines.

Implications of Differentiation and Distancing

Much of the literature on women in STEM fields has focused on either the "pipeline" approach to explaining women's under-representation in STEM, or on explaining how occupational and organizational expectations, norms and standards influence women's experiences and opportunities as professionals. This study differs in that it focuses on how women themselves participate in reproducing the expectations, norms and standards that ultimately disadvantage women professionals in STEM fields. Consistent with previous research (Ely 1994, 1995; Kvande 1999; Miller 2002, 2004; Pierce 1995; Williams 1995),

this study highlights the influence that the gendered structure of STEM occupations has on workers' gendered constructions of themselves as professionals. Also consistent with previous research, my findings indicate that within academic STEM, characteristics commonly associated with stereotypical masculinity are valued over those associated with stereotypical femininity (Etzkowitz, Kemelgor and Uzzi 2000; Kvande 1999; Miller 2002, 2004). While I do not have observation data to determine if my respondents' colleagues perceive women scientists who do not comply with occupational and organizational expectations for behavior as "unprofessional" or "too feminine," other studies suggest that this may be the case (Ely 1994, 1995; Miller 2002, 2004; Pierce 1995).

Past research tells us that practices and characteristics associated with stereotypical masculinity are reproduced in male-dominated occupations through occupational and organizational structures and also through the practices of workers. Stereotypically masculine practices are encouraged in workers both because the history and culture of the occupation identifies such practices as ideal and because the more "masculine" an occupation appears, the greater the pay and prestige associated with that occupation (Kilbourne, England, Farkas, Beron and Weir 1994; Reskin and Roos 1990; Steinberg 1990; Williams 1995). Similar tendencies can be found in STEM fields. As indicated by my respondents' discursive acts of differentiation and distancing, practices associated with stereotypical masculinity are encouraged and considered ideal for professionals, including women, in STEM disciplines. The tendency to devalue stereotypically feminine practices and characteristics is driven by assumptions about the value of such practices and characteristics in the labor market. Jobs that are female dominated or involve practices associated with stereotypical femininity often have lower prestige and lower pay precisely because femininity is devalued (Kilbourne,

England, Farkas, Beron and Weir 1994; Steinberg 1990; Williams 1995). Past research suggests that my respondents' discursive acts of differentiation and distancing are driven by a belief that women who do not embody the "ideal worker" characteristics or who fail to engage in "ideal worker" practices are potentially compromising the prestige and pay of their occupation.

Similar to the men who were employed in female-dominated occupations in Williams' (1995) study, women scientists in the present investigation engaged in boundary heightening. *Boundary heightening*, as discussed by Williams (1995), occurs when differences between women and men are accentuated using stereotypical notions of femininity and masculinity. Men, as tokens in female-dominated occupations, benefit from differentiating from women in that the more they differentiate from women and femininity, the more masculine they appear to others. Men benefit professionally from aligning with stereotypical notions of masculinity (Connell 1987, 1995; Williams 1995). The same can be said for women in STEM fields. For women in STEM fields, it is beneficial to appear as different from women and stereotypically feminine practices and characteristics as possible due to the cultural and occupational devaluation of stereotypical femininity. My respondents draw on cultural and occupational beliefs regarding ideals and valued practices for workers in order to distinguish themselves from other women. In doing so, they reiterate cultural beliefs that women and stereotypical femininity are less suited for work in academic STEM fields and that the women who emulate stereotypical practices of masculinity as they participate and are successful in STEM fields are extraordinary.

Women scientists' acts of differentiation and distancing indicate that they understand on some level the informal and unspoken standards for conduct required of individuals

working in their field of science. Further, as indicated in their comments, these women understand that many of the requirements and standards for professionals in their field of science are gendered, though they would not describe them this way. Comments made by women scientists in this study indicate that they understand that practices stereotypically associated with femininity are not desirable within academic STEM disciplines. Differentiating or distancing from practices stereotypically associated with femininity is probably considered a normal part of enacting professional behavior for STEM disciplines. Thus, in some ways women scientists' acts of differentiation and distancing may have contributed to their ability to be successful in their field of science.

In this regard, the discursive practices of differentiation and distancing displayed by women scientists in this study are consistent with previous research on gender practices at work. For example, some of the women lawyers in Ely's (1994, 1995) studies and some of the graduate women physicists in Ong's (2005) study also discursively differentiated themselves from other women lawyers and other graduate women physicists, respectively. The lawyers and physicists in Ely's and Ong's studies, in many cases, distanced themselves from women and stereotypical femininity, emulated the masculine practices and norms of their occupation and in doing so, became successful as professionals. Similarly, some of the women in Miller's (2002, 2004) and Kvande's (1999) studies sought to align as much as possible with the masculine standards of the occupation and organization in which they worked. For the women in Miller's and Kvande's studies, aligning with masculine standards was a strategy for surviving within a male-dominated occupation that privileged men and masculinity.

The women scientists depicted in the current study displayed similar tendencies, especially with regards to distinguishing themselves from women and stereotypically feminine practices and characteristics. The comments made by women scientists indicate that they believe that distancing themselves from stereotypically feminine practices and characteristics will enable them to be successful and embody "professionalism" as defined by their discipline. What distinguishes the results of this study from the results of the studies mentioned above is that this study specifically focuses on how women actively distance themselves from stereotypically feminine practices and characteristics. While Ely's (1994, 1995), Ong's (2005), Miller's (2002, 2004) and Kvande's (1999) studies reveal similar results, those researchers framed their findings within the contexts of constructing femininities in male-dominated occupations (Kvande 1999; Miller 2002, 2004; Ong 2005) or constructing gender identity at work (Ely 1994, 1995), while this study demonstrates that women scientists' discursive gender practices served the purpose of positioning themselves as having a higher status than other women. This study extends knowledge of gender practices in the workplace and the experiences of women in STEM fields in that the results reveal how women are referencing the professional behaviors of other women and stereotypically feminine practices and characteristics as indicators for how they are of a higher status than other women. Moreover, the results of the current study reveal that women often practice gender with the purpose of subordinating other women.

