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Women chief information officers in higher education: Voices from the field

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WOMEN CHIEF INFORMATION OFFICERS IN HIGHER

EDUCATION: VOICES FROM THE FIELD

A Dissertation

Submitted

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

Approved:

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Dr. Susan Etscheidt, Co-Chair

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ABSTRACT

The lived experiences of women higher education Chief Information Officers (CIOs) were investigated and documented in this qualitative study. Three women higher education CIOs provided their perspectives on the opportunities and obstacles encountered as they pursued and achieved their current positions. These women's stories were gathered under a conceptual framework focusing on the intersection of applicable elements from gendered organizational theory, feminist standpoint theory, and occupational jurisdiction. Methods of overcoming obstacles and facilitating opportunities were discussed in relation to their lived lives and experiences. Examining institutional gendered norms accentuated the thoughts, values, practices, and processes that lead to muted women's voices and the continuation of male-dominated organizations and social structures.

The co-narrators described themselves as pioneers in the field and agreed that professional advancement opportunities resulted from having excellent personal strengths, mentors, family support, and a good educational and experiential background. Major obstacles included stereotypic responses and beliefs from co-workers or supervisors, a lack of recognition, support, and trust, and marginalization. Methods used to overcome or eliminate obstacles were strength from support groups, perseverance, and connecting with credibility to others. Elements related to genderedness and occupational jurisdiction were discussed in attempts to integrate women into typically-male and typically-less-technical positions. The perpetuation of gendered organizations was also discussed.

The findings should be of interest to information technology divisions within higher education institutions as they consider designing and implementing programs to assist women aspiring to leadership roles. An awareness of the opportunities and obstacles of prospective employees may inform recruitment and retention efforts for the institution. The findings may also help institutional officials to recognize factors characterizing women higher education information technology leaders and to consider recommendations for enhancing the work environment for these women leaders. Women seeking such positions will benefit by having an understanding of the experiences of current women CIOs.

To Dwight, my loving and supportive husband:
> I could not have completed this chapter in my life without you.
> Our front porch and back porch conversations helped so much and kept me inspired.
> Forever, Thank You!

To Alyssa and Emily, my daughters:
> Never give up—persevere and endure as you grow as professional women.
> Be strong yet kind in your leadership roles.

To Alan, my son:
> Your spirit and energy inspired me throughout this process.
> Appreciate it and use it as you go after your Ph.D.

To Dr. Susan Etscheidt:
> Your incredible guidance and assistance were deeply appreciated.
> Thank you so much for the encouragement and direction.

To My Committee Members:
> Thank you for your time and efforts that provided me with excellent oversight, perspective, and assistance.

To Friends, Relatives, and Colleagues:
> Your words of encouragement and support during this journey were greatly appreciated.

And finally, To the Co-Narrators:
> Thank you for letting me enter your lives. Your willingness to share your lived experiences with others exemplifies how remarkable you are!

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CHAPTER 1

INTRODUCTION

Today's universities and colleges rely immensely upon their information

technology divisions for expertise and guidance related to the implementation and use of

administrative and academic applications. These applications require a rich and robust

infrastructure that reaches out to the world as well as beckons the world into the

information canyons and allowable transactions of campuses. The chief information

officer (CIO) or executive information technology leader has responsibilities for

supplying the campus with reliable, productive, ubiquitous service and application use.

On most campuses, the oversight of information technology functions and

services is the responsibility of the CIO. This position is often given other titles. For

purposes of this study, the term CIO is utilized to indicate the person having oversight for

the strategic information technology functions and services vital for the campus. The

chief information officer (CIO) is defined as the primary information technology

executive of an organization, being responsible for decision-making, policy,

management, and standards related to information technology use for the organization

(Katz et al., 2004; Penrod, Dolence, & Douglas, 1990).

The CIO deals primarily with information and communication technologies.

These technologies are often simply called information technology. Information

technology is considered "any equipment or interconnected system or subsystem of

equipment, that is used in the automatic acquisition, storage, manipulation, management,

movement, control, display, switching, interchange, transmission, or reception of data or

information" (Architectural and Transportation Barriers Compliance Board, 2000, pp. 80504-80505). This includes computers, software, auxiliary equipment, firmware, support services, and other related services and resources.

Research exists regarding leadership roles, leadership styles, the effect of gender on leadership positions, and the opportunities and obstacles women, men, and minorities face in achieving leadership positions in various organizational structures. Most of this research is based on individuals within organizational structures in the corporate world. Some studies focus on an analysis of experiences, influences, and opportunities that inform decisions by individuals to pursue leadership positions. Other studies include the identification of obstacles faced by individuals in achieving leadership positions. An obstacle is a form of barrier, perceived or existent, that hinders, obstructs, or prevents an individual or group in some manner, generally from setting or reaching goals (Morrison, White, Van Velsor, & The Center for Creative Leadership, 1987; Shakeshaft, 1987). However, little research exists regarding the dynamics of information technology leadership in higher education in the United States, and even less on women in information technology higher education leadership roles.

With the ubiquitous spread of information technology on campuses in the last twenty-five years, the role of the CIO has changed dramatically. In the past, CIOs have focused on basic infrastructure within the campus boundaries, mainframe applications and administrative uses, and support of a limited number of controlled, definable needs. However, as personal computer use began on campuses and the information era exploded, many campuses found computing and telecommunications merging as

individuals began to demand anytime, anywhere computing power using their personal computers. The role of the CIO evolved to addressing information policies, standards, and managing not only administrative and infrastructure areas but also network services, desktop and user services, and academic applications (Ryland, 1989). Quickly, "the importance of the link between information technology planning and institutional goals became evident" (Penrod et al., 1990, p. 8) as CIOs began to focus on strategic planning, policy and steering committees, and having a seat at the President's table as strategic decisions were made. The CIO was recognized as one of the leaders in the institution. A leader is a person who selects, prepares, educates and/or influences some number of people having diverse abilities and skills; focusing and coordinating those people's efforts toward achieving the organization's mission and goals (Winston, 2003). A better title for the CIO today might be Chief Information Leader (Savarese, 2006).

Due to the recent growth and expansion of this leadership role on campuses, studying the elements characterizing successful CIOs and conducive organizational environments offers those individuals striving for such a position and those organizations seeking potential candidates for such a position an understanding of the traits and career paths of successful CIOs and the nature of the environment that allows for a successful CIO. While studies exist, most focus on CIOs in the business world, some on CIOs in health care, and few on CIOs in American higher education. Investigation of the elements characterizing successful women CIOs in higher education provides insight into not only elements related to traits, career paths, and the environmental nature of institutions they are associated with, but also the opportunities and obstacles encountered

and the hegemonic nature of higher education information technology organizations.
Traditionally, CIOs have been white males. Woodsworth (1987) examined the role of
individuals in positions having the exact title of Chief Information Officer in major
research universities, as defined by their membership in the Association of Research
Libraries. Of the 29 CIO positions in her study, four or 13.8% were occupied by women.
Of those responding to Penrod et al.'s (1990) study of CIOs in higher education, 6.9%
were female. Pitkin's (1993) study affirmed the overwhelming majority of Caucasian
males between 45 to 49 years of age in higher education CIO positions. Similarly,
Latimer (1999) reported only 16.2% of the CIOs surveyed in higher education were
female, while Katz et al. (2004) found 21.4% of the CIOs in higher education were
female. Katz et al.'s study also revealed that of those respondents not holding the senior
information technology positions, women accounted for 40.8%. Of those aspiring to the
CIO position in higher education information technology divisions, Katz et al. found
16.4 % were women as compared to 28.2% men.

During the last several decades, the student body at American universities has
changed considerably. Female student numbers have increased to the point of surpassing
male student numbers and projections are that this trend will continue in enrollment as
well as degrees conferred (The Chronicle of Higher Education, 2006; Jacobs, 1996;
Jones, 1986). Women (U.S. citizens and non-U.S. citizens attending American
universities) currently earn the majority of bachelor's and master's degrees and
projections indicate that by 2013 they will also earn the majority of doctorate degrees
(U.S. National Center for Education Statistics, 2005). For the last five years, of U.S.

citizens earning doctorates at American institutions women earned 51% of the doctorates (June, 2007).

However, colleges and universities in the United States continue to be dominated by male leadership, creating concerns regarding the exclusion of women in leadership roles. The presence of women in higher education positions tends to decline with the prestige of the institution and, in faculty ranks, declines as the rank is higher (Jacobs, 1996). Jacobs (1996) posits "women have been disadvantaged to some extent in every stage of the academic career process" (p. 172).

Some suggest that by closing or reducing the leadership gap through the inclusion of more women, institutional leadership would shift from being focused on tasks and outcomes, a product orientation often attributed to male leadership styles, to becoming more focused on processes and people, attributes of female leadership styles (Chliwniak, 1997). With the Spellings' (Commission on the Future of Higher Education, 2006) report focused on tasks, outcomes, and accountability for higher education, the complexity increases in addressing the gender gap in higher education leadership as this report focuses on results typically obtained through masculine leadership styles.

Male hegemony creates a male lens by which society operates. "Also problematic is that leadership traditionally has been studied using male norms in hierarchical structures as the standard for behaviors and characteristics against which women were assessed" (Chliwniak, 1997, p. 5). For women to gain access to paths for success in male dominated hierarchies, they have had to adopt these male standards of behavior (Acker, 1991; Chliwniak, 1997; Johnson, C., 1993).

In the information technology field, a background in computer science has traditionally precipitated employment in many of the professional and technical positions. In the United States, the world of computing generally began with the Electronic Numerical Integrator and Computer (ENIAC) being first developed during World War II. The first programmers of the ENIAC were women and were referred to as the "ENIAC girls" (Wright, 1997, p. 77). In the post-war years, males began to dominate the field of computing as it became viewed as requiring more technical skills instead of mechanical skills (Kraft, 1979). Computers were initially purposed for government and military functions. As their use grew within the corporate world during the 1960s and 1970s, large mainframes and various mini-computers were still under the purveyance, jurisdiction, and oversight of males. Personal computers, that could easily fit on one's desktop and contained as much computing power as many early mainframes, were introduced in the 1980s.

As the personal computer continued to grow in power and become lower priced, more and more businesses, educational institutions, and homes acquired them. Supporting not just the physical hardware but also the software and individuals' uses required a population of professionals in a variety of computer specialties. While more women have entered the field, recent numbers are showing a decline in those pursuing an education and working in the computer and information science field. In an analysis of U.S. Department of Education and Labor data, Wright (1997) found the number of women college graduates in computer and information science rising "from 14% in 1971 to 37% in 1984 … [and then falling] to 28% in 1994" (p. 76). Similarly, employment in

computer-related work reveals "[i]n 1971 women were 15% of all such workers, which rose to a high of 36% in 1990 but fell back to 31% in 1995" (p. 76).

Women continue to perceive the information technology culture as alien due to its masculine nature (Kiesler, Sproull, & Eccles, 1985; Turkle, 1988; Wright, 1996) that can be traced back to computer technologies being historically a child of electrical engineering (Fox, 2006; Trice, 1993) which has traditionally been defined and continues to be defined as masculine, technical work (Bailyn, 1987; Smith, 2000; Wright, 1997). The under-representation of women in this field continues to be an area of study funded by the National Science Foundation. This under-representation traces back not only to the traditional masculine perception of information technology, but also to several other factors including the lack of role models and mentors, socialization of males and females, inappropriate perceptions of jobs within computing (Aspray & Freeman, 2002; Smith, 2000), gendered organizational theory (Acker, 1993; Fagenson, 1993; Maier, 1999), and occupational jurisdiction (Abbott, 1988; Bechky, 2003). Those women who do enter the information technology field or become involved in higher education, and seek leadership roles in higher education information technology positions, face a double challenge in that they must overcome the obstacles related to traditional male-dominated higher education leadership as well as those related to the traditional male-dominated information technology field.

Conceptual Framework

A number of theoretical or conceptual perspectives related to leadership, gender, and sex-roles in American society served as guides for this study. These and other

theoretical perspectives are discussed more extensively in Chapter 2. Theoretical pluralism often exists in the many ways researchers choose to approach their research participants and data. Being careful not to allow theoretical pluralism to serve for a lack of focus, the study adopted and encouraged a framework of theoretical diversity. Such diversity, avoiding the tendencies to posit unitary explanations, allows one to best acknowledge the variety of experiences and the many ways of understanding experiences of men and women (Tuana, 1993). Theoretical diversity lends itself to the task of verification through triangulation (Denzin & Lincoln, 2003) and extends to crystallization—multiple refracted realities leading to a deeper understanding of the phenomena under study (Richardson, 2003). While avoiding distracting and unfruitful information, explanations, and theoretical orientations, this study utilized the lens of selected, pertinent multiple perspectives, looking for intersections of ideas, thoughts, and findings. Taking a cautious approach to divergence, an understanding of leadership within the realm of higher education information technology and its intersections with the "multiplicity of truths about genders" (Tuana, 1993, p. 282) was developed.

Gender is the socially constructed schema for categorizing individuals based on biological differences and stresses normative definitions of masculinity and femininity (Powell, 1993; Scott, 1986). One's gender identity is "constructed out of a complex mix of experiences in the physical world, social relationships and activities in which men and women are engaged, and cultural stereotypes that are socially imposed and personally internalized" (Fine & Buzzanell, 2000, p. 130).

Stemming from centuries of theoretical and philosophical writings, social, historical, and cultural contexts offer clarification of leadership and role phenomena based on symbolic interactionism, ethnomethodology, and feminist epistemologies. Within these contexts, organizational theory and feminist standpoint theory served as complementary conceptual frameworks for this study as the researcher focused on the intersection of applicable elements of each.

Societal roles of males and females are primarily defined based on meanings arising from interaction with others in conjunction with the dynamics related to the structural and functional elements of organizations. Feminist standpoint theory intersects with structures and functions of organizations by creating awareness of those in marginalized, under-advantaged positions in organizations. Members of marginalized groups should be respected as authors of knowledge from their particular standpoint, experiences, and social locations (Arnot, 2006). Many feminist theorists believe this voice leads to enlightenment from the perspective of those less powerful, whether male or female. The nature of executive level higher education information technology leadership through the lens of the perspective of lived experiences of women CIOs, and the intersections of gender roles and socialization, within the structures and functions of information technology in higher education institutions served as the operational framework for this study. These intersections and interconnections contribute to an understanding of the identities of information technology leaders in higher education, an organization that fits within Acker's (1993) definition of a gendered organization: an organization in which "advantage and disadvantage, exploitation and control, action and

emotion, meaning and identity, are patterned through and in terms of a distinction

between male and female, masculine and feminine" (p. 85).

Theoretical or philosophical frameworks provide a particular lens through which

the researcher attempts to understand the experiences of his or her participants. Certain

lenses are more applicable to one's research than others. In this study, utilizing a pure

psychological or biological perspective to better understand the intersections and

resulting characterizations of women CIOs would prove less fruitful or be less applicable

because such orientations lack and are unable to attend to the social, historical, or cultural

contexts in which women's lives are situated. De Beauvoir (1952) applies the theory of

social construction of gender to women when she discusses "becoming" a woman rather

than being born as a woman. Civilization produces a woman, not biological,

psychological, or any other determinant destinies. Psychological or biological lenses are

often based on innate and inborn differences in males and females. Current research

lacks substantiation and conclusiveness of innate differences affecting leadership, either

psychologically or biologically, between the male and female species (Appelbaum, Audet

& Miller, 2003; Powell, 1993).

A general Marxist perspective, centering on conflict theory and the theory of

capitalism, provides a broad conceptual perspective. While feminist standpoint theory

emerged as an epistemological theory within the Marxist philosophy, elements of

Marxism are included only to the point of relevance as related to the dominance of one

species over another and how historical dialectics have wrought many current

androcentric epistemologies and methodologies.

World system and macrostructural perspectives may contribute to an understanding of nations' control globally. Macrolevel processes certainly affect microlevel processes and practices. However, this global lens was not used as this perspective's units of analysis are much broader than this study addressed (England, 1993; Turner, 1974).

Multiple feminist approaches benefit research as these perspectives provide a comprehensive view related to the reasons and manners in which women's contributions to organizational life are often devalued by both men and women (Buzzanell, 1994). This ever-present devaluation lends to the creation of obstacles for women in achieving leadership positions. Together feminist standpoint and gendered organizations form a theoretical framework in which women can give voice to their reality and provide an understanding of their environment. Women CIOs in higher education can provide valuable contributions to the body of knowledge with their perspectives and lived experiences concerning their encounters with masculine-embedded structures and processes of organizations that define the norms for both men and women as well as with occupational jurisdiction and the role of occupational artifacts in legitimizing authority, task boundaries, and the authenticity of one's work (Bechky, 2003). "The association between technology, masculinity, and the very notion of what constitutes skilled work was and is still fundamental to the way in which the gender division of labor is reproduced" (Wajcman, 2006, p. 85). Western culture perpetuates the association of maleness with power and technical abilities.

Feminist standpoint theory contains two contributions central to the framework for this study. First, women's standpoints are beginning points for discussions, thoughts, and research, not alternative views (Buzzanell, 1994). Women's standpoints have legitimacy. They stem from the lived experiences and situations daily encountered by women. Second, feminist standpoint permits a diversity of voice (Harding, 1997; Harding & Hintikka, 1983). Each voice and lived life is important and unique. Listening to women tell their stories leads to stopping the silencing and marginalizing of women that promotes the monolithic male hegemonic traditions and will hopefully aid in allowing the construction of non-gendered organizations, perhaps contributing to a non-debilitating or less debilitating social structure and society.

Women CIOs, the co-narrators in this study, have provided an account of the obstacles and opportunities they have experienced or observed in the gendered organizations of information technology and higher education. Listening to the narratives of women situated in CIO positions and giving them a voice may aid other women and men in information technology and aid the organizations of information technology and higher education in understanding their environments and taken-for-granted practices and processes to which a gender perspective brings clarity.

Women's existence has occurred within primarily a male-gendered and power constructed social, political, and cultural world. Including gendered organizational concepts with standpoint theory allows for the intersection of perspectives to reveal and understand how male dominance has affected the ways in which men and women have experienced organizations (Ferguson, 1984). Employing perspectives related to

organizational practices, processes, and their influences on women's standpoints,

provided the needed intertwining of gender, power, and women's voices and lived lives

to offer a complete conceptual framework.

<div align="center">Statement of the Problem</div>

At the time this study was conducted, women held approximately 20-25% (Katz

et al., 2004) of the CIO positions in higher education in the United States. Due to a lack

of research, little is known about these women holding positions traditionally dominated

by men and the avenues they have traversed. With a relatively small percentage of

women present in higher education information technology divisions, the question arises

as to the presence of the glass ceiling phenomena. Women make many contributions to

the workplace, but often those contributions are devalued leading to the creation of

obstacles for women in achieving leadership positions. The genderedness of higher

education information technology promotes an environment that often silences and

marginalizes women, promoting male hegemonic traditions and processes. "The silence

of women is especially true in education where women have dominated by sheer numbers

since the late nineteenth century, but never dominated in recognized positions of

organizational authority" (Dunlap & Schmuck, 1995, p. 2). This study sought to give

higher education information technology women CIOs a voice as it endeavored to

determine the patterns and themes of those elements characterizing women who have

achieved CIO positions in higher education institutions and to ascertain the obstacles to

aspiring to and acquiring the CIO position as well as identifying opportunities that

presented themselves.

Primary Research Question

The primary research question for this study was: What are the obstacles and opportunities encountered by women higher education information technology executive leaders (CIOs), from their perspectives, in the pursuit and achievement of their CIO positions?

Subsequent Research Questions

Several subsequent research questions resulted in addressing the primary research question. These were:

1. What are the lived experiences of women higher education information technology leaders?

2. Based on the perceptions of the co-narrators, does being a woman influence or affect women's careers as higher education information technology leaders?

3. Were there elements (social, political, economic, educational, or other) that the co-narrators experienced that provided opportunities enabling them to obtain the position of information technology executive leaders in higher education?

4. Were there obstacles and barriers experienced by the co-narrators during their career paths of becoming information technology executive leaders in higher education?

5. If obstacles were encountered, were there methods utilized by the co-narrators to overcome or eliminate obstacles and barriers encountered during the process of becoming an information technology executive leader in higher education?

6. Were there experiences the co-narrators had in which the organization of higher education or information technology hindered or facilitated their career path of becoming a CIO?

7. According to the experiences of the co-narrators, is a gendered framework of femininity or masculinity perpetuated in higher education organizations or higher education information technology organizations?

8. Were there observations made or experiences the co-narrators had reflecting the construction of divisions by gender in the higher education organization or information technology organizations?

9. Were there experiences the co-narrators had in which they were marginalized or perceived a patriarchal designation of power and authority?

10. Were there observations made or experiences the co-narrators had in which authority was legitimized, task boundaries determined, or authenticity of work confirmed due to access to certain artifacts or due to the sex of the person in a particular role?

<u>Significance of the Study</u>

Based on interviews with women CIOs leading higher education information technology divisions, this study contributes to a better understanding of those elements or factors characterizing women information technology leaders in higher education. Opportunities and obstacles experienced by such leaders were explored. It is hoped by developing a better understanding of women information technology leaders' paths and experiences, women will be assisted in seeking such positions. It is also hoped that

higher education institutions will be assisted in their abilities to retain and benefit from the vast talents and abilities of its current female leaders preparing for and striving to succeed in such positions.

This study adds to the body of knowledge as it aids understanding and awareness of the opportunities and obstacles women experience in acquiring CIO leadership roles. It also may aid mentors and women in preparing strategies to overcome or deal with such obstacles, as well as assist other information technology and university leaders in better understanding obstacles women face in seeking CIO positions. With a cycle of retirements beginning to occur for current higher education information technology leaders, in 2003 57.9% of the CIO respondents were over 50 years of age (Katz et al., 2004), individuals and institutions recruiting CIOs may benefit from an understanding of male hegemony and the obstacles women face. Institutions of higher education and information technology organizations must also come to realize they have comfortably reproduced themselves for several centuries establishing a "male-dominated, patriarchal culture" (Chliwniak, 1997, p. 13). Challenging existing institutional norms will allow the incorporation of new thoughts, values, and practices leading to the design and implementation of programs assisting women in overcoming obstacles and facilitating opportunities for women aspiring to leadership roles in general and specifically those seeking CIO leadership positions in higher education. Listening to the co-narrators will hopefully aid in allowing the construction of non-gendered organizations, perhaps contributing to a non-debilitating or less debilitating social structure and society.

Purpose of Study

The purpose of conducting this qualitative study was to identify and describe the lived experiences of women higher education Chief Information Officers (CIOs) in order to investigate and document from their perspectives the opportunities and obstacles encountered as they pursued and achieved their current positions. These women's standpoints were gathered under the conceptual framework of gendered organizations and occupational jurisdiction. Methods of overcoming obstacles and facilitating opportunities were discussed in relation to their lived lives and experiences. Examining institutional gendered norms accentuated the thoughts, values, practices, and processes that lead to muted women's voices and the continuation of male-dominated organizations and social structures.

Credibility and Trustworthiness

The researcher made several assumptions in conducting this study. First, the co-narrators were truthful in their responses and statements during the interviews. Second, the co-narrators were competent and provided a coherent understanding and interpretation of their experiences. Third, the co-narrators have been part of a Western European social structure in a culture imbued with modernism and post-modernism. Fourth, organizations in which the co-narrators have lived their experiences were imbued with policies, processes, norms, values, and procedures that structure them along gender lines. Fifth, people actively define situations, use symbols, construct and interpret situations they are in, and relate those to others in the same or similar situations. Sixth, there are no non-gendered organizations. And, the final assumption was that

organizations such as higher education and information technology need not necessarily be gendered, but historically have been.

Several delimitations applied for the purpose of this study. First, only women executive leaders, CIOs or otherwise titled, in higher education were co-narrators. Second, the co-narrators were located in Master's Medium and Master's Large public institutions as classified by the Carnegie classification. Third, issues related to women minorities were not dealt with separately. And, the final delimitation was that the face-to-face interviews were conducted in the Fall of 2007.

Several limitations apply to this study. Researcher bias is present in any research. This researcher has been involved with information technology in higher education for over twenty years. Many of the issues discussed have been experienced personally as this researcher has held information technology leadership roles in higher education, excluding that of the CIO. This researcher has also been a part of organizational systems that display "the same binary thinking that feminists hope to weaken" (Buzzanell, 1994, p. 344). As the primary instrument for data collection for this study, this researcher was aware that the data collected may have been influenced by the researcher's mannerisms, approach to topics and questions, responses or conversation given to the co-narrators, and general interactions with the co-narrators.

Realizing that neither feminist nor traditional theorizing is unbiased, unconscious acceptance or promotion of such biases were guarded against by this researcher through conscious awareness of personal values and experiences preventing interference by holding past and present experiences in abeyance. In addition, biases were controlled

through the use of an extensive literature review, co-narrators' verifications of statements and interpretations, and a stance of neutrality in interpretations and language.

The sample for this study was purposive and thus not all-inclusive. Three co-narrators were interviewed three times for this study. Co-narrators' responses can often be restricted by the qualitative method of research. Some individuals are more comfortable revealing personal experiences and perceptions in a less personal and more anonymous data gathering process. Differences in the definitions and perceptions of opportunities and obstacles may have been present in the co-narrators.

Results of this study were based on the co-narrators' perceptions. As a qualitative study with a small purposive sample, the findings from this study are not generalizable to the general population.

<u>Summary</u>

The co-narrators' existence has occurred within a social, political, and cultural world constructed primarily through male norms and power. Feminist standpoint theory and gendered organizational concepts allowed for revealing intersections of perspectives from the co-narrators. In addition, the intertwining of gender, power, and the co-narrators' voices and lived lives aided in offering a complete conceptual and operational understanding of the situated nature of women higher education information technology CIOs. Through their voices, their experiences related to devaluation of their work life contributions and the genderedness and male hegemonic traditions of higher education information technology organizations were heard. This study gives higher education information technology women CIOs a voice as it presents the patterns and themes of

those elements characterizing women who have achieved CIO positions in higher education institutions and discusses the obstacles to aspiring to and acquiring the CIO position as well as the opportunities that presented themselves.

As Gilligan (1982) has noted, one cannot extract a life out of its historical context. The co-narrators' lives and voices lend themselves to the task of change as one listens to their narratives and experiences through their voices rather than through men's voices, as has often been the case in the past. The reader must be careful upon listening to these women's narratives not to assimilate differences heard into hegemonic, traditional categories and ways of thinking; thus, losing the uniqueness of the message. To provide a basis of understanding, others' research and work contributed to this field. Reviewing the appropriate literature and recognizing others' findings adds to a knowledge base necessary for clear reasoning and analysis.

CHAPTER 2

LITERATURE REVIEW

In order to fully understand the patterns and themes of those elements

characterizing women who have achieved CIO positions in higher education institutions

as well as the hegemonic nature of higher education information technology

organizations, several bodies of related literature and research were reviewed. These

included: (a) feminist theory, feminist standpoint theory, organizational theory, and

gendered organizational theory; (b) sex-role and gender patterns in leadership positions;

(c) leadership styles of men and women; (d) obstacles women encounter in achieving

leadership roles; and (e) experiences providing opportunities for women to achieve

educational leadership roles.