It is also worth noting that the women in this study walk a "tight-rope" of occupational expectations and cultural expectations for gender practices. Participating in an environment that emphasizes masculine practices as professionalism is often at odds with cultural expectations for women to enact stereotypically feminine practices and

characteristics. Further, as it has become more acceptable and commonplace for women to have fulfilling careers, it is natural to expect that women will dedicate themselves to their careers and work to attain success. I am not criticizing women for engaging in practices that ultimately lead to career success. Rather, I am criticizing the cultural and organizational structures that constrain the range of acceptable, rewarded and valued practices for workers to be considered professionals and receive appropriate and due rewards for their efforts. On the one hand, women attain success for complying with occupational and organizational expectations. This elevates women's status in culture in that they demonstrate that women can have successful careers. On the other hand, the practices in which women in academic STEM fields must engage to be successful ultimately reinforce systemic biases and expectations that reproduce men's cultural dominance.

STEM Women as "Non-Challengers"

The discursive differentiation and distancing in which my respondents engaged is practiced with occupational and organizational standards in mind. My respondents engaged in differentiation and distancing with the purpose of distinguishing themselves as professionals who are well-suited to participate in STEM fields. By identifying the behaviors and choices made by other women as the focus for differentiating or distancing from other women, my respondents are reinforcing the constraints on acceptable practices in STEM disciplines. For example, many women scientists who engaged in differentiation or distancing identified certain behaviors or choices made by other women as the point of differentiation. The differentiation and distancing in which my respondents engaged reinforced informal gendered occupational and organizational expectations. As gendered occupational and organizational expectations are often the bases for and uphold existing

power structures that privilege men over women in STEM fields, my respondents' discursive acts of differentiation and distancing posed little, if any, challenge to existing status and power gaps between women and men in academic STEM.

This finding is particularly interesting in light of the fact that many, though not all, of the women scientists in this study expressed an understanding of the systemic nature of the barriers to success in academic STEM that women face. In analyses not explained in other chapters, I found that the women in this study expressed a wide range of perspectives about the causes of women's under-representation and barriers to women in STEM fields. I examined also the extent to which each woman scientist attributed women's under-representation and/or women's professional marginalization in STEM fields to structural factors. This analysis revealed three primary categories of beliefs held by women scientists about the gender disparities in academic STEM disciplines. The first category was exemplified by the view that individual level factors account for who succeeds in STEM disciplines. These women, in other words, perceived no systemic barriers for women in STEM fields. The second category included women who believed that while systemic barriers to women's success in STEM might have existed in the past, no such barriers exist for women today. The third category included respondents who perceived systemic barriers to women's advancement in STEM fields, citing the climate of STEM fields and institutional policies and practices as disadvantageous to women. Women scientists subscribing to the third category of beliefs, however, were no less (or more) likely to engage in differentiation or distancing practices than were women who subscribed to either the first or second category of beliefs.

The fact that women who perceived systemic barriers to women's advancement in STEM fields also engaged in differentiation and distancing is particularly revealing. Even women who seem to be aware of and somewhat critical of the gendered structure of academic STEM fields engage in differentiation and distancing, which ultimately reinforces institutionalized norms, expectations and standards of STEM fields. These women are often aware and critical of gender discrimination and bias in terms of evaluating female job candidates or female professionals. However, they do not necessarily reserve the same type of criticism for occupational and organizational expectations for gendered behavior. For example, women who indicate awareness of systemic barriers for women in STEM fields still distance themselves from women who engage in stereotypically feminine practices and characteristics or do not make strategic decisions regarding work and family. Thus, in this way, my respondents perceptions of institutional barriers to women's success in STEM fields did not determine how they positioned themselves relative to other women.

While I frame differentiation and distancing as practices that do not challenge institutional norms, standards and expectations, it is unclear to me what "challenging" behaviors *would* look like. To challenge institutionalized policies and practices, such as those regarding work and family balance, would be difficult because institutional policy largely constrains what workers are able to do and still keep their jobs. To challenge the gendered expectations, norms and standards for professional conduct and behavior would be much more difficult to observe, especially because workers have a vested interest in and desire to keep their jobs. The lack of definitive evidence of women scientists challenging gendered arrangements, beliefs and expectations may, however, simply reflect a limitation of the current study. As this study employed semi-structured interviews as the primary means of

data collection, I must rely on women scientists' verbal accounts of their own practices and the practices of other women. I acknowledge that it is possible that some of my respondents challenge gendered expectations in subtle ways that I was unable to explore during an interview.

In addition to not "breaking the rules" of conduct in STEM fields, my respondents may be refraining from openly challenging the gendered norms and expectations because they have internalized and come to identify with the gendered norms and expectations in academic STEM work. Many of my respondents made statements indicating that they felt that the "rules" of conduct for their field of science were legitimate and practical. Moreover, those respondents engaging in differentiation and distancing did not indicate that they felt that science could be "done" any other way. Being a successful scientist in their discipline is dependent on my respondent's ability to "do" science the way they learned how to "do" science throughout college, graduate school, post-doctoral positions and as professionals. The more my respondents are able to replicate what they see as "doing" science, the more professional and successful they appear both to themselves and to others. If workers can "play the part" of a scientist, in both research and personal conduct, then they are considered successful. To openly criticize and/or challenge the gendered expectations, for my respondents, may seem like criticizing or challenging the foundation on which they built their career and success.

Meyerson and Tompkins' (2007) concept of embedded agency is useful for understanding how the internalization of institutional arrangements and expectations and common practices in "doing" science may help produce practices of differentiation and distancing. According to Meyerson and Tompkins (2007), *embedded agency* is the tendency

for institutional arrangements to constrain a person's ability to imagine alternatives to such arrangements. This occurs through institutionally sanctioned schemas, incurred through professional socialization, which result in a person attending to and favoring structures, arrangements, standards, expectations and belief systems that are supported by the institution of which they are a part (2007: 308). According to Meyerson and Tompkins (2007), the more an individual has been socialized into and benefits from existing institutional arrangements, the greater difficulty they will have in being critical of those arrangements.