<u>Feminist Standpoint Theory and Gendered Organizations</u>

A variety of theoretical approaches have been or are used to understand

leadership, gender, and sex-roles. Among these, in the Western European perspective,

are such grand, encompassing theories as functionalism (Durkheim, 1938), its derivative

structural functionalism (Hansot & Tyack, 1981; Parsons, 1937, 1951), and Marxian

conflict theory (Turner, 1974). Common middle-range theoretical approaches include

world system and macrostructural perspectives, neofunctionalism (England, 1993), and

feminism (Shelton & Agger, 1993). Realizing the overlap and intertwining of most

schools of thought, two broad perspectives emerge from the middle-range theories. The

first, lacking any social, historical or cultural context, offers clarification of leadership

and role phenomena based on biological and psychoanalytical explanation (Appelbaum et

al., 2003). The second includes social, historical, and cultural contexts and offers clarification of leadership and role phenomena based on symbolic interactionism, ethnomethodology, and feminist epistemologies. Stemming from centuries of theoretical and philosophical writings, the latter branch, focusing within its context on the intersection of applicable elements from gendered organizational theory and the feminist standpoint school of thought, will serve as the overarching theoretical conceptual framework for this study.

Theoretical or philosophical frameworks provide a particular lens through which the researcher attempts to understand the experiences of his or her participants. Certain lenses are more applicable to one's research than others. In this study, utilizing a pure psychological or biological perspective to better understand the intersections and resulting characterizations of women CIOs would prove less fruitful or be less applicable because such orientations lack and are unable to attend to the social, historical, or cultural contexts in which women's lives are situated. De Beauvoir (1952) applied the theory of social construction of gender to women when she discussed "becoming" a woman rather than being born as a woman. Civilization produces a woman, not biological, psychological, or any other determinant destinies. Psychological or biological lenses are often based on innate and inborn differences in males and females. Current research lacks substantiation and conclusiveness of innate differences affecting leadership, either psychologically or biologically, between the male and female species (Appelbaum et al., 2003; Powell, 1993).

A general Marxist perspective, centering on conflict theory and the theory of capitalism, provides a broad conceptual perspective. While feminist standpoint theory emerged as an epistemological theory within the Marxist philosophy, elements of Marxism will be included only to the point of relevance as related to the dominance of one species over another and how historical dialectics have wrought many current androcentric epistemologies and methodologies.

World system and macrostructural perspectives may contribute to an understanding of nations' control globally. Macrolevel processes certainly affect microlevel processes and practices. However, this global lens was not used as this perspective's units of analysis were much broader than this study addressed (England, 1993; Turner, 1974).

<u>Feminist Theory</u>

Feminist theory encompasses a large expanse of the scholarly terrain. No single feminist theory is persuasive, leading one to use a wide range of feminist lenses to reveal a variety of insights (Rosser, 2006). "Diverse theoretical perspectives are joined together under the name 'feminist' because of their shared concern with gender relations and gender arrangements, and because of their concern for social change" (Calas & Smircich, 1993, p. 97). Two distinct themes constitute feminist theorizing. The first is patriarchy or male dominance. The second is the seeking of change from this dominance (Calas & Smircich).

Feminist theorizing, in the early years, distinguished between biologically based "sex" and socially constructed "gender" (Oakley, 1972). Early feminism focused on

"opening up the access of woman as a category (and not a class) to political, economic and social aspects of public and private life from which they had been ... excluded" (Weiner, 2006, p. 81). This led to a number of gains for not only women but other groups as well in such areas as educational access and welfare programs.

Feminism in the early years was often referred to as left feminism. Left feminism is characterized by a political and intellectual "perspective sympathetic to both Marxism and feminism" (Shelton & Agger, 1993, p. 27). Left feminism acknowledges the importance of the relationship between family and work yet rejects "radical feminism for ignoring capitalism [and rejects liberal feminism for] endorsing capitalist gender relations" (p. 28). Left feminists fought for a society based on class, racial, and gender equality.

During the 1960s and 1970s, as the women's liberation movement and civil rights legislation transpired, a second-wave feminism fought for a broader agenda focused on gender relations and how "men" and "women" are created and connected to culture. Both men and women were prisoners of "gender" in differing ways (Flax, 1987; Scott, 1986). Second-wave feminism concentrated on items specifically affecting women, such as violence in the home, paid working conditions, sexuality, and reproduction. During this time, efforts for the unifying effect of "woman" proved troublesome as supporters attempted to maintain women's shared interests while recognizing and fighting for the rights of difference as recognized in racial and ethnic groups (Weiner, 2006).

Known to many as liberal feminism, second-wave feminism endorsed a procapitalist perspective in its primary concern for the middle to upper middle class

woman (Connell, 1987; Hacker, 1989; Shelton & Agger, 1993). Liberal or second-wave feminism utilized national discussions amongst men and women in attempts to reduce male domination, to remove barriers faced by women in workforce entry, and to ensure equal treatment of women in the paid labor force (Friedan, 1963).

The inability to easily collapse into a single category rights and issues related to "woman" led to differing emphases. This uneasiness is often attributed to differences in the orientation of "women's liberation" and the orientation of "feminism". Women's liberation can be interpreted as a norm-oriented movement whereas feminism can be interpreted as a value-oriented movement (Smelser, 1962). This perspective presented women's liberation as primarily concerned with reallocating the resources, rewards, and recognition of one's culture and society. Feminism expanded and enhanced women's liberation by emphasizing the need to disregard and dissipate burdensome restrictions for all people—children, men, women, workers, the elderly, the transgendered, and the same-sex oriented.

As more women began to enter professions previously dominated by men, organizational literature began to consider gender in its analysis. This literature earned the label "women in management" (Calas & Smircich, 1993, p. 99) with most still collapsing gender into the category of biologically determined sex. Underlying much of this literature is the supposition that gender equals sex which equals women which equals a problem. Women as a concept was implanted "onto pre-existing structures of questioning [such that] ... 'solving the problem' has been mostly equivalent to 'masculinizing' the defective as a normalizing practice" (p. 99).

A third wave of feminism emerged in the 1990s with a new generation of gender scholars focusing on technological, political, economic and cultural factors unique to this period. Third wave feminism extended a universal female identity that often emphasized the white middle-class woman in the past to a more encompassing and inclusive universal female identity. This revised identity often posits a post-structuralist viewpoint emphasizing the ambiguity of gender (Weiner, 2006). Often known as radical feminism, class or capitalistic issues were disregarded and a culture of male power and domination became the focus as the source of women's oppression. Men and women were viewed as fundamentally separate, based on sex, and opposed in common interests (Shelton & Agger, 1993).

Within each of the frameworks for feminism are sub-theories and sub-classifications combining various perspectives and elements. Each places a different emphasis on capitalism versus patriarchy. Rosser (2006) discusses nine feminist theories, their perspectives as related to women in science and technology, and issues each addresses. Her discussion emphasizes the fact that different theories identify and highlight different causes of gender or sex inequalities, thus suggesting different approaches and methodologies.

Feminist theorizing offers new avenues for consideration in considering gender and organizational analysis. These expansions allow an analysis of "genderedness" of knowledge and examine "How is organization theorizing (male) gendered, and with what consequences?" (Calas & Smircich, 1993, p. 99). Rethinking organizational theory with the inclusion of gender requires two acknowledgements. First, understanding that gender

does not equal "female" acknowledges the implicit male-gendered organizational

theorizing practices; and, second, recognizing these practices have silenced women's

voices in organizational theorizing (Calas & Smircich).

Standpoint Theory

Feminist standpoint theory has spawned an intriguing and passionate conversation

amongst feminists and non-feminists during the last twenty-five years. Emerging from

writings and thoughts during the women's liberation movement in the 1960s and 1970s,

feminist standpoint theory has offered an avenue of explanation and understanding of

perceptions of the social world and social phenomena from the perspective of women's

lived lives: "It has been both deconstructive in exposing the androcentrism within the

theory and practice of the sciences and social sciences, and reconstructive in offering

alternative explanations of the world informed by women's experiences and activities"

(Ho & Schraner, 2004, pp. 3-4).

Initially purposed as a way of creating intellectual space for feminist analysis,

feminist standpoint theory has assisted in building a foundation of feminist knowledge

(Walby, 2001). The theory became a core element of feminist thinking as practiced in

the 1980s and 1990s (Hekman, 1997). "Standpoint epistemology is based on the

presumption of a chasm between the knowledge of the oppressed and that of the

oppressor" (Walby, p. 485). This presumption permits those living in marginalized

groups, such as women, to provide a unique viewpoint of their lived experiences that can

challenge and enhance current understandings of society and nature. Standpoint theorists

generally argue against traditional scientific and social scientific research, claiming such

positivism reflects masculine values and methods. In fact, standpoint theorists contend androcentrism is evident in scholarly concepts and methods, evaluation criteria, and in defining problems or questions warranting investigation (Ho & Schraner, 2004). Standpoint theorists argue: "that knowledge is and should be situated in people's diverse social locations. As such, all knowledge is affected by the social conditions under which it is produced; it is grounded in both the social location and the social biography of the observer and the observed" (Mann & Kelley, 1997, p. 392).

Applying standpoint theory to the experiences and lived lives of the co-narrators in this study will illustrate that women CIOs have a unique social location and organizational status. They are in power positions yet remain culturally subordinate to men and often have traditional power utilized against them. Traditional powers are those powers historically within the male hegemonic power structure and include policies, rules, and regulations that are derived, implemented, and enforced by males.

Such dichotomies of power place women in a precarious position. Women CIOs are concurrently insiders and outsiders or socially marginalized. Social marginalization situates one as both an insider and outsider and leads to an understanding of the contrasts. Those marginalized are aware of the beliefs, values, practices and traditions of the dominant group along with awareness of their own beliefs, values, practices and traditions (Lawson, 1999). Collins (1991) highlights that not all women respond to shared themes regarding beliefs, values and practices similarly, especially African American women. One must realize diversity within marginalized women's thoughts.

The perspectives of many subgroups must be understood to approach an encompassing knowledge of social reality as well as to empower the construction of new knowledge.

Acker and Webber (2006) maintain "there is an endemic disconnect between the standpoint of many women academics and the typical structures and cultures of the university" (p. 486). Finding themselves in institutions created and developed by males with males in mind (Rich, 1993), females are confronted with values and styles associated with males. These can include competitiveness, success, dominance, assertiveness, and individualism (Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Heilman, Block, Martell, & Simon, 1989; Nieva & Gutek, 1980). Stereotypically males are seen as aggressive, competitive, dominant, independent, and assertive in social, political, and economic roles (Broverman et al.; Heilman et al.). Managerial competency, as rated by subjects in a hypothetical situation, was more often identified with male managers than females (Nieva & Gutek). Academia is a typical male-centered organization and cannot be excluded or exempted from such typical stereotypes. This leads to the necessity of women's standpoints from lived lives in the academy.

Hartsock (1983) argues that women's lived experiences provide a unique basis for the creation of a feminist standpoint by which one can systematically understand the nature of patriarchal institutions and ideologies. As stated earlier, patriarchy refers to male dominance. Stemming from the male dominating and being responsible for the family, patriarchy continues to be used to designate authority or authoritarian roles

institutionalized through bureaucracies, philosophies, and beliefs (Connell, 1987).

Hartsock (1983) explains that

> the concept of a standpoint structures epistemology in a particular way. Rather
> than a simple dualism, it posits a duality of levels of reality, of which the deeper
> level or essence both includes and explains the 'surface' or appearance, and
> indicates the logic by means of which the appearance inverts and distorts the
> deeper reality (p. 285).

Based on Marxian theory regarding the structural division of labor, Hartsock urges the

use of similar epistemological tools to allow one to understand the various levels of

reality and reveal the real and concealed social relations that lead to gender dominance.

The feminist standpoint "expresses female experience at a particular time and place,

located with a particular set of social relations" (Hartsock, 1983, p. 303).

Harding (1983), a critic of mainstream science, points out that a feminist

standpoint must be sensitive to differences and commonalities of women across race,

class, and culture. A more complete understanding can take place through inclusiveness

rather than through exclusiveness. She states one must go beyond the limiting

epistemologies of functionalism, empiricism, and Marxism to less limiting and new

epistemologies in order to fully understand the sex/gender system. Harding favors

standpoint epistemology positing that when a conflict exists between two knowledges,

the knowledge of the oppressed is preferred over the knowledge of the oppressor (Walby,

2001).

Sprague (2001) states the fundamental premise for much of Harding's and other

standpoint theorists' work when she writes: "Hidden behind the veil of the 'important,'

the 'interesting,' and the 'rigorous' are systematic selection patterns that reflect the

evaluators' stakes with the existing network of prestige and their own experiences of social life and their own class-, race-, and gender-based interests in how social life is organized" (p. 532). Smith (1987) concurs with Sprague as she writes women "have learned to live inside a discourse that is not [theirs] and that expresses and describes a landscape in which [women] are alienated and that preserves that alienation as integral to its practice" (p. 36). Women have been excluded from the ideological work of society due to institutionalized practices of gender exclusion leading to a male-constructed history not only constructed by men but largely about men. This history does not properly account for and explain women's lived experiences and lives. Women must learn to regard each other as authoritative speakers and sources of women's experiences, issues, and concerns. When the male experience is considered to be the human experience, partial knowledge and understandings are produced and do not reflect the dissimilar and diverse experiences of women (Flax, 1983; Harding & Hintikka, 1983; Hartsock, 1983; Millman & Kanter, 1975; Smith, 1987; Sprague & Zimmerman, 1993).

The concept of situated knowledge has emerged from the writings of Edmund Husserl (1980) and Alfred Schutz (1970). Situated knowledge is a key element of standpoint theory. Hekman (1997) maintains standpoint theory identifies knowledge as individual and distinct rather than universal, defining "subjects as constructed by relational forces rather than as transcendent" (p. 356). Feminist standpoint theory has "undermined scientific claims to universality and objectivity, compelling scholars to acknowledge their social location and the specificity of their knowledge-claims" (Ho & Schraner, 2004, p. 8). Situated knowledge is informed by the lived experiences of

women and, according to standpoint theorists, presents a more holistic awareness and comprehension of the world and society.