The hesitancy on the part of some of my respondents to criticize or challenge the existing structure and arrangements of their discipline, as discussed above, may or may not suggest that they accept such structures and arrangements as legitimate. In many cases, the norms and values of an occupation or organization, when internalized and accepted, deter any perspectives or practices that deviate from what is accepted as legitimate within that occupation or organization (Cohn 1993). While many of my respondents indicate that they understand that barriers exist for women and that organizational structures and policies often disadvantage women, they also feel constrained in the types of choices they can make. The types of perspectives with which my respondents choose to align themselves, and the types of practices in which they choose to engage are often reflective of the perspectives and practices valued (or devalued) by their occupation. If a woman chooses to align herself with the devalued perspective, she risks being disrespected as a professional, potentially leading to more barriers and conflicts. The differentiation and distancing displayed by many of my respondents could be a product of their having internalized institutional arrangements, values and practices. When distancing from other women, my respondents are in effect implying that the conduct of other women was not consistent with institutional expectations. They may

not actually believe in the legitimacy or values placed on masculine characteristics over feminine characteristics, but choose to align with this perspective so as not to jeopardize their own careers.

Self-Control

Some of my respondents, as indicated by their comments regarding differentiation and distancing, hold other women scientists to a different set of standards than men scientists. These standards, as explained in Chapter 6, include rejecting feminine characteristics, managing one's professional behavior and conduct so as to comply with gendered occupational and organizational expectations, and dealing appropriately with conflict. These standards or expectations are not formal work requirements for academic STEM disciplines and require a level of self-control that is not typical of formally acknowledged work practices. For example, some of my respondents believe that their ability to suppress stereotypically feminine characteristics and avoid engaging in such practices sets them apart from other women scientists. Some of the women in this study believe that other women scientists do not exercise the self-control necessary to avoid engaging in practices that are inconsistent with occupational and organizational standards and ideals (i.e. stereotypically feminine practices).

The self-control that my respondents advocate and the resulting practice of distancing is similar to West and Zimmerman's (1987) concept of accountability. Other people, and individuals themselves, hold women and men responsible for complying with expectations for gendered behavior given one's sex category (West and Zimmerman 1987). In this manner, individuals are consistently being held accountable to the gender order. In this study, the self-control that my respondents expect of other women scientists is similar to

accountability in that the gendered occupational and organizational expectations prescribe certain kinds of behavior for scientists. Women scientists, in order to comply with expectations for behavior, must constantly monitor and control their own practices, responses and actions. The women scientists from whom my respondents distance themselves are those who have not exerted the appropriate level of self-control.

Over time, the repeated uses of self-control by women scientists in their personal practices that reference the "ideal worker" model become part of the broader set of practices expected of all women. Exercising the self-control necessary to comply with informal workplace expectations is itself an informal work practice, according to my respondents. This may have implications for women scientists' ability to support other women scientists. If informal criteria, such as self-control, are used to evaluate workers, and if women scientists buy into these criteria, then they will likely evaluate other women scientists using these criteria. This can contribute to further acts of distancing and differentiation.

As the acts of differentiation and distancing in which some of my respondents engage are discursive and I was unable to observe my respondents interactions with women colleagues, it is unclear whether or not discursive acts of differentiation and distancing play out in interactions with other women scientists. Extant literature on the treatment of tokens in work organizations provides a starting point for speculating as to what the manifestation of differentiation and distancing may look like. As Kanter (1977) and Williams (1995) explain, men often try to differentiate and distinguish themselves from women in work organizations, regardless of whether women are in the minority or not. The purpose of this *boundary heightening* is to elevate the status of men and masculinity relative to women and femininity (Williams 1995). Boundary heightening may also reinforce and reproduce the masculine

nature of male-dominated occupations. Those engaging in boundary heightening, I argue, have a vested interest in maintaining the gendered occupational and organizational expectations precisely because these expectations have allowed those individuals a certain level of success. In other words, the gendered expectations work for them and they have found a way to navigate the professional climate within the expectations.

Some of the literature on women in STEM fields has also indicated that women, as tokens, are treated differently by their male colleagues (Beoku-Betts 2006; Sheridan 1998; Fox 1991; Rosser 2006). These scholars report that women in STEM fields must often contend with marginalization, isolation or exclusion from the dominant group. One could conclude that the marginalization, isolation and exclusion that women in STEM fields face are forms of boundary heightening. The women scientists in this study, though they were not the "dominant group," also engaged in boundary heightening in the form of discursive acts of differentiation and distancing with the purpose of attempting to align themselves with practices that were more highly valued.

If the women scientists who engaged in the discursive acts of differentiation and distancing are also marginalizing, excluding or isolating women who engage in practices that are not "approved" by occupational and organizational standards, the negative effects could be long lasting. As discussed in Chapter two, women in STEM fields who are marginalized, excluded or isolated from mentoring, professional networks, decision making and information exchange and collaborative research often suffer professionally (Beoku-Betts 2006; Sheridan 1998; Fox 1991; Rosser 2006; Zuckerman 1991). As explained by Zuckerman (1991), access to resources is often necessary in order for a scientist to do the kind of research that leads to publication. Similarly, access to professional networks

facilitates collaborative relationships, which also facilitate access to research funding and more publications (Zuckerman 1991). In other words, *if* the discursive acts of differentiation and distancing manifest themselves in marginalization, exclusion and isolation, women scientists could be reproducing many of the climate issues that contribute to women's lower status and subordination in STEM fields.

Defensive Othering

Defensive othering, identified by Schwalbe as a "generic process in the reproduction of inequality," is useful for understanding how the findings of the present study also have implications for gender inequality. What makes defensive othering a process in the reproduction of inequality is the tendency for those engaging in this process to accept the legitimacy of the devalued identity imposed by the dominant group and then distinguishing themselves from the individuals to whom this identity applies (Schwalbe et al 2000). By distinguishing themselves from, or "othering" members of their own group, the stereotypes, myths and beliefs that legitimate the dominant group's superiority is reinforced (Schwalbe 2000). The discursive acts of differentiation and distancing in which my respondents engaged allowed my respondents to position themselves as superior to other women based on possessing characteristics and traits or enacting practices similar to those possessed and enacted by men. In other words, my respondents are identifying with the dominant group within their professional and organizational context—men.

Defensive othering and the outcomes associated with it, explained by Schwalbe and colleagues (2000), occur throughout society, not only in organizational contexts. There are similarities between the outcomes of the present study and dynamics found in other contexts that are dominated by men and constructed as "masculine." Ezzell (2009), for example,

found that women rugby players also engaged in defensive othering with the purpose of positioning themselves as having a higher status than other women in their lives. One of Ezzell's (2009) main findings, *identifying with dominants*, is consistent with the major themes presented in this study. *Identifying with dominants* was used by women rugby players to position themselves above women in general, other women athletes (non-rugby players), and other women rugby players. Ezzell's rugby players positioned themselves as superior to women in general by emphasizing the aggressiveness and roughness of their sport and the inability of most women to embody these characteristics. The generalized "other woman" was cast as "weak" by comparison. This is similar to the findings discussed in chapter 5 of the present study in which women scientists positioned themselves as possessing cognitive and intellectual traits and abilities that they believed the general woman did not possess. As pervasive stereotypes suggest that boys and men have greater aptitude for math and science, and that STEM disciplines are "masculine" domains, any woman who succeeds in academic STEM is apt to be viewed by others as unusually talented and may come to view herself in this manner as well. In doing so, as the participants in my study suggest, many women scientists accept and perhaps even embrace the idea that they are "extraordinary" compared to the everyday woman. By virtue of identifying with men and positioning themselves as "extraordinary" relative to the "general woman," my respondents are reinforcing sexist beliefs about women and women's abilities.

Similarly, as explained in chapter 6, some women scientists distance themselves from other women scientists based on their ability to suppress what they see as "innate" feminine characteristics. They equated expressions of femininity with a lack of professionalism. And for this reason, my respondents distanced themselves from women who, in their view, failed

to suppress non-professional expressions of femininity. My respondents' abilities to suppress such expressions may have elevated their status in the workplace. At the very least, it elevated their feelings of self-worth. At the same time, distancing results in the dismissal of practices thought to be "unprofessionally feminine," thereby reinforcing the devaluation of stereotypically feminine characteristics and practices in STEM fields.

Also explained in chapter 6, some women scientists distanced themselves from other women scientists they perceived as not having done everything within their power to ensure that barriers to women in STEM did not deter their success. It is these women scientists, according to my respondents' comments, who run into barriers or experience diminished career success as a result of having encountered barriers. My respondents are subordinating these other women by implying that women who encounter barriers somehow brought it on themselves (through their actions or inactions). There are many common excuses provided for why women are under-represented or do not advance in STEM disciplines. Many of these excuses imply that women lack the ability or training to be successful. Others imply that women are less serious about their careers if they take time off work to have children or do not plan their family life around their career aspirations. By referencing such stereotypes that excuse gender inequality by pointing to individual mistakes or short-comings, my respondents are further subordinating women in STEM fields.

While women may be positioning themselves in a superior position relative to other women in order to increase their own feelings of self-worth and affirm their position as a professional in STEM fields, they are also reinforcing the stigma associated with stereotypically feminine characteristics, traits and practices. If women scientists who buy into gendered occupational and organizational expectations for behavior are in positions of power

within an academic STEM department, and they use these informal expectations in evaluating other women, they could potentially reproduce much of the discrimination in hiring, promotion and tenure that has plagued women in these disciplines.

Theoretical Contribution

This study has set out to understand whether or not women subordinate other women through the use of gender practices. The theoretical framework I laid out in Chapter 3 focused on how women's positioning of themselves relative to other women is dependent on the interplay of gendered cultural and organizational expectations. The findings of this study have demonstrated that both cultural and organizational expectations influence how women position themselves relative to other women. Further, the findings of this study have implications for a gender practices approach. First, the findings provide an example of discursive gender practices, a concept that Martin (2003) mentions, but does not elaborate on in her work. The findings of this dissertation have demonstrated that the discourses or ways in which people talk about certain issues, are gendered and constitute gender practices and practicing gender. Having an empirical example of discursive gender practices demonstrates that gender practices are varied, complex and subtle. Second, the findings demonstrate the importance of context in determining *how* women may use gender practices to create hierarchies among women. Finally, the findings demonstrate that, based on the gender practices in which women engage, hierarchies can exist among women who have the same structural status and privileges (such as race, ethnicity, sexual orientation and job title).

This study has contributed to our knowledge of gender practices in that it reveals the subtleties and complexities of gender practices, as noted by Martin (2003). Martin's (2003) own account of gender practices acknowledges that gender practices are varied in form and

substance. As Martin explains, gender practices are "a class of activities that are available—culturally, socially, narratively, discursively, physically, and so forth—for people to enact in an encounter or situation in accord with (or in violation of) the gender institution" (2003: 354). By describing the ways in which women scientists position themselves relative to other women, this study has focused on the discursive component of Martin's definition of gender practices (Mathieu 2009).

The data in this study may serve as an example of what discursive *gender practices* may look like or what discursive acts of *practicing gender* may look like.[4] Gender is practiced in the things we may actually say to—or in the presence of—other people. For example, in Martin's own work, she recounts a scenario from her field research in which a male vice president of a company (Tom) asks a colleague who is a female vice president (Betsy) to answer a ringing phone (2003). This is an example of narratively practicing gender in that Tom called on assumptions about women's work roles in his request for Betsy to answer the phone. Gender may also be practiced discursively in the way we depict or position ourselves relative to others. The ways in which we describe our own traits, characteristics and practices and those of others may reference gendered expectations and standards that are part of the gender institution or gendered expectations within a particular context. The discursive acts of differentiating and distancing displayed by women scientists in this study are examples of gender practices precisely because they are enacted under the influence of cultural gendered expectations and within a gendered context.

Culturally, the contexts in which gender practices are enacted determine how those gender practices are interpreted by others (Connell 1987; Martin 2001, 2003). The same may be said of professional practices enacted within an organization. The same practice, enacted

in a grocery store may take on an entirely different meaning within a work organization. For example, as elaborated by the women scientists in this study, stereotypically feminine practices enacted by women may be met with disrespect or disapproval in an academic STEM discipline. Therefore, knowledge of both cultural and contextual (i.e. professional) gender expectations is necessary for women scientists to appropriately enact a "professional" work persona and position themselves relative to other women. The women scientists in this study indicate that they evaluate other women (both scientists and non-scientists) using a combination of cultural and contextual gender expectations and standards. The intersection of cultural and contextual meanings allow the women scientists in this study to discursively position themselves relative to other women in a way that gives them more status. My respondent's discursive gender practices within the context of academic STEM disciplines give them status both within their discipline and in the general culture.