Critics of standpoint theory argue that it tends to reify women and their lives. It claims a unity and purity of experience that, critics argue, does not exist (Landry & MacLean, 1993). While all knowledge must be socially constructed (Haraway, 1988; Hekman, 1997), any claims to a greater truth by standpoint theorists become problematic. The experiences and standpoints of those dominated are not necessarily innocent positions. Historically, many of those dominated by others have themselves dominated and marginalized other persons, especially women privileged by race or class (Flax, 1987; Haraway). Hekman questions why "the reality of women's lives" (p. 355) would allow for a more objective view of social reality when "the reality of women's lives" (p. 355) is itself a socially constructed discursive formation "constructed, at least in part, by feminist standpoint theorists who define it as the ground of their method" (p. 355). She and Flax (1987) argue that women's vision is not any less distorted than men's, as all knowledge occurs from some perspective, and does not offer one a clearer picture or understanding of reality.

Post-modernism and post-structuralism question the usefulness of feminist standpoint theory and categories such as truth, reality, and women's lives. As feminist and social theory have come to reflect the importance of diversity and difference, Harding (1997) acknowledged that standpoint theory outgrew modernism. "Marxian and other modernist discourses provided the framework for initial standpoint projects" (Ho & Schraner, 2004, p. 13). Today, as Harding posited, post-structuralism offers resources

and a framework that earlier only Marxian epistemology could offer (Ho & Schraner, 2004). For standpoint theorists, "standpoints have always depended on gender, ethnicity, class, sexual orientation, age and other social differences. There is no one feminist standpoint, but multiple standpoints, just as we can never speak of an undifferentiated category of 'women'" (Ho & Schraner, 2004, p. 14). Bringing together the multiple standpoints allows for the possibility of webs of connections leading to shared conversations in epistemology (Haraway, 1988) allowing one to understand the interconnections and intersections of ideas, thoughts, and findings.

Left feminists', liberal feminists', and radical feminists' perspectives were dealt with only in this study to the extent they impacted standpoint theorists' perspectives and ideas. It was not the intent of this study to delve into the specifics of the many feminist theories as this study was specifically focused on listening to the co-narrators' stories from their standpoints. This study was not a theoretical review or test of particular theories of feminist philosophies and orientations but a study that utilized a specific feminist theoretical perspective contributed by feminist scholars and their concerns for women.

Gathering multiple standpoints by utilizing standpoint theory provided a useful lens and framework for this study. This lens was important in discovering the voice of women in higher education information technology positions. The voices of the co-narrators in this study provided enlightenment and clarification of the interconnections and intersections of experiences and situated knowledge related to women's leadership in the gendered organization of higher education information technology.

The descriptions and accounts that were given from their standpoints based on their situations chronicling their lives as executive-level higher education information technology leaders assisted in clarifying the intersections of gender roles and socialization within the structures and functions of information technology in higher education institutions. Their voices and narratives assisted in discerning themes and patterns related to opportunities and obstacles encountered in their roles. The interconnections and intersections between information technology organizations in higher education and perspectives of women situated in CIO positions were examined. Utilizing feminist standpoint theory as a complementary framework facilitated and aided in legitimizing the process of hearing, listening, and becoming informed by the women CIOs' voices, perspectives, and narratives.

Higher education and information technology are two powerful organizations that covertly and overtly employ many traditional male hegemonic patterns limiting women's involvement, visibility, and status within the organization (Kanter, 1975). Incorporating organizational and gendered organizational theory added a clarifying dimension to the inclusive view this study sought to gain. Next, organizational theory and gendered organizational theory are briefly explored.

<u>Organizational Theory</u>

By examining organizational theory significant insights can be gained as an organization's structure often contributes to the creation of gender differences in organizational behavior. The postmodern framework provides this study with the gendered organizations theoretical perspective utilized through the work of feminist

critical theorists. Other organizational theories are not dealt with in detail. It must be acknowledged, however, that all theories and perspectives historically grow from and integrate with each other, evolving into new perspectives and standpoints. These new perspectives and standpoints allow for the intersections, interconnections, and integration of gendered organizational theory with standpoint theory in this study.

Organizational theoretical insights in the postmodern framework by feminist critical theorists provide insight into the masculine-gendered substructure of administrative organizational structures. Organizational theory addresses overt and covert policies, processes, and procedures, through which an organization's reality is produced, promoted, reinforced, and revised. The masculine substructure that is pervasive in most organizations leads to inquiry into and study of the gendered organization viewpoint. Through the acquiescence to this masculine substructure of organization, the system (political, social, economic) reproduces itself "without regard for its dysfunctional consequences for women, men, and organizations" (Maier, 1999, p. 90).

Organizations are dynamic and complex. Organizational theories, like feminist theories, have evolved over time and are composed of many sub-theories and sub-categorizations of thought and analysis. Organizational theories deal with thought and analysis related to a variety of topics, such as, bureaucracies, management, human relations, industrialization, labor, staff relationships, individuals, groups, leadership, supervision, decision-making, cybernetics, and organizational size and structure issues. Primary organizational theories stem from bureaucratic theories by many early writers.

Karl Marx's writings dealt with class conflict, capitalism, and communism with the bureaucrats controlling the power, information, myths, and symbols of the organization while exerting control over the other members of the organization (Rogers, 1975).

Weber's (1958) concept of bureaucracy is considered more in the context of political sociology. His theory of bureaucracy contained two primary elements, empirical characteristics of a bureaucracy and assumptions about the attributes of the characteristics, such as rationality and efficiency. He is often criticized for focusing on the characteristics of a bureaucracy rather than on delving into the processes accounting for these characteristics. These processes are similar to those that situate women in certain roles within organizations and often lead to a silencing of their voices.

Bolman and Deal (1984) suggest organizations can be viewed through four different lens or perspectives. Such perspectives or frames assist leaders in gathering information and making decisions as the frames filter information, allowing certain items through and blocking other items. The structural frame or perspective highlights formal roles and relationships, similar to Weber's concept of bureaucracy. The human resource frame emphasizes people needs, including those for achievement and creativity. The political frame focuses on conflict over scarce resources, often fragmenting organizations into special interest groups. And, the symbolic frame considers organizations as cultures, with various attributes and values. In depth analysis of each frame, which was not done in this study, allows an identification and clarification of elements that intersect, interconnect, and assist in the creation of genderedness within organizations. This genderedness situates individuals according to normative definitions of masculinity and

femininity (Powell, 1993; Scott, 1986) patterning organizational behavior and structure in terms of this distinction (Acker, 1993).

Management theories. Management theories can be traced back hundreds of years, even though they were not termed that then (Marion, 2002). Watt and Boulton's standardization of product components, production planning, and incentive-wage payments occurred in the late 1700s in the Soho Metalworks Factory in England. Other early management theorists were Charles Babbage who wrote *The Economy of Manufacturers* in 1832, Frederick Taylor in the late 1800s and Louis Brandeis also from the 1800s. Early theories focused on maximizing worker efforts and efficient factory operations and were part of the writings of many associated with traditional management theory such as Gantt, Gilbreth, Emerson, and Cooke (Rogers, 1975).

These theories are a part of organizational macrotheory known as Closed Systems theory. Closed System theories include scientific management, administration management, and bureaucracy theories along with human relations theory. They emphasize cohesive, rational goals and the fact that all items of importance are self-contained within organizations (Glos, Steade, & Lowry, 1980; Marion, 2002). John Dewey's decision-making model utilizes many scientific management concepts and relies on an assumption of Closed Systems theory—that decisions can be optimized resulting in one best decision or solution to a problem (Marion).

Structural theory is an organizational theory and management framework that provides a transition between closed and open theoretical organizational perspectives. An organization's structure is viewed as a product of necessity in balancing multiple

organizational, social and environmental goals in order to survive. This became very evident during the industrial revolution. Educational institutions were quite aware of the different management and leadership theories during this time and not only researched and analyzed them as applicable to educational institutions but researchers also developed several well-known and frequently used leadership scales and instruments designed to identify particular leadership styles and attributes individuals possessed or lacked (Marion, 2002).

Labor relations, human relations, wages, and other management issues escalated and grew as the industrial revolution occurred. As technology, innovation and service industries flourished, and as Western society began to perceive organizations differently due to more liberal politics and rebellions against bureaucracies in the 1960s (Marion, 2002), classical bureaucratized relationships often formed into flatter structures creating a decline of the hierarchical line-staff relationships (Rogers, 1975). Structural theories led to Open System theories that took businesses out of their self-contained world and attempted to understand how environmental factors affected the organization's structure, staff behavior, and productivity (Glos et al., 1980; Marion).

As Open System theories emerged in the 1960s, other prescriptive theories grew in popularity as they attempted to provide management with recommendations and solutions for problems within organizations. Contingency theory, exploring ways organizational leaders can respond to environmental and organizational variables; and conflict theory, exploring the emergence of hostilities due to scarce resources (existing physical conditions) for individuals or groups are two well-known open system theories

(Bensimon, Neumann, & Birnbaum, 1989; Bolman & Deal, 1984). Theories during this era focused on external demands and pressures organizations must address if they are to be effective (Marion, 2002).

Reacting to the previous theories and their positivistic nature, current theories fall into an anti-positivistic or postmodern framework. The core of these theories is Strategic choice theory. Others include Cultural theory, Critical theory, Institutionalism, Population Ecology, and Complexity theory. Common precepts to all is that organizational structure and behavior are erratic and unpredictable and better described in terms of culture, beliefs, humanness, and philosophies than described by a science of organizations (Marion, 2002) as earlier theories often attempted to do.

Several theories exist regarding cognitive frames or models specific to higher education institutional functioning. These models include the collegial model, bureaucratic model, political model, anarchical model, and combinations of these (Birnbaum, 1988). For the purposes of this study, these cognitive models are not addressed. Whether one is more or less inclusive of women is an issue to be addressed by other separate research studies.

Higher education is a unique organization. While many attempt to view it similar to a corporation in various analyses, it is quite different. Corporate organizational frameworks and units of analyses do not fit much of higher education. Higher education is composed of tenured faculty, adheres to principles of academic freedom, has alumni, and has parents of its students to deal with. As Baldridge, Curtis, Ecker, and Riley (1978) maintain, academic institutions are very different organizationally from other

institutions and, because of this, "traditional management theories cannot be applied ...

without carefully considering whether they will work well in that unique academic

setting" (p. 9). They have more diverse and ambiguous goals, serve clients rather than

producing a product, have highly professional employees, and have various decision-

makers who participate in the decision-making process at varying times. While higher

education does have a rather unique role and composition organizationally, several

elements maintain commonality with those of organizations in general.

Organizational structures and behaviors unconsciously operate under a white male

hegemony framework in most core organizations in the United States. Unearned

privileges belong to certain individuals and are not present because of deliberate or

conscious decisions or actions, but rather due to the hegemonies and social norms of the

culture. Unearned privileges often lead to excellent performance, inclusion in networks,

and advanced opportunities within the organization. Most members of organizations give

little to no thought to these unearned privileges and advantages, however, "they

continuously accrue and manifest such that organizational level impact is profound and

racial and gender-based inequality thrives" (Rosette, 2006, p. 259). The silencing of

women's voices in organizations is often one additional result as most women have not

been allowed these privileges nor the power to speak and be heard as an equal.

Organizational structures and their embedded managerial theoretical frameworks

contribute to the perpetuation of genderedness in organizations.

Feminist perspectives. Kanter (1977) discusses organizational structure as the

source of gender differences in organizational behavior rather than the individual

characteristics of men and women. Quite often, women are structurally placed in lower level positions, many of which have no growth or promotional path, or they are exposed as tokens in upper level positions. Such placements of women and men create and promote gender images of those typically occupying such organizational roles. In spite of her insights recognizing that masculine principles, practices, and processes dominate organizations, Kanter focuses on organizational structure and its creation of opportunistic and exploitative relationships for both men and women. She considers gender to be situated outside of the organizational structure in spite of information she presents regarding gender and male dominance.

"The analytical distinction between sex and gender" … is necessary for understanding organizational theorizing as "organizational theorizing has been explicitly and primarily concerned with sex and not gender" (Calas & Smircich, 1993, p. 98). Ressner's (1987) work, as discussed in Acker (1993), assumes the gender-neutrality of organizations, similar to Kanter. Ressner discussed organizations having a dual structure, patriarchy and bureaucracy. Gender enters an organization through patriarchy, an autonomous structure that exists parallel to bureaucracy. The existence of a dual parallel structure allows for discussion of women's experiences, but the bureaucratic structure is left relatively unexamined as related to women's experiences.

Ferguson (1984) critiques bureaucracy viewing it as a construction of male domination and power through the implementation of androcentric rules and procedures. Historically and currently, workers, clients, and others are feminized as they look for functional ways to manage their powerlessness within the existing power structure which

simultaneously perpetuates their dependence. This response results in a disembodied, gender-neutral bureaucracy that serves as the oppressor. Power allows bureaucracies to continue functioning. Traditionally, power has been associated with masculine traits and the process of being and acting out masculinity. The role of gender in power relationships is necessary to take into account as other theoretical positions are considered as it adds complex components and processes to the bureaucratic organization's control and domination of others.

Those who presume gender neutrality of organizations and legitimacy of organizational norms have "blindly overlooked the very real interdependence between work and nonwork life domains and [have] promoted a particular orientation toward appropriate managerial attitudes and behavior" (Maier, 1999, p. 70). It is specifically the unquestioned norms forming the fundamental foundation of organizations that comprise the source of manifestations of gender, "in which maleness and masculinity are distinguished from femaleness and femininity and in which the latter is consistently (historically and cross-culturally) subordinated to the former" (p. 70).

Connell (1987) argues that hegemonic masculinity helps to legitimize current organizational power, typified by the image of an authoritative, strong leader who is technically competent, attractive, sexually potent, a family man, and in control of his emotions. Hacker (1989) suggests that connections between organizational power and male sexuality are embedded in organizational processes. For those in technical work, the enjoyment of technology often becomes linked to domination through power over the machine and other people, especially women, in the workplace. Men gain economically

from organizational hierarchies based on traditional power structures as their career opportunities often depend on barriers denying those opportunities to women (Crompton & Jones, 1984).