Thus, while gender practices are a class of actions that are "available for people to enact" (Martin 2003: 354), they are also available for people to use in discursively describing, depicting or positioning oneself or others. For the women scientists in this study, the gendered standards of a particular context, STEM disciplines, provides them with the *resources* to position themselves as superior to other women. The status that discursively differentiating or distancing from other women provides is context specific and relies on the expectations, norms and standards of STEM disciplines as support. The work of Pyke and Johnson (2003) and Myers (2005) also demonstrates that the status women attain over other women is context-specific. For example, the Asian American women in Pyke and Johnson's (2003) study attain status enacting a white, American femininity when interacting within the dominant culture. This status may not translate to other cultures as the practices of white,

American femininity are drawn from cultural belief systems that define those practices as desirable or typical of American women. The women in Myers' (2005) study enacted a class-based type of femininity, "ladyhood," which carried status relative to other types of femininity within a particular activist organization. "Ladyhood" would likely not carry the same type of status in a radical feminist activist organization.

While the results of this study are similar to those of Pyke and Johnson (2003) and Myers (2005) in that they demonstrate the importance of context in determining the status of some practices over others, it differs in another way. The work of Myers (2005) and Pyke and Johnson (2003) demonstrate how women's status relative to other women is determined by social characteristics such as social class or race. For example, the women in Myers (2005) study held a class-based status and the women in Pyke and Johnson (2003) held a race-based status. The work of Hamilton (2007) also reveals how women attain status relative to other women based on sexual orientation. Hamilton's (2007) study examined the tendency for heterosexual female college students to create social distance from lesbians in order to receive attention from a male audience. These statuses, described by Myers, Pyke and Johnson and Hamilton are derived from more general cultural statuses awarded to white, middle-class and heterosexual individuals. "Femininities" are configured (Connell 1987, 2002) according to race, ethnicity, social class and sexual orientation, and the different configurations of "femininities" are awarded different social status based on the social characteristics from which they are derived. The results of this study demonstrate that women may achieve status over other women based on practices alone. In other words, the differentiation and distancing in which many of my respondents engaged was not directed

specifically at women with different social characteristics. It was directed at women who did not engage in the gender practices deemed appropriate or acceptable for STEM fields.

Limitations and Future Research Suggestions

As with any research study, the present study is limited in multiple ways. The primary limitations of this study are: 1) the under-representation of women of color in my sample; 2) the context of academic STEM disciplines limits the ability to observe direct interactions between women and generalize the findings to other contexts; and 3) my status as an outsider to STEM fields may have prevented me from seeing cooperation between women or types of resistance that were not consistent with my own understanding of how to challenge institutional structures. Further, my status as a graduate student may have made some women hesitant to talk about their belief in the need for institutional change, or to share with me their participation in activities meant to enact institutional change.

First, only five of my respondents were women of color. The low percentage (5%) of women of color faculty members at the University at which my sample was drawn partially explains why so few women of color were included in my sample. I was unable to recruit women from every STEM department on campus; therefore, the total number of women of color was further reduced. Because there were so few women of color in my sample, I was unable to identify the race or ethnicity of my respondents in Chapters 5 and 6. To do so, would compromise the anonymity of my respondents. While I cannot make any conclusions about the role race or ethnicity may have played in my respondent's discursive acts of differentiation and distancing, it is worth noting that many of the white women in my sample spoke about race anecdotally or as something that was removed from their own experience. Future research should examine the role that race and ethnicity may play in differentiation

and distancing more closely. Women of color are under-represented in STEM fields at most research-intensive Universities in the United States. In order to ensure that the intersection of race or ethnicity with gender practices can be examined, future research will need to purposively sample women of color as well as involve multiple Universities to ensure a larger sample of women of color in STEM fields.

My data were derived primarily from interviews; therefore, I cannot draw conclusions about the gender practices in which women engage when *directly interacting* with other women. As most of my respondent's day-to-day work takes place in front of a computer in their office or in a laboratory, there were very few opportunities for me to observe them interacting with their colleagues. This is the product of doing qualitative research about academics in the context of a University. Academic work largely takes place alone in front of a computer and interactions with colleagues, for the most part, will take place spontaneously throughout the day, usually on a one-on-one basis. Further, faculty meetings are confidential; therefore the opportunities to observe women scientists in any organized interactions are very limited. Future research should focus on a work climate in which frequent interactions with work colleagues is common and restrictions to outsiders are few.

As a social scientist, my knowledge of the unspoken norms and informal practices within certain STEM fields is limited. Because I do not practice science in the same way as my respondents, my understanding of how women in STEM fields *could* resist gendered structures or build alliances with other women sciences in their professional work is limited. My own perspective as a social scientist may have prevented me from seeing potential forms of alliance building and resistance in which my respondents may have participated. Also, the types of questions I asked of my respondents may have been too narrow or denied my

respondents the opportunity to talk about their acts of resistance or alliances with other women scientists. It is worth noting that many women scientists cited their female colleagues as sources of professional support, motivation or encouragement, which could enable the formation of alliances among women. Further, my status as a graduate student may have made some of my respondents hesitant to talk about their belief in the need for institutional change or share with me their efforts to enact change.

The findings of this study are a product of the gendered occupational and organizational expectations for behavior. These expectations include shared understandings of what constitutes a successful scientist, thus the differentiation and distancing in which my respondents engaged are specific to academic STEM fields. Different discursive or interactional practices may emerge in other contexts based on contextual expectations and standards for conduct. Thus, future research should examine the effect of different contexts on women's practices.

Implications for Change

Ideally, harmful cultural and organizational gendered expectations and arrangements need to change in order to eradicate all forms of gender inequality. Organizational structures also need to change so as to place equal value on both feminine and masculine characteristics and practices. But, there are many barriers that confront those individuals and programs working to enact change in gendered occupational and organizational structures, expectations and practices. Regarding the need to change cultural and organizational gendered structures, Christine Williams states: "Making these structural changes in the interests of achieving gender equality seems a remote possibility today" (186). I agree with this statement, thus, I

turn my attention to more attainable solutions to altering harmful gendered expectations and arrangements within academic STEM disciplines.

As indicated by the results of this study, women scientist's distancing from other women is linked to gendered occupational and organizational arrangements, beliefs and expectations. This relationship is reciprocal. The gendered occupational and organizational arrangements, beliefs and expectations in STEM disciplines lays the foundation for women scientist's distancing from other women, which then contributes to the reproduction of gender inequality in STEM disciplines. When women scientists distance themselves from other women there is little chance for a collective consciousness among women in STEM disciplines. When women themselves support the very structures that subordinate women as a group, the likelihood that gender inequality in STEM disciplines will be addressed at all is diminished. As Meyerson and Scully (1995) state: "…change often comes from the margins of an organization, borne by those who do not fit well" (586). Further, women are often the primary activists of institutional change initiatives (Bird, Litt and Wang 2004). Thus, women's awareness of gendered occupational and organizational arrangements, beliefs and expectations can inspire a collective consciousness which may then motivate "change form the margins."

But how do we get women to "see" the gendered occupational and organizational arrangements, beliefs and expectations? As I have explained, many of the women scientists in this study seem to have internalized the prevailing institutional arrangements, beliefs and expectations within their disciplines to the point where they are uncritical of the status quo. Meyerson and Tompkins (2007) explain that exposure to competing "institutional logics" or perspectives on organizational arrangements can bring about the awareness in individuals

that contributes to change. Competing "institutional logics" may be thought of as competing perspectives on the structure and functioning of institutions. If women scientists hold a standpoint as both scientists and feminists, then they would be better positioned to not only be critical of the structure of STEM fields, but to also engage in efforts in order to ensure women's equitable participation, acceptance and evaluation. I am not suggesting that women scientists should be pressured into being feminists; rather I am suggesting that information exchange and education could go a long way in bringing different perspectives to women scientists. Below, I explain how the strategies and outcomes of a committee that emerged as part of a United States National Science Foundation (NSF) program called "ADVANCE"[5] can be used as an example of the effectiveness of education and information sharing in raising awareness of gender bias among women scientists.

Stewart, Malley and LaVaque-Manty (2007) describe a committee implemented at the University of Michigan (UM), an early recipient of an NSF ADVANCE grant. The principal investigator on the ADVANCE grant at UM created STRIDE (Strategy and Tactics for Recruiting to Improve Diversity and Excellence), a committee aimed at improving the recruitment and hiring of women scientists (Sturm 2007). The committee was made up of both female and male STEM faculty members whose tasks were to increase faculty awareness of issues involved in recruiting and hiring women and to open a constructive dialogue among faculty about hiring women within STEM disciplines. One of the ways by which those creating the committee chose to achieve this goal was to recruit both female and male full professors in STEM disciplines to be on the committee. The purpose of this was to increase the chances that the message of STRIDE committee members would be well-received and perceived as legitimate by other scientists. The STRIDE committee members

went through an intensive process of self-study of social science research on gender bias followed by discussions about the research with other STRIDE members.

The STRIDE committee developed a presentation on gender bias that was used in workshops for faculty members and administrators. Stewart, Malley and LaVaque-Manty (2007) include feedback from participants of these workshops in their description of the STRIDE committee and their accomplishments. According to feedback from participants, the information on how gender schemas influence the evaluation of job candidates and hiring was influential in changing the practices during faculty searches. The impact that participating in STRIDE had on committee members was particularly telling. Committee members reported that the self-study, specifically the information on unconscious bias, had a strong impact on the way they thought about the conditions and problems for women in STEM fields. One committee member described the self-study process as "consciousness-raising," while another member explained that hearing the principal investigator's presentation of social science research on gender bias was a turning point: "…that made me feel that the problem was larger than I thought. I think everyone on the STRIDE committee…realized that the problems were larger than people thought" (Sturm 2007: 272). The women committee members were able to take what they learned and apply them to their own experiences, often realizing that they had encountered unconscious bias in their own careers that they had previously denied existed (Stewart, Malley and LaVaque-Manty 2007). All of the STRIDE committee members mentioned that they felt more confident in interacting with colleagues and intervening in negative gender dynamics within their own departments as a result of the knowledge gained (Sturm 2007).

Many of the strategies used by the STRIDE committee can be used as examples for understanding how to inspire a collective consciousness and establish networks among women in STEM disciplines. The examples from the STRIDE committee demonstrate the effectiveness of education and information sharing. As the STRIDE committee was made up of well-established scientists at the University, the reception of social science research on gender bias among workshop participants was positive. Learning about social science research on gender bias from other scientists facilitated workshop participants' understanding of the importance of such information within the context of talking about barriers for women in STEM disciplines. If women scientists in the present study can come to understand the importance of gender biases on barriers for women in STEM fields from other scientists, they may be able to develop a shared understanding of the impact of such bias on their own careers. This shared understanding, if supported by information about the importance of eradicating such bias and barriers, could motivate women to work together to transform the culture of their fields from within.

Another benefit of having scientists and engineers present this information to other scientists is that they have "insider" knowledge of the culture, lingo and belief systems of STEM disciplines (Sturm 2007). This "insider knowledge" could be used to develop a presentation for STEM faculty members and administrators that address the internalized arrangements, beliefs and expectations of STEM disciplines, allowing presenters to "mold" the presentation of information to the mindset of other scientists. For example, one STRIDE member noted that they were able to draw on the replicability and high validity of the social science research on gender bias to lend credibility to the studies among a skeptical audience of scientists and engineers (Stewart, Malley and LaVaque-Manty 2007; Sturm 2007).

As the social science literature on gender bias had a profound impact on the members of the STRIDE committee at the University of Michigan, I draw optimistic inferences about the impact such information could have on the women scientists in the present study. In their presentations on gender bias, STRIDE committee members made sure to emphasize that both women and men relied on gender schemas so as not to alienate any workshop participants or imply blame (Stewart, Malley and LaVaque-Manty 2007). This same strategy could be used to explain how gendered institutional arrangements, beliefs and expectations are just as harmful to women scientists as individual gender bias. The impact of STRIDE workshops on recruitment and hiring practices as well as testimonials from STRIDE committee members indicates to me that using well-respected scientists to inform other scientists of social science literature on gender bias is an effective strategy. Moreover, combining these strategies may contribute to self-awareness among women scientists. For example, explaining that both women and men use gender schemas and explaining how gendered institutional arrangements, beliefs and expectations influence women's status in STEM fields could potentially bring about self-awareness in women scientists themselves. Ideally, the self-awareness would increase women scientists' vigilance in monitoring their own beliefs and practices as well as motivating them to intervene in negative gender dynamics, as the STRIDE committee members did (Sturm 2007). Whether or not a woman feels comfortable and secure in openly changing her practices or intervening in negative gender dynamics within her own department will depend on the departmental climate.