Barriers or obstacles present themselves in many forms and are manifested in many ways. Many of these are discussed later in this chapter, however, organizationally many roles and positions have implied masculinity or femininity to them creating obstacles related to occupational jurisdiction. Certain artifacts and work objects become associated with work roles giving additional legitimacy to the genderedness of certain positions within the organizational structure.

Occupational jurisdiction. Recent work in occupational jurisdiction has reviewed the role of occupational artifacts, such as computers and other technological tools, in legitimizing authority, task boundaries, and the authenticity of one's work (Bechky, 2003); the competition for dominance over work areas (Abbott, 1981); and the dynamics of occupational interrelations in the workplace as related to task and structure changes within organizations (Allen, 2000; Barley, 1986; Crozier, 1964). Jurisdictional change is the change between a profession and the work associated with that profession. Most analyses have looked at the negotiation of work or task areas from a political boundaries perspective rather than the interactional processes and perspective by which struggles occur within organizations. Political boundaries legitimize professional power through such means as certification, legislation, or accreditation (Begun & Lippincott, 1987; Halpern, 1992; Kronus, 1976). Political boundaries also legitimize professional power and jurisdiction through the race, gender, or social class composition of the occupation,

enabling or restricting opportunities (Etzioni, 1969; Ritzer, 1972). Another area of legitimization of jurisdiction supported by research is "that cognitive and representational strategies are influential in garnering and maintaining occupational jurisdiction" (Bechky, 2003, p. 722). The manner in which knowledge and expertise are framed and structured can affect public opinion toward or against occupations, the work of that occupation, and those in the role of the occupation (Abbott, 1981; Power, 1997).

Artifacts are prevalent in the information technology field of occupations and are integral in the accomplishment of many work processes and tasks. Political boundaries are established early in one's life related to jurisdiction over these artifacts through one's sex, race, gender, or social class. Those boundaries are discussed later in this chapter as obstacles encountered and opportunities available to females' pursuit or achievement of higher education information technology leadership roles.

Various belief systems, symbols, and images contribute to the definition of masculinity or femininity regarding occupations and their jurisdictions. Together these can often create an environment and culture where gender divisions are considered "natural" (Acker, 1999, p. 182). Men are viewed as those who should have access to the artifacts or those whose access is considered the norm or normal. Women are viewed as those different or others who must conform to the male standards and beliefs or show loyalty to those dominant in order to gain positions allowing them certain occupational authority (Fox, 2006).

The various aspects of occupational jurisdiction fall within organizational theorizing in that those who have access to the artifacts have access to power. Those who

have power have access to the artifacts. Information technologists with jurisdiction over the infrastructure, networks, programming code, and technical expertise are afforded decision-making power due to this jurisdiction and power over the technology. This power allows them control over others' lives and jurisdictions within the organization as well as affecting lives and jurisdictions that cross-over to outside the organization.

Theories of power. Theories of power and influence in organizations analyze the source and amount of power that leaders have available to them and the manner in which they influence followers (Birnbaum, 1988). Social power theories predict leaders' influence is due to either official power, the office they hold; or informal power, their personality; or due to formal power, which is a combination of both (Nidiffer, 2001). Higher education and information technology organizations contain many people with all three types of power. Jurisdiction over artifacts, as discussed earlier, adds to social power in information technology fields.

Social exchange theory is also applicable to the higher education organization. This theory predicts reciprocal relationships between leaders and followers. The leaders provide services to a group in exchange for the group's acceptance and approval of the leader's demands or authority. Leadership success means fulfilling the followers' expectations (Bensimon et al., 1989; Birnbaum, 1988; Nidiffer, 2001). This combined with social power theory applies to higher education as many look to the president and vice presidents of the institution, faculty leaders, and CIO to fulfill expectations regarding leadership for the university and its supporting technological infrastructure.

While other traditional organizational leadership theories exist, more recent work has spawned research related to emergent leadership theory (Chliwniak, 1997; Sturnick, 1998; Terry, 1993; Wilcox & Ebbs, 1992). Emergent leadership is more concerned with a relational context in which power, decision-making, information, and recognition are shared with others. The leadership style is often flexible, participatory, and team-oriented with communication and collaboration emphasized. This style ties into the traits often characterizing women leaders (Nidiffer, 2001).

As previously mentioned, general organizational theories, and specifically, management theories, occupation jurisdiction theory, and theories of power consciously or unconsciously contain within them gendered perspectives. Gendered organizational theory and its conceptual framework lend strength and depth to the analysis of organizations in general, but specifically, to information technology organizations in higher education. Gendered organizational theory adds breadth to this writer's conceptual framework by allowing for additional depth of understanding as women CIOs situated knowledge and experiences are explored.

Gendered Organizational Theory

Many propose organizations are gendered. Acker (1993) writes, "To say that an organization …. is gendered means that advantage and disadvantage, exploitation and control, action and emotion, meaning and identity, are patterned through and in terms of a distinction between male and female, masculine and feminine" (p. 85). Gender distinctions within organizations are not in addition to nor do they occur in parallel with ongoing processes, but are embedded in the "characteristics of the masculine-encoded

structures and processes within which men and women are required to operate" (Maier, 1999, p. 90). Traditionally, such gendering elevates male experiences and norms to unquestioned levels of "the customary" and "the ordinary," while at the same time dismissing that which appears feminine (Maier). Gendering can also occur through the design of technology as design is done mostly by males for males. Technology is often designed to be independent, autonomous, and distant. It fails to foster teamwork and relationships (Rosser, 2006).

Individuals and organizations cannot be understood as separate entities from the culture and society in which the individual lives and works (Fagenson, 1993). Societies engage in certain processes that support the reproduction of its class, political, and economic structures and these structures define relationships, symbols, and processes. Relationships in the workplace, the structuring of the labor market, the control of work processes, and "the underlying wage relation are always affected by symbols of gender, processes of gender identity, and material inequalities between women and men" (Acker, 1993, p. 85).

Three common threads occur in the literature on gendered organizations. First, bureaucratic organizations are inherently gendered (Acker, 1999; Ferguson, 1984). Second, "organizations or occupations are gendered to the extent that they are male or female dominated" (Britton, 2000, p. 420). Third, organizations or occupations are gendered by being conceived, discussed, and described in terms of hegemonic masculine traits, ideologies, and symbols (Acker, 1999; Britton, 2000; Hacker, 1989; Kanter, 1977; Smith, 1979; Wright, 1996).

Acker (1993) highlights and summarizes four gendering constructions in social structures, including organizations. First, "the construction of divisions along lines of gender" (p. 85) produces divisions of proper behaviors, labor, power, physical locations, and divisions within the family and the state. Managerial decisions often instigate gender divisions (Cohn, 1985) and they are maintained through organizational practices (Acker). Citing Cockburn's (1983, 1985) work, Acker conveys that even when reorganizations occur in organizations, gender divisions are maintained. The introduction of new technologies in an organization often results in reorganization, but the gendered division of labor is generally maintained leaving the control of or jurisdiction over the technology in the control of men.

Second, organizations construct images and symbols that explain, reinforce and may even oppose these gender divisions. These occur in many venues such as language, dress, culture, the media, and ideology. For example, leadership and its images are those of stereotypic male characteristics and masculine traits (Blackmore, 1993; Chliwniak, 1997; Kelly, 1991). Behaving and acting male allows access to decision-making and leadership positions as this is associated with being competent, intelligent, and dominant. Organizations often state they are an equal opportunity employment organization, meaning they oppose gender bias and treat all fairly and equally based on their abilities. Media regarding an organization may portray women and minorities working within the organization providing the illusion the workforce is diverse. Ideologies with an organization may state openness to diversity or expound the fair treatment and promotion of all workers when the reality may be quite different.

Third, the interactions between males and females, males and males, and females and females produce gendered organizational structures. For example, dominance and submission in conversational styles, topics discussed, interruptions, and the amount of time one speaks, contribute toward the creation and maintenance of gendered organizations (Acker, 1993; West & Zimmerman, 1983). Females more often use a linguistic style of asking for people's cooperation as opposed to issuing orders to accomplish tasks, as do males. This is often seen by men as the woman lacking self-confidence or failing to exercise authority over subordinates. Males are more likely to interrupt conversations than females and generally talk longer. Small talk in a room is more likely to be sports-centered than centered around a topic more of interest to females (Oakley, 2000). A low pitched, masculine voice is often considered more appropriate for that of a leader than a higher pitched feminine voice (Jamieson, 1995).

Fourth, one's choice of career, dress, language used, and presentation and mannerisms construct the gendered processes and compose the elements of individual identity. A person's hegemonious socialization process leads to the way in which a person dresses, how often a person speaks in a conversation, the type of role models present as career choices are considered, and the formation of individual habits and traits. Finally, gender assists in the framing of various social structures, including organizations. Gender is present in assumptions, logic, practices, and hierarchies that form and structure work organizations. Organizational manuals and documents, labor contracts, managerial directives, job evaluations, and even the concept of a job implicate gender in basic, fundamental ways (Reskin & Roos, 1987).

Lorber (1994) and Martin (2003) view gender as a social institution that sets patterns of expectations and defines the social processes related to everyday life. Not only is gender inherent in organizations in society but it is also an entity in and of itself, according to Lorber. Lorber, Martin, and Acker (1993) recognize gender as shaping social and organizational structures, reproduced by men and women's interactions based on gender norms within gendered organizations. This leads to various power relations shaped by gender patterns and behaviors. Gherardi (1995) and Scott (1986) both stress gender is an omnipresent symbol of power relations in organizations. Smith (1979) also notes the discussions available during the 1960s and 1970s centered on organizations being grounded in the everyday lives and working patterns and processes of men.

Existing patterns of gender segregation within organizations, gender identity related to careers and occupations, and gendered structuring cannot be accounted for with current theories of organizational gender neutrality. To better understand gender construction and gender inequality, Acker (1993) suggests a systematic theory of the intersections and interweaving of gender and organizations can lead one to a clearer understanding in several ways. First, organizational practices contribute to the gender segregation of work through patterns of jobs, power, and subordination. Males generally dominate the highest positions, are the decision-makers, and perpetuate gender divisions through organizational practices. Second, organizational processes contribute to income and status inequality between males and females, again through the patterns of jobs and wages. Third, organizations contribute to the invention, reproduction, and dissemination of cultural images of gender as gender-appropriate behaviors and attitudes are

emphasized. As Hochschild (1983) writes, men continue to be the actors and women the emotional support. Men are more often thought of as the technological wizards and women as less technical. Fourth, elements of one's gender identity are often the result of organizational processes and pressures as exemplified by alliances and exclusions in the workplace.

Information technology and higher education organizations are not organizationally gender-neutral. Both contain organizational practices that contribute to the gender segregation of work, income disparity, and status inequality between males and females. Both contribute to the invention, reproduction, and dissemination of cultural images of gender. Both contain organizational processes and pressures interwoven into the operational and functional aspects of the organization that contribute to one's gender identity.

When men and women submit to the masculine substructures of organizations in information technology and higher education, the "system is allowed to reproduce itself without regard for its dysfunctional consequences for women, men, and organizations" (Maier, 1999, p. 90). The lens of gender allows the focus to shift from the traits of individuals to the masculine-embedded structures and processes of organizations that women and men operate within. "These structures and processes are gendered in ways that elevate typically male experiences to the level of unquestioned norm while dismissing that which appears feminine as irrational, illogical, unsubstantiated, or irrelevant; that is 'normal' managers [and leaders] are masculine" (p. 90). Higher education information technology divisions are typically male-centered. Occupational

jurisdiction has offered males advantage over women as artifacts, roles and positions in technical fields have more often advantaged men over women. The co-narrators in this study provided their perspectives and lived experiences related to the gendered structures and processes of higher education information technology. Next, a review of literature related to sex-role and gender patterns in leadership positions.

Sex-role and Gender Patterns in Leadership Positions

Many researchers have found few differences in the innate skills and abilities of men and women managers (Dobbins & Platz, 1986; Jones, 1986; Powell, 1993; Rosener, 1990). Yet, men continue to dominate leadership positions. Literature indicates many cultural prejudices exist that presume men are better skilled and suited for leadership positions (Heilman et al., 1989). Others note that leadership studies and theory are based primarily on a male framework resulting from studies primarily of males (Fitzgerald, 2003; Shakeshaft, 1987, 2006). In fact, as researchers began to look at how women lead, "studies that did not compare women to men were deemed 'inadequate' and were not likely to be published" (Shakeshaft, 2006, p. 504). In gathering evidence to support that women educational administrators were at least as good as men educational administrators, researchers found that their findings were only considered valid if they were compared to findings on men. "Male behavior was the measuring stick against which all studies of women were to be compared" (Shakeshaft, 2006, p. 504). Slowly over the years, such comparison studies evolved into more single-sex inquiries and acceptance.

However, women are still marginalized and unheard with most studies being quantitative in nature. Yet while the research indicates that women have moved more into middle management positions than in the past (Catalyst, 1990), the glass ceiling is still present in regard to women ascending into top positions.

Sex-role Patterns in Leadership Positions

Studies of sex-role patterns or sex segregation in the labor force have typically focused on women's experiences in occupations dominated by males (Williams, 1992). Research provides considerable evidence that women and minorities encounter obstacles, many of which are subtle or informal, preventing them from moving into various positions including upper management and executive levels in organizations (Adkison, 1981; Catalyst, 1990, 2003; Federal Glass Ceiling Commission, 1995; Hansot & Tyack, 1981; Mani, 1997; Morrison, 1992; Morrison & Von Glinow, 1990; Schmuck, 1977; Shakeshaft, 1987; Williams, 1992).

Historically, women have dominated most of the service, nursing, and teaching occupations while men have dominated production, craft, farming, professional, technical, and sales occupations. A sex difference in wages aligns with the occupations as men typically hold the higher paying positions. This workplace of sex-segregation has historically conveyed a biting message to youth planning to enter the workforce. That message is: "while all occupations are theoretically open to all qualified individuals, (a) the lower-paying, less-valued occupations are more appropriate for females; (b) the higher-paying, more-valued occupations are more appropriate for males; and (c) men's work is often worth more than women's work for the same job" (Powell, 1988, p. 79).

"The decisions made by individuals and organizations cumulatively affect the representation of the sexes in managerial positions" (Powell, 1988, p. 98). Occupational expectations and aspirations have historically supported sex segregation of occupations with more males aspiring to top management positions than females. Due to the socialization process producing and reproducing gender stereotypes, the task of sex desegregation is a daunting one.

Corporate businesses. Women comprise 51% of the population, according to the 2002 Census data (Spraggins, 2003), and 46.4% of the total workforce over the age of 16 as of 2005 (U.S. Bureau of Labor, 2005b). Yet, women occupy very few upper-level or executive-level positions in organizations. Catalyst's (2006a) *2005 Census of Women Corporate Officers and Top Earners* confirmed the growth of women holding corporate officer positions to 16.4% in the Fortune 500 corporations and to 14.4% in the Financial Post 500 corporations. This growth, however, had slowed to a ten-year low increase with only a 0.7 percent gain over the number of positions held in 2002. "Women held 9.4 percent of the highest executive titles, up from 7.9 percent in 2002. Eight companies in the Fortune 500 were led by a woman CEO, compared with six in 2002" (Catalyst, 2005, p. 1). Yet only 6.4 percent of top corporate officer wage earners were women (Catalyst, 2005). Similar findings were confirmed by the Annenberg Public Policy Center (Falk & Grizard, 2003) in its review of communication companies. At a calculated growth trend from the past ten years of 0.82 percentage points per year, it will take forty years or more for women to achieve parity with men in these positions.

In 1996, the overall percentage of women on corporate boards for the Fortune 500 corporations passed the 10% mark. However, 105 of the Fortune 500 corporations at that time had no women present on their boards (Dobrsynski, 1996). In 2004, women have dropped to 9% of the members on corporate boards for the Fortune 500 corporations (Shafer & Trautlein, 2007). In government leadership positions, women occupied 27 percent of the federal government's Senior Executive Service positions as of September 2004 (U.S. Office of Personnel Management, 2006), up from 13 percent in 1992 (Mani, 1997).

Chief Executive Officers (CEOs) consider line experience or positions as inside directors (working in responsible positions that lead to upper-level and executive spots) as essential to reaching senior levels in most organizations (Bilimoria & Piderit, 1994; Daily, Certo, & Dalton, 1999; Kesner, 1988). Accepting and performing such responsibilities puts individuals in the queue to advance to CEO positions. In Catalyst's survey (2005), however, "women were two and one-half times as likely to hold staff positions (71 percent) as they were to hold line positions (29 percent)" (p. 3). In 2005, women actually held 10.6 percent of the line positions while men held 89.4 percent. According to Catalyst's survey, the lower percentage of women in line positions is not due to lack of desire, goals, ambition, or the fact the woman had to care for her children. Catalyst's survey revealed, of those respondents, "[e]qual percentages of women and men senior managers aspire to top positions, regardless of whether or not they have children under the age of 18 living at home with them" (Catalyst, 2005, p. 2).

Daily et al. (1999) report little to no progress of women in the executive queue between 1987 and 1996 in the Fortune 500 corporations and argue that the situation has deteriorated. In 1987 eleven women were inside directors and by 1996 only eight women were inside directors of Fortune 500 companies. "… not only have women made no progress in their ascension to the executive suite, there is not evidence that such progress is likely to be forthcoming for many years" (p. 97).

Higher education institutions. In higher education in 2002, women held 21.1% of the college presidencies (American Council on Education, 2002), an increase of 5.1% from 1995 (Chliwniak, 1997). According to the Chronicle of Higher Education's (2006) 2005 Survey of college and university presidents "who lead institutions that offer a four-year degree, and have a comprehensive academic program" (p. 29), women held 17.8 % of the college and university presidencies. Projecting growth rates and assuming similar conditions, "women will achieve the same percentage of presidencies as their percentage of the general population (about half of the population) in approximately …the year 2040" (Chliwniak, 1997, p. 8). Women account for 38% of the faculty overall. Breaking this into specific faculty roles, 23% were full professors, 38% were associate professors, 46% were assistant professors, 54% were lecturers, and 58% were instructors (Curtis, 2004).

It is very difficult to find data regarding individual's sex related to academic administrators. Others have also noted the difficulty in finding general sex-related data regarding top management positions (Goodman, Fields, & Blum, 2003). One might consider this ironic for a nation and academy that tends to collect and compile facts and

statistics on the most minute elements of everyday life. While the American Council on Education (ACE) Office of Women in Higher Education has tracked women presidents, something similar is needed for academic administrative positions. While the number of women college or university presidents has increased over the last few years, it is recognized that paths leading to these positions have been those of deans, provosts, or other academic administrative positions. Thus, one would hope more women are beginning to occupy these positions, but numbers are difficult to find. It is also beginning to be recognized that as women attain presidencies they are more insistent on advancing women and achieving gender equity (Musil, 2006).

The *Chronicle of Higher Education* (2002) has published data gathered from the U. S. Department of Education related to higher education institutions for decades. It was only in their 2002-2003 *Almanac* issue that the table regarding Employees in Colleges and Universities by Racial and Ethnic Group included categorizations of men and women professional and nonprofessional employees. In that publication, men professional executive, administrative, and managerial employees were greater in number than women. In the *Chronicle of Higher Education* (2006) issue, women were greater in number in this category than men. The category includes "persons whose assignments require management of the institution, or a customarily recognized department or subdivision thereof" (National Center for Education Statistics [NCES], 2003, p. 5). Job titles listed by the NCES that fall into this category are many. They range from the president, to assistant and associate deans and department heads where their primary

activity is administrative, to middle and first-line managers of services, productions, and sales on campus.

Even though the number of women in the professional executive, administrative, and managerial category was greater than men, the patriarchal culture in higher education promotes masculine norms. Leadership and its images are those of stereotypic male characteristics and masculine traits (Blackmore, 1993; Chliwniak, 1997; Kelly, 1991). Women professionals in higher education continue to "hover on the fringe of the institution" (Chliwniak, 1997, p. 13) in spite of being a larger population as compared to men.

Information technology. The U.S. Department of Labor defines "high tech" as extending beyond computers, software, and the Internet. Individuals working in high tech occupations are those in scientific, technical, and engineering areas. As of 2005, women employed in these occupations ranged from a low of 7.1% of those employed in electronic and electrical engineering to a high of 32.3% in computer and information systems managers (Catalyst, 2006b).

Fox (2006) discusses the close relationship that exists between technology and engineering. Engineers holding a doctoral degree become an important focal group "because they deal directly with issues of technological research and its impact, and … they train university students, who, in turn, are critical for the future of science and society" (p. 48). Between 1990 and 1999, eleven percent of the PhD degrees in engineering were earned by women and in 2001, of those employed doctoral-level engineers, 7.6% were women. The occupational status of women as doctoral engineers

"is significant to and telling of gender stratification in American society" (p. 48). These women "have progressed through the proverbial educational pipeline (secondary, undergraduate, and graduate education) in science" (p. 48). In addition, and perhaps more importantly, "they are a highly select group who have already overcome barriers of selection (both by themselves and by institutions) into engineering and have acquired credentials for high-level participation in the most male-dominated of professions" (p. 48).

Females' attitudes toward and interest in information technology career fields are influenced by a variety of elements, such as, the socialization process, presence of role models, awareness of careers, educational experiences, and classroom and home environments (Turner, Bernt, & Pecora, 2002). Males and females tend to show equal interest in computers until about fifth grade (Kantrowitz, 1996). By high school, a clear gender bias exists of males favoring technology over females (Shashaani, 1994).

Sanders (2005) researched and summarized nearly 600 articles related to gender representation in information and communication technologies (ICT) exploring the intersection of gender, technology, and education. While, in the past, female representation, as compared to males, has traditionally been low in computer science and information technology arenas, representation of females seems to be decreasing even more as compared to number of females in the other sciences. The articles reviewed by Sanders fell into one of three developmental stages with respect to gender and technology as defined by Littleton and Hoyles (2002). The majority fell into Stage 1, "noticing the gender imbalance at home, in school, and in attitudes," with some falling into Stage 2,

"changing female participation in ICT activities through role models and collaborative groupings," and very few falling in Stage 3, "challenging the dominant paradigm of ICT as culturally and historically male" (Sanders, 2005, p. 5).

Littleton and Hoyles (2002) discuss three developmental stages as well. The stages examine areas related to (1) societal influences; (2) age, stage in life, and pipeline issues; (3) experience, attitude and computer use patterns; (4) the classroom context, pedagogy, curriculum, teachers, and faculty; and (5) special efforts involving interventions, teacher education, and departmental change.

Sanders (2005) comments, "Reflecting the origins of technology, most research has focused on female deficits: their lower experience levels, less positive attitudes, and failure to persist and perform well in educational programs, as compared with males" (p. 23). The further identification and removal of obstacles that females face in accessing technology and being successful in information technology arenas must continue. Research suggests many small efforts and successes that have occurred; however, these need to be pursued on a much wider scale and penetration of efforts need to be made into Stages 2 and 3, as identified by Littleton and Hoyles (2002).

One must also be careful not to use only involvement in computer science as a measure when comparing number of males and females. Many of the articles reviewed by Sanders (2005) did discuss other types of involvement, as there are many activities and uses of technology that lead to careers and opportunities where one does not have or need a background in the academic computer science field.

Wasburn and Miller (2006) conducted a case study of Women in Technology, a student organization at Purdue University. They found a significant number of women felt isolated in their classes, believed professors of the technology courses treated men and women unequally, felt uncomfortable asking for help from the professor outside of class, and were uncertain or disagreed "with the statement that they feel like equal participants when working on group projects with male teammates" (p. 69). Many felt demoralized and disrespected by the male students and identified as a critical need the need for women role models and mentors.

A meta-analysis of 106 studies, of which 78% dealt with subjects in the United States with the largest subgroup population being college-aged, indicated male subjects have more positive attitudes toward computers than female subjects (Liao, 1999; Shashaani, 1994). Social expectations of individuals and society greatly contribute toward the gender differences in attitudes toward technology and other nontraditional female occupations (Canter, 1979; Davies & Kandel, 1981; Eccles, 1987; Houser & Garvey, 1985).

Collectively, the societal influence of technology being a non-female pursuit begins in the home, continues through the educational process, and into employment practices (Eccles, 1989; Rowe, 1990). Although many insist great strides are being made with gender equity, the subtle, covert and overt biases remain and serve as obstacles to equal opportunity (Rowe; Rutherford, 1994; Savan, 1994; Schwartz & Markham, 1985; Signorielli, 1993; Tannen, 1996; Top, 1991). The media perpetuates many of the obstacles and gaps by exaggerating stereotypical roles through portrayals in computer

clip art (Binns & Branch, 1995), and in advertisements regarding computer technology

(Knupfer, 1998). Mass media advertisements, messages, and educational materials could

take better and more action encouraging gender equity and discouraging gender bias

(Turkle & Papert, 1990).

These biases permeate into all aspects of society. One might think that with the

computer industry being relatively new to the industrial conglomerate more gender-

diverse leadership would be occurring within its ranks. Yet, this is not the case within the

corporate world nor is it the case within higher education (Aisenberg & Harrington, 1988;

Kantrowitz, 1996). Less than 28% of the bachelor's degrees awarded in computer

science are earned by women—falling from a high of 37% in 1984. Women earn 9% of

the engineering-related bachelor degrees (American Association of University Women

[AAUW] Educational Foundation Commission, 2000). The pipeline of women in

computer science has been shrinking since the mid 1980s with fewer B.A./B.S. degrees

awarded in computer science to women annually while other science and engineering

disciplines have seen increases in the number of degrees awarded to women. (Camp,

1997; Freeman, 2004). Craig, Paradis, and Turner's work (2002) confirmed individuals'

perceptions of the computing disciplines as gendered, favoring males, from both male

and female students in differing parts of the world.

Others argue that the shrinking pipeline is really "a roadway with many on-

ramps" (Turner et al., 2002, p. 16) and one should not put so much focus on entering the

pipeline through the field of computer science or engineering. These on-ramps bring

women into the information technology field from various disciplines, fields of study,

and through multiple experiences. Off-ramps and on-ramps can also provide women with opportunities to leave the profession to raise children or attend to other responsibilities and be able to get back onto their career path at a later time (Hewlett & Luce, 2005). Women often have nonlinear careers and retaining or reattaching these women to their career fields is important in order to not lose their talents and continue to provide opportunities for their career development.

"The percentage of women in the [information technology] workforce has declined by 21% since 1996, from a high of 41% in 1996 to 32.4% in 2004" (The Information Technology Association of America [ITAA], 2005, p. 2). When women in administrative job categories were excluded from the analysis, "the percentage of women in IT drops from 32.4% to 24.9%" (p. 2). These figures are based on an analysis of data from the Bureau of Labor Statistics Current Population Surveys and on twelve technology related occupational classifications used by the Bureau. During this time the percent of women in the general workforce remained relatively stable. These figures represent little to no progress of women in the managerial or professional ranks and a substantial decrease in the administrative (data entry and computer operator positions) job categories, which have experienced cuts in recent years (ITAA, 2005).

Considering strides women are professionally making in other career fields today, the question arises as to "What is wrong with this field [information technology] that it can't attract and retain women" (Ramsey & McCorduck, 2005, p. 7)? Ramsey and McCorduck agree that the number of women seeking careers in the information technology arena has been declining over the past ten to fifteen years. While the research

is not indicative of any prevailing explanation for this, indications point to cultural stereotypes, work-life conflicts, and the unwelcoming culture of information technology.