As I have argued, presenting social science research on gender bias and the gendered nature of institutional arrangements, beliefs and expectations could contribute to "consciousness raising" and potential intervention in negative gender dynamics among

women scientists. Another important step to take in empowering women scientists to challenge and potentially change harmful gendered structures and dynamics would involve providing opportunities for women scientists to meet and share concerns and interests with one another. If women scientists can interact with other women scientists, then collaboration around common concerns could occur (Sturm 2007). In other words, once women scientists are armed and empowered with information and awareness, they should have opportunities to interact with other women scientists so as to share experiences, concerns, interests and ideas. These opportunities for interaction may then foster organized collective action or encourage women to work to change the climate of their own departments. As the occupations and organizations in which women scientists work are male-dominated and have a masculinized structure, constant vigilance, empowerment and support from other women scientists will be necessary to sustain pressure for change.

Translating these ideas into action within a University setting without the aid of an ADVANCE grant could prove challenging. Implementation of such ideas would rely on University administrators and an institutional commitment to addressing gendered occupational and organizational barriers to women's advancement in STEM fields. The Office of the Provost at most Universities is often charged with monitoring diversity on campus, including the recruitment and promotion of faculty. The Office of the Provost could take the initial step in assembling and serving as a sponsor for a committee of professors who would be responsible for educating faculty and administrators in STEM disciplines. Given the skepticism of most STEM faculty towards social scientific research, I agree that this committee would need to be comprised of both female and male tenured STEM faculty members, one from each College in which STEM departments are housed, who have

indicated a commitment to eradicating gendered barriers. Without an ADVANCE grant, or other similar source of funding, these faculty members will likely not receive relief from teaching or other such accommodations, thus their commitment to the project is crucial.

Social scientists could serve as consultants, providing reading lists for this committee to facilitate acquisition of knowledge of social science literature on gender bias and gender barriers and expectations within organizations. The social scientists could also be available to meet with the entire committee to respond to questions and facilitate discussion over the issues included in the reading lists. The ultimate responsibility for assembling a presentation of the material will fall on the committee members. Each committee member will present the information to other STEM faculty who are also members of the College to which the committee member belongs. In other words, separate workshops will be held for each College.

Following the assembly of the committee responsible for educating STEM faculty and administrators, the Office of the Provost or the Colleges that house STEM departments could organize the workshops at which this information would be presented. Having an administrative office sponsor and facilitate the organizing could impress upon other STEM faculty members and administrators the importance of such a workshop. Following separate workshops sponsored by the Colleges, the Office of the Provost could then organize opportunities for both female and male scientists from all Colleges to interact. I assume that those wishing to participate in these interactional opportunities will be those genuinely interested in the issues. Providing these opportunities, within a context that clearly emphasizes the importance of eradicating gender bias, will be important in encouraging women (and men) to share experiences, concerns and interests. These events could take the

form of a workshop facilitated by a social scientist or involve a presentation on gender bias or gendered organizations (also administered by a social scientist), followed by group discussions. The primary purpose should be to expose scientists to further information on the bias, expectations and beliefs that ultimately inhibit advancement among women in STEM fields and allow them to interact with one another. Ideally, interactions will inspire a dedication among individuals to take "baby steps" towards improving departmental and university climates for women.

While I have provided suggestions for inspiring a collective consciousness among women scientists, ultimately women scientists have to want to be involved and want to expend the energy and time and potentially risk their professional reputation to begin making "local" changes within their own departments. The results of this study reveal that women scientists are constrained in the types of practices in which they can engage in the workplace. I acknowledge that many of my suggestions rely on women, in some ways, deviating from professional expectations. Ultimately, everyone, both female and male, within academic departments must be involved in attempting to render changes in the types of expectations to which workers are held and the climate to which women are often exposed. When all faculty members are involved in working to change the climate for women, greater legitimacy and sustainability will be granted to the overall cause.

Notes

[1] The specific disciplines traditionally included in STEM are: Agricultural sciences, Biological sciences, Computer sciences, Earth, Atmospheric and Ocean Sciences, Mathematics and Statistics, Physical Sciences, Psychology, Social Sciences and Engineering.

[2] This is my interpretation. Ely does not discuss defensive othering.

[3]Women in male-dominated occupations have criticized the requirement for masculine traits (Kvande 1999: 315) but still indicate that it is a necessary strategy.

[4] My intent was not to demonstrate the range of practices that are available. I do not include differentiation and distancing as two practices in a long list.

[5] ADVANCE is an NSF funded 5-year grant that aims to enhance the recruitment, retention and promotion of women in faculty in the sciences at Universities.

APPENDIX A: INTERVIEW SCHEDULE

Field:
Title/Rank:
Years in Rank:

I. Entrance into job

1. When did you first become interested in being a (profession)?

2. Did anyone ever offer explicit words of encouragement when going into a STEM field?

3. Did it ever concern you when you were making the decision to enter the field that it is a male dominated profession?

4. Do you think your occupation differentiates you from women in other occupations?
    a. If yes: Do you think you had different characteristics to begin with (that may have prompted entrance into field)?

5. Do you think that women in STEM fields have different characteristics, personalities, skill sets or thought patterns than women in non-STEM fields? If so, what are the differences?

6. Do you think that some STEM fields are more challenging or rigorous than others? If so, why?

II. Enjoyment of work

1. What aspects of your occupation do you find to be most enjoyable?

2. Do your colleagues contribute to your enjoyment of your job?

III. Success in occupation

1. What does it take to be successful in your field?
    a. In your specific workplace/department (personality traits, attitudes and behavior, etc.)?

2. What kind of personality traits or intellectual traits are necessary to succeed in your field?

3. Have you ever experienced any personal or professional conflicts participating in a male dominated profession?
    a. What was your response to the situation?

   a. If other female colleagues have experienced conflicts, what was their response?

4. Have you ever felt you've had to compromise your values or the way you present yourself to fit in or prove yourself in your field?
   a. Is the experience in your field different for women?

   b. Is the experience in your field different for Whites (or other race)?

5. What impression do you try to convey about yourself? (in departmental meetings, labs, conferences, in the field, classroom, etc.)
   a. Have you ever received any suggestions or advice as to how to present yourself in your field?

   b. Do most women try to convey something similar?

   c. Is this any different for men and women?