The research firm, Gartner Inc., is predicting that by 2012 forty percent of women in the current information technology workforce will have left their technical career paths to pursue other careers. In addition, women are showing little interest in joining information technology fields (Fonseca, 2007). Next, a review of gender patterns and leadership inequality issues offers a partial explanation for the lack of women in information technology leadership roles.

Gender Patterns in Leadership Positions

Literature on gender indicates several perspectives related to leadership inequality issues. Ozga (1993) discusses four primary perspectives in the literature. She summarizes the perspectives on gender inequality in leadership as stemming from: (1) biological determinism in which males have innate or "given" abilities; (2) the culture's socialization processes; (3) organizational structures; and (4) complexities involving socialization, the construction of masculinity and femininity, and definitions of leadership.

Appelbaum et al. (2003) also discuss four primary perspectives in the literature. They summarize the literature on gender inequality in leadership roles as having perspectives related to: (1) biological determinism; (2) gender roles' (male, female, and androgynous) links to leadership effectiveness; (3) causal factors that add complexities to the point of needing to assess the entirety of the potential leader's environment; and (4) attitudinal drivers leading to a redefinition of effective or ineffective leadership.

Morrison and Von Glinow (1990) discuss three primary perspectives for gender inequality in leadership roles. First, they summarize perspectives stating that deficiencies in women or underrepresented groups are responsible for their lack of leadership or management roles. The second perspective discussed is discriminatory actions and treatment by individuals. And, the third perspective discussed relates to theories that reflect structural, systemic discriminatory treatment.

Lemons and Parzinger (2007) found significant differences in gender schemas of women in information technology as compared to women in the general public. Gender schemas generally function covertly and refer to one's "cognitive structures of organized prior knowledge regarding the role expectations" (p. 97) of men and women based on their sex. Non-traditional schemas, those in which females fulfill male roles or males fulfill female roles, were found to be more prevalent for women in information technology than men in information technology and greater than both women and men in the general public. Non-traditional schemas also elevate the "sensitivity regarding women's rights and privileges, while traditional gender-schemas lead to more stereotyping of women" (p. 96).

When speaking of gender differences, the implication is often that the woman is the one who is different—that men set the standard—and the woman must change in order to adapt to the norms which are based on the behavior of men (Gilligan, 1982; Miller, Taylor, & Buck, 1991; Tannen, 1990). "Over the last two decades, the dramatic growth of women's studies has transformed the academic landscape. Theoretical structures constructed primarily by, for, and about men have been forced to take account

of different experiences, data, and methodologies" (Rhode, 1990, p. 7). Buzzanell, Sterk, and Turner (2004) also stress that genderedness depends on specific settings and one's context, historically and culturally, at a particular situated time. To analyze gender, in an applied communication context, one must realize that gender is enacted as it "tests ... creates ... and responds to contexts [being] situated in specific times and places" (p. xiv). Ongoing tensions exist regarding how to frame gender, discourse, and the context as these elements fluidly shift, interconnect, and shape diverse communication practices.

With this growth in gender studies has come new awareness of gender issues. Many of these issues fall under the umbrella of what is called the glass ceiling. The glass ceiling, a phenomena recognized and labeled in the mid-1980s, is reviewed next.

The glass ceiling. As previously mentioned, in the early 1970's, the U.S. workforce was starting to show signs of changing composition that would affect employment patterns over the next few decades. Increasing participation rates in the workforce for white women and minorities were expected to rise above those for white men. As this began to occur, additional projections were made for the year 2000, bringing about the Hudson Institute's report, *Workforce 2000* (Johnston, 1987). This report focused on the diversity of the workforce by the year 2000, stating that under-represented groups, specifically women and people of color, would continue to increase their presence in the workforce of the United States. This new group of workers would pose new challenges to those co-workers already in the workforce as well as to those in the managerial ranks. In addition, this new group of workers would serve as new customers to business (Morrison, 1992; Schreiber, Price, & Morrison, 1993).

The increase "of women and minorities in the workforce was not paralleled by a corresponding increase in their representation at upper management or executive levels" (Schreiber et al., 1993, p. 52). Obstacles that had previously limited access to women and minorities for acquiring higher level positions were continuing to exist. In 1986, two *Wall Street Journal* reporters introduced a phrase to the public to describe the obstacles, "glass ceiling." The "glass ceiling" referred then, and continues today to refer, to those invisible limitations preventing women from moving into top-level and executive positions in corporations and organizations (Hymowitz & Schellhardt, 1986; Schreiber et al., 1993). Hymowitz & Schellhardt's (1986) article pointed out, at that time, "how far women haven't come in corporate America" (p. 1).

Five years after the phrase "glass ceiling" appeared, the Glass Ceiling Initiative was introduced by the U.S. Department of Labor. This Initiative sought to identify and examine obstacles in organizations that prevented qualified individuals from progressing into upper-level positions. This was paralleled by legislation establishing the Federal Glass Ceiling Commission with the Glass Ceiling Act of 1991 (Jackson, 2001; Schreiber et al., 1993). The Commission, led by the Secretary of Labor, was charged with conducting a study and preparing recommendations on the elimination of obstacles preventing women and minorities from advancing into upper-level positions in business (Reich, 1995).

The Commission did confirm the "glass ceiling" metaphor, and as it has come to be known to African-Americans as the "concrete wall" (Chliwniak, 1997) or "concrete ceiling" (Baskerville & Tucker, 1991), and found there were indeed obstacles (Jackson,

2001) "only rarely penetrated by women or persons of color" (Reich, 1995, p. iii). These obstacles were classified into three groups by the Commission: (1) Societal Barriers; (2) Internal Structural Barriers; and (3) Governmental Barriers (Federal Glass Ceiling Commission, 1995). Limited recommendations were made for improving the climate of corporations toward women and minorities encouraging—rather than compelling— employers to undertake organizational changes that created a better working environment for women and minorities (Schreiber et al., 1993).

Few efforts were made documenting attempts by corporations and organizations for changing the glass ceiling conditions. Aware of concerns regarding the lack of documentation, the Human Resource Planning Society and the Center for Creative Leadership cooperatively embarked on a research project entitled the *Glass Ceiling Benchmark Survey*. Diversity in upper-level and executive positions was an interest of both groups and the Survey attempted to determine "the current state of organizational practice supporting workforce diversity and the movement of people of color and white women into higher management" (Schreiber et al., 1993, p. 53) in both profit and non-profit U. S. organizations.

During this time, Morrison (1992) was leading the GOLD (Guidelines on Leadership Diversity) Project and sought information from organizations known for having excellence in diversity practices. The GOLD Project was intended to follow-up to her previous study a few years before on "Breaking the Glass Ceiling." However, with the concerns regarding what efforts were being made by corporations, she expanded the goals of the GOLD Project to go beyond the current state of practice in corporations and

to include the identification of "the most promising tools and techniques now being used to foster diversity at the managerial level in organizations" (p. xvii) and the provision of guidelines in order to plan and implement diversity efforts in organizations. The results of these surveys are part of the discussions throughout this chapter.

The glass ceiling in leadership roles in education. The glass ceiling phenomena not only applies to the corporate world but any institutional hierarchy, including educational institutions. Male dominance has prevailed in the number of school administrators since 1905, except for the very early days of the elementary principal in which women dominated that role (Shakeshaft 1987). Early data on the sex of individuals in these roles is often unavailable as the National Education Association (NEA) and many other agencies ceased their categories for sex in their data collection by 1930 (Hansot & Tyack, 1981). Men were seen as leaders in the hierarchical, bureaucratic educational organization in the early 1900s, and females were seen as followers (Callahan, 1962; Lynd & Lynd, 1929; Tyack & Strober, 1981) as they dominated the teaching profession—a profession seen as appropriate for women with its lack of fair wage, an occupation of the "proper sphere," and a profession requiring one's "natural maternal" abilities (Shakeshaft, 1987).

Women made a few gains in superintendencies in the 1920s due to the fact women could vote in school elections (Shakeshaft, 1987). But after the 1930s, a variety of obstacles emerged for women pursuing superintendencies. These included male dominance, negative attitudes toward women, women were seen as workers with short-term commitments, married women were forbidden from teaching in many communities

(58% of school districts in 1942 forbade married women from teaching according to the NEA), males interacted more with other males leading to sponsorships (Ortiz & Marshall, 1988), and males were viewed as more capable in working with community issues and problems (Shakeshaft, 1987). During the 1960s and 1970s, the underrepresentation of women gained attention, but little movement occurred for women into administrative positions. The percentage of women in elementary and secondary school administrative positions in the early 1980s was less than the percentage in these positions in 1905, which was approximately five percent (Shakeshaft). While specific numbers are still very difficult to find, in the 2004 Digest of Education Statistics (National Center for Educational Statistics, 2004) it is reported that for 1999/2000 females held close to 44% of the principal positions in public schools, up from 35% in 1993/94. Female superintendents, however, accounted for only 14% of total superintendents according to the U.S. Department of Education (Glass, 2000).

Those in higher education information technology have a passion for the organization and tend to want to stay within the culture of higher education when seeking other positions, according to Katz et al. (2004). Some argue that the movement of people, often minorities, into different administrative positions within colleges and universities reflects organizational decision-making patterns related to not only meeting staffing needs, but also affirmative action and equal employment opportunity goals. Sagaria (1993) studied the mobility of female and male administrators *within* particular higher education institutions, intrainstitutional, as well as *between* higher education institutions, interinstitutional, reviewing mobility by area of specialty: academic affairs,

student affairs, and administrative affairs. Few conclusions could be reached regarding interinstitutional hirings and the movement of people within the three administrative groups. Intrainstitutionally, between 1969 and 1980, "women were promoted at a slightly higher rate than men within institutions" (p. 460). The question arises as to if these internal promotions and moves could perhaps be viewed as "political moves" as males continued to outnumber females significantly in administrative positions. Politically, the promotion of females within institutions more often than males magnifies the image of meeting affirmative action goals, and is also perhaps less threatening to males as they are already familiar with these women versus hiring unfamiliar women from outside the institution. Hiring and promotion decisions can often be understood as an expression of those individuals in power positions performing and endorsing institutional goals (Sagaria, 1993). Interesting to note, is that during the decade of Sagaria's study, major affirmative action efforts were taken by the federal government.

It has become more accepted for women to hold leadership positions in higher education institutions. While women certainly had the capabilities to hold such positions historically, men generally have held the roles of manager, leader, administrator, provost, and president. Higher education institutions must embrace diversity and be open to learning from female administrators rather than expecting female administrators to conform to traditional patterns and behaviors (LeBlanc, 1993). Heward (1996) states: "There is no single barrier or 'glass ceiling' that can be shattered. Rather the deeply institutionalized values of the hegemonic masculinities dominant in higher education

accumulate in the careers of women and men to increasingly privilege men and disadvantage women" (p. 17).

<p style="text-align: center;"><u>Leadership Styles of Men and Women</u></p>

In the context of understanding opportunities and obstacles related to women leaders, one must also understand the various leadership styles and the phenomenon behind the identification of certain styles with males or females. A large amount of research in the management literature demonstrates men and women managers and leaders have comparable traits, motivations, values, leadership styles, and skills, and that women perform as well as or better than men managers (Donnell & Hall, 1980; Freedman & Phillips, 1988; Greenhaus, Parasuraman, & Wormley, 1990; Offermann & Armitage, 1993; Tsui & Gutek, 1984). However, despite these similarities women are perceived as different and thought to be less likely to have the features and qualities, as are attributed to their male counterparts, to be successful managers (Brenner, Tomkiewicz, & Schein, 1989; Donnell & Hall, 1980; Freedman & Phillips, 1988; Heilman et al., 1989; Powell, 1988, 1993).

Another stream of research finds there are existing differences between the sexes and that these differences in leadership style often "favor women (Helgesen, 1990; Rosener, 1990) and validate a 'woman's way' of leading" (Maier, 1999, p. 87). Identifying "female" approaches to leadership has the inadvertent result of confirming existing gender stereotypes and not challenging the masculine-biased effect, its products, and the organizations in which they operate (Maier).

As a result of the processes related to organizations becoming gendered, administrative leadership positions are often not seen as careers compatible with traditional female roles. Research suggests that those who look at the world androcentrically—male versus female—divide the world into two types of behavior. One type of behavior is that of competence, associated with males and the other is female behavior, requiring females to choose between competence or femininity (Oller, 1979; Shakeshaft, 1987). Next, a closer look at styles and traits of male and female leaders occurs.

General Leadership Styles and Theories

Some suggest the study of leadership in higher education presents a more problematic situation than studying it in other organizations. With ambiguous goals, dual control systems, "conflicts between professional and administrative authority" (Bensimon et al., 1989, p. 7), and a variety of constituents with many purposes, higher education organizations face many challenges. Traditionally, the study of leadership can be grouped into six overlapping categories. The first category is trait theories, in which certain characteristics of successful leaders are identified as contributing to their success. Trait theory in organizational leadership posits desirable traits are those associated with men such as boldness, courage, strength, and confidence (Birnbaum, 1988; Nidiffer, 2001) and privilege rests with this dominant group.

Many contemporary leadership theorists reject trait theory. Studies fail to identify a "single set of traits that predicts effective leadership in all circumstances" (Nidiffer,

2001, p. 109). Thus, to many evoking traits as determining successful leaders has little meaning or relevance.