6. Do you ever feel you've been judged according to stereotypes?

   a. If yes: Does it have something to do with being a woman in your field?

7. What is it like to be a woman in the field? What is it like working mostly with men?

8. When people talk about "barriers to women in STEM fields," what do you interpret "barriers" to mean?

9. Do you perceive any barriers to women in your occupation?
   a. If so, what are the barriers to women in your occupation?

<u>IV. Workplace relations</u>

1. How do you organize your work? (approach to getting everything done; research, teaching, travel, etc.)
   a. Is any aspect different or similar to other members in the department?

2. Do you see any differences between the work styles of different women at your same rank?
   a. At different ranks?

   b. With other women on campus?

3. How well do you get along with other women at your same rank?
   a. At different ranks?

   b. With other women on campus or in general?

4. Do women bring something different to the (professional) field?

5. Is there something unique about the women hired?

   a. What are the characteristics of the women hired in your department?

      i. Are men expected to have these characteristics?

      ii. Are the characteristics of men the standard for the department?

6. How accepted do you feel among the faculty in your (department)?

   a. How accepted do you feel among the men in your department?

   b. Do you feel as accepted as other women in your department?

7. How accepted do you feel among other women in your field (department)?

   a. Do you feel as accepted as other women in your department?

8. Do other women make an effort to establish relationships specifically with women? With men?
   a. How are these relationships established (strategies)?

9. How cohesive is your department?

10. How well integrated do you feel in your department? How well do you feel you fit in?
    a. With men?

    b. With other women?

11. Do you develop collaborating relationships with other members of your department?

12. What types of non-work related interactions do you have with colleagues (at work or outside of work)? (lunches, recreational activities, etc.)

13. How would you describe the relations between men and women in your department?

14. How would you describe the relations between women in your department?
    a. Do the relations between women in your department differ from how men interact with each other?
    b. Do they differ from the way women and men interact with each other?

15. What are the friendship networks like? (How do the friendship groups form? By research area, gender, rank, race, etc.)

16. What are your sources of social or moral support within the department? How is this demonstrated?

17. Do you have a mentor in the department?

    a. Outside the department?

18. What kinds of characteristics do you value in a mentor? Describe ideal mentor.

19. To what extent do you feel mentored by other women in senior positions?

V. Family

1. Do you find family/parenting to be a topic of conversation among yourself and your colleagues?

2. How much do family related issues enter into conversations with colleagues?

    a. Do parents within the department receive the same response from colleagues?

3. How is family involvement received within your department?

4. What kinds of tasks do you perform for your family?
    a. How do you and your partner negotiate the distribution of tasks?
    b. Do you feel the work is evenly distributed between you and your partner?

5. Who takes the responsibility for planning or initiating tasks?

6. Do you find other women with a similar family situation take a similar approach to their family?

7. Are there any aspects of your home/family life that benefit you in your professional work? Cause problems at work?

8. Are there any aspects of your work life that benefit you in your home/family life? Cause problems at home?

9. Do you find any challenges in balancing work and family?

    a. How do you deal with these challenges at work? (strategies, routines, etc.)
    b. How do you deal with these challenges at home?

10. How do colleagues deal with similar challenges?

11. Do you take the same approach in dealing with your family as you do in dealing with your work? (strategies used to balance)

12. Did you make any adjustments in your employment following the birth of children? Your partner?
    a. How was this decided?

    b. How was this negotiated with the department?

    c. What was the response of your colleagues?

13. How do your family responsibilities compare to those of colleagues? (rank of colleagues).

Is there anything else that hasn't been discussed you'd like to add?

Demographics:

Age:

Race/ethnicity:
_____ 1. African-American
_____ 2. Asian
_____ 3. Caucasian, not Hispanic
_____ 4. Hispanic
_____ 5. Native American
_____ 6. Pacific Islander
_____ 7. Other _____

How would you categorize the social class in your family of origin?

In what kind of a setting were you living during your adolescent years?
1. Open country, not farm.
2. On farm.
3. In a small city/town (under 50K) not near large city.
4. In a medium size city/town (50K-250K) not near large city.
5. In a suburb near a large city.
6. In a large city (over 250K).
7. Don't know.

APPENDIX B: DEMOGRAPHIC PROFILES

Demographic Profiles						
	Rank	**College**	**Marital Status**	**Children (biological and/or step)**	**Children at home**	**% tenure-track women in dept.**
Chandra	Tenured	Engineering	Married	0	0	18.8%
Brittany	Untenured	Engineering	Married	0	0	7.4%
Cathleen	Tenured	Engineering	Married	2	1-2	6.8%
Nadine	Untenured	Engineering	Married	0	0	6.8%
Betsy	Tenured	Engineering	Married	1-2	1-2	6.8%
Marion	Untenured	LAS	Married	2-3	0	18.2%
Carrie	Untenured	Engineering	Married	1	1	18.8%
Robin	Tenured	Vet Med	Single	0	0	27.8%
Helena	Tenured	Vet Med	Married	3	3	14.8%
Kristen	Untenured	Vet Med	Married	2	2	38.5%
Becky	Tenured	LAS	Married	2	2	18.2%
Lorraine	Tenured	LAS	Married	0	0	18.2%
Justine	Untenured	Vet Med	Married	2	2	38.5%
Jill	Untenured	Vet Med	Married	3	3	38.5%
Shari	Tenured	Engineering	Married	2	2	18.8%
Faye	Tenured	Vet Med	Married	1	1	27.8%
Gertrude	Tenured	LAS	Married	2-3	0	18.2%
Julia	Tenured	Vet Med	Married	1	1	30%
Amber	Untenured	Vet Med	Married	0	0	30%
Bernice	Tenured	Vet Med	Married	1-2	0	27.8%
Beth	Untenured	Vet Med	Married	0	0	38.5%
Shirley	Tenured	LAS	Married	4	3	22.2%
Leona	Tenured	LAS	Married	1	0	14%
Sarah	Tenured	Vet Med	Married	6	?	16.7%
Sue	Tenured	LAS	Married	0	0	30%
Deborah	Tenured	Vet Med	Married	1	1	38.5%
Raquel	Tenured	LAS	Married	0	0	30%
Pam	Untenured	LAS	Single	0	0	22.2%
Janet	Tenured	LAS	Married	2	2	15.4%
Barbara	Tenured	Vet Med	Divorced	2	2	38.5%

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