The second category is power and influence theories, which identify sources and amounts of power available to leaders and analyze the use of the power (Bensimon et al., 1989). "In higher education men hold the preponderance of senior positions and therefore have access to more legitimate power (office held), more resources (reward power), and the capacity to hire and fire (coercive power)" (Nidiffer, 2001, pp. 109-110). In higher education with its autonomous environment, expert (perceived expertise) and referent (followers identifying with the leader and caring for the leader) power are often considered more effective in managing institutions (Birnbaum, 1988; Nidiffer). Power is used in different ways by men versus women (Chliwniak, 1997). Men often perceive power as something a person has or is entitled to, thus making that person a leader. Women often believe that leaders increase their power through the empowerment of others (Chliwniak; Nidiffer). Fennell's (1998) research found that in principalships, traditional bureaucratic power is viewed as "'power over' [others. As women have entered positions of principalships,] 'power through' and 'power with'" (p. 47), through the empowerment of others, is the conceptual framework of many women principals. "For women, power used to help others strengthens relationships, while power used to control others damages relationships" (Shakeshaft, 2006, p. 506).

The third is behavioral theories that consider leaders' roles, behavior, and patterns of activity (Bensimon et al., 1989). Democratic styles generally provide higher productivity levels. Autocratic taskmasters are usually ineffective leaders. In higher

education participatory leadership is preferred as it is viewed as more compatible with the academic culture (Nidiffer, 2001).

Fourth, contingency theories stress situational factors and their importance to the task. Effective leaders must be able to adapt to the circumstances or particular environment of an institution. Fifth, cultural and symbolic theories try to understand the influence of leaders in maintaining or promoting beliefs and values that provide meaning to the organization. The rituals of the institution, stories regarding its past, humor, and myths associated with the institution are often very important for leaders to promote and build upon. Finally, cognitive theories review leaders' roles and leadership as a social attribution in helping people understand the world. Cognitive leaders attribute the credit for successes to internal causes such as effort and ability of staff while pointing to external causes, such as poor luck or the complexity of the task, as reasons for failures (Bensimon et al., 1989; Nidiffer, 2001). Each of these categories offers in-depth analysis and perspectives to leadership in higher education as well as information technology organizations. Each category brings out certain attributes needed by leaders.

Unfortunately, the attributes that are perceived as characteristic of successful managers and leaders are those that the socialization process has taught males to possess and display (Brenner et al., 1989; Heilman et al., 1989; Schein, 1973, 1975). Korabik (1990) proposes that leadership style must be viewed as a function of sex-role orientation, socialization, rather than biological sex since researchers have failed to separate biological sex from sex-role socialization in their designs.

Stereotypically males have been seen as aggressive, independent, unemotional, competitive, active, dominant, independent, objective, self-confident, logical, worldly, and in general more skilled and competent than females. Females, stereotypically, have been seen as demonstrating the opposite traits: less self-confident, less analytical, less emotionally stable, less independent, less consistent, possessing less leadership skills, more emotional, and in general less skilled and competent than males (Broverman et al., 1972; Heilman et al., 1989). Managerial competency, as rated by subjects in a hypothetical situation, was more often identified with male managers than females (Nieva & Gutek, 1980). However, Powell (1993) suggests that in real life situations, the gender stereotypes tend to be nonexistent as female managers' subordinates become familiar and comfortable with them.

Jones (1986) found women college administrators over forty years of age differed from their younger counterparts in that they tended to be more collaborative, had a focus on participative decision making, and emphasized a sharing of power. Young women administrators reflected management styles with centralized decision making and were characterized by task-oriented, male characteristics. These findings suggested the differences in female leadership styles may have been caused by the difference in experiences during the indoctrination into the field of educational administration at that time. Younger female leaders were exposed to an environment some consider more receptive to females and thus had developed different leadership styles than older females who had experienced a more restrictive, male-dominated learning and working environment (Jones).

Countering the stereotypic ideas that men make better leaders and women do not have the characteristics and style needed to be effective as a leader, Eagly, Karau, Makhijani (1995) found evidence that male and female leaders did not significantly differ in their effectiveness, when effectiveness is understood to be "leaders' facilitation of a group or organization's ability to meet its goals" (p. 125). Their meta-analysis also found several circumstances that tend to create differences in the effectiveness of males and females as well as findings related to many organizations favoring management styles that were less autocratic. Autocratic styles are generally associated as a favorable trait being held more by males than females.

Eagly et al.'s, (1995) results also indicate that male and female leaders "are differentially effective in many settings" (p. 140). Many factors affect the effectiveness in these settings. Such as, one's training and skills and most importantly, the defined position in terms of social-role theory. Social-role theory maintains that generally people are expected to engage in activities, or acquire leadership positions, that are consistent with what society defines as "compatible" with their gender role. Females in leadership positions that are traditionally defined as masculine in nature, or vice versa, find more challenges than when gender aligns with the socially defined expectations for certain positions bringing agreement.

Also found from Eagly et al.'s (1995) meta-analysis, was the tendency for many organizations to favor management styles that were less autocratic. Generally, in the past, having an autocratic style was thought of as a favorable leadership trait held more

by males than females. Participative styles, generally attributed more to females than males, are becoming more widely used and favored.

Bensimon et al., (1989) discuss universities and leadership within higher education using Bolman and Deal's (1984) perspective of frames. Each frame complements the others. Leadership within universities under the structural frame, or as bureaucratic organizations, is characterized by rational knowledge, decision-making, and power beyond that of the average person and such roles are often seen as central, even heroic, positions in the organization. Leadership within universities under the human resource frame, or collegium organizations, is characterized by considering the institution a community of scholars or equals, at least with faculty. Elements and actions are generally defined and implemented for the good of all with input and involvement from many during the decision-making process.

Leadership within universities under the political frame, or as political systems, is characterized as expertise in negotiation and mediation as support is sought and built from constituents and strategies are set for defining and accomplishing goals. Leaders in this type of institution have the information necessary and are sensitive to the release of information to the campus depending on the disposition of the campus climate at any particular point in time. Leadership within universities under the symbolic frame, or as organized anarchy, provides a function of facilitating ongoing processes. This leadership is well informed and persistent with ideas, allowing others credit for success, and is selective about intervention. Leadership within universities under the cybernetic system deals with an integration of the four frames into a comprehensive framework for

universities. Transactional leadership involves engaging with transactions with internal subsystems and the environment responding to various disruptions by using subtle intervention to institute change in order to maintain a balance with the institution and its environment. This can involve a constant rebuilding of institutional systems. Transformational leadership seeks opportunities in which significant change can be made to the institution attempting to earn the support of followers for the change (Bensimon et. al., 1989; Birnbaum, 1988).

Dealing with moral dilemmas often occurs for those in executive leadership positions. The socialization of males and females offers explanations for differences in the way males and females deal with such dilemmas. Males are more likely to approach moral issues in terms of rules, justice, and individual rights whereas females tend to use criteria related to inclusion, one's feelings, and consideration of outcomes based on impacts to relationships (Bussey & Maughan, 1982; Gilligan, 1982). For many, a woman being sensitive to feelings and weighing decisions based on their impact on relationships is seen as a weakness, especially if utilized in an executive leadership role.

Shakeshaft (2006) discusses several themes from studies of female leaders that have emerged as characteristic of their leadership styles. Social justice is one theme as women discuss 'making things better' or having a transformative style. Spiritual themes emerge from Shakeshaft's review as women are more likely than men to discuss spiritual dimensions of leadership. Relational themes go back to Gilligan's (1982) work as women generally value relationships more than men. Instructional importance, another theme, manifests itself in that women administrators are more likely to introduce and

support staff development, instructional workshops, and encourage innovation. A final theme, striving for balance, relates to women's balancing personal and professional needs and responsibilities.

The gender context of the workplace makes a difference in leadership styles. "Women are more likely to be more interpersonal than males in female-dominated workplaces, but equally interpersonal in male-dominated workplaces" (Shakeshaft, 2006, p. 507). In female-dominated workplaces and organizations, women are equally task-oriented as men. In male-dominated workplaces and organizations, women are more task-oriented than men (Eagly & Johnson, 1990; Gardiner, Enomoto, & Grogan, 2000).

Gender socialization theory predicts adults bring differing ethical values to their labor roles. While conflicting results regarding the validation of this prediction exist (Dawson, 1995), a better understanding might be gained by listening to males and females explain how they make ethical decisions. Dawson found women more sensitive and caring, taking more creative approaches to problem solving, building more effective relationships, creating greater trust interpersonally, and being more supportive and understanding as a supervisor. Likewise, several of these traits, such as women being thought of as less decisive or slower to make decisions, could be construed as dysfunctional in traditional corporate environments.

Other research indicates men are oriented toward rules and one's rights and women more oriented toward caring (Bussey & Maughan, 1982; Gilligan, 1977). These perceptions and results of research are often perpetuated in the media. Women continue to be presented in movies, television programs, advertisements, and books as less

competent than men (Faludi, 1991). Females are more often shown in personal relationships, caring about others, attractive, and less likely to be working outside the home; whereas males are more often portrayed as independent of others, having higher status positions, more knowledgeable, and overcoming physical challenges (Powell, 1993).

Women leaders appear to emphasize process and general importance of relationships whereas men leaders emphasize outcomes, results, and the instrumentality or importance of the relationship (Helgesen, 1990). Women seek others' input, making subordinates feel included and creating open communication. Research indicates this sharing of power and information is very successful in the middle management arena, but not necessarily a trait for an executive leader (Helgesen; Rosener, 1990).

Women's interactive, transformational styles may represent an important approach to leadership as organizations become flatter, more diverse, team-based, globalized, and networked throughout the global economy (Adler, 1993; Helgesen, 1990; Rosener, 1990, 1995). Helgesen cautions that care must be taken that this style of leadership is not seen as a generic "woman's style" leading to new stereotypes.

Eagly and Carli (2007) discuss the demands of leadership roles promoting similarities between female and male leaders. In general, women leaders have a more transformational style and are more democratic, participative and collaborative in their styles. They found erosion in this tendency, however, when women leaders are in male-dominated roles. The rareness of women in senior management roles tends to cause them to have leadership styles typical to males.

Anderson and Buzzanell's (2007) work with a Macintosh computer user group found tension existing between instrumental and relational concerns, particularly with women leaders. "Women leaders are expected to engage in a complex and shifting mixture of identities that invoke their statuses as women (seen as primarily relational) and as leaders (seen as primarily instrumental) separately in some cases and simultaneously at others" (p. 38). Difficulty arises in determining how and when to shift more toward one identity or the other.

Sargent (1981) and Korabik (1990) suggest moving toward an androgynous style of leadership in which male leaders use more compassion and relationship-oriented actions and females use more directive, assertive actions. Dawson (1995) also suggests the best results for organizations may come from a blending of traits for both sexes.

"Because of gender bias and the way in which it influences [a person's] evaluation in work settings, being competent provides no assurance that a woman will advance to the same organizational levels as an equivalently performing man" (Heilman, 2001, p. 657). Heilman discusses *descriptive* and *prescriptive* processes and procedures that often cause a lack of advancement of women who are often equally as competent and performing in an equivalent manner as men in similar positions. In *describing* successful male managers, one often characterizes them as aggressive, decisive, independent, and forceful. Whereas women characterized in this manner, are often disliked, thought of as "bitches", and not given similar status and rewards as males. Heilman labels these achievement-oriented traits as "agentic." Social and service-oriented traits, termed "communal", represent the characterizations in which women are considered to excel

above men. These traits include how sympathetic, helpful, kind, and concerned with others a person is. Men excelling in these traits are often seen as "soft" or "too easygoing." Agentic and communal elements can be viewed in either a descriptive or prescriptive context. Thus, *descriptive* processes describe what women and men are like, often based on stereotyped conceptions. *Prescriptive* processes specify how women and men should be, norms regarding behaviors that are suitable for each.

Consequences of gender-stereotypic *prescriptions* for women in the workplace are actions that penalize women for being competent or not behaving as one would expect she should. Even though women are expected to be competent, they are generally not supposed to be *more* competent than men in many situations. Resulting actions and behaviors toward women in a prescriptive context might be those of personal derogation, dislike by colleagues, or exclusion from certain groups or communications. Due to these actions occurring, women often face devaluation of performance during the performance review process as well (Heilman, 2001).

This discussion has addressed general leadership styles and traits resulting from investigations done by a variety of researchers. Several patterns were evident in leadership styles and traits for men and women. Next, a specific review of CIO leadership styles and traits occurs.

CIO Leadership Styles and Traits

The first CIO labeled positions in higher education appeared in the late 1970s. Before that the position was usually labeled as a director position, dealing more with data processing, or there were multiple directors, each over their particular area of expertise.

The need for a more encompassing position occurred as academia embraced the arrival of the microcomputer and accompanying networks during the 1980s. Someone was needed to manage and coordinate additional services and more departments within the information technology division at institutions. Today, the CIO concept still lacks clear definition. "It has a variety of meanings, manners of being defined and operationalized, and methods for integration with the campus infrastructure, accompanied by an equally diverse set of realistic and unrealistic expectations" (Hawkins, 2004).

In higher education, the CIO needs to have the skills to lead an ever-changing IT division whose impact is critical for the operation of the institution. The CIO position has evolved from performing as a technical person managing the division to that of an "education and business executive assuming the technical post" (Brown, 2006, p. 48). As the CIO position has become more strategic in institutions, leadership skills must include excellent communication skills in order to bridge the IT world and educational world. Brown found the top two characteristics of those CIOs rated as "effective" in higher education to be that of (1) effective oversight of expensive contracts and vendor relations, and, (2) effective provision of IT support and service to the campus. The CIO must also have strategic business and IT knowledge, interpersonal skills, and political savvy. Brown also found the majority of CIOs in higher education to have worked predominantly in higher education throughout their careers, with the majority having been in the information technology field.

This compares with Woodsworth's (1987) survey of twenty years ago reflecting the higher education CIOs' skill areas needed. Those skill areas were (in order of mean

scores, highest to lowest): major hardware/software purchases, formulating policies, formulating long-range goals, annual budget and allocations, negotiating initial contracts, capital funds and budgets, allocation and use of funds within responsibility centers, and contract renewal negotiations.

Cartwright (2002), as President of a Kent State University, describes leadership traits she looks for in a CIO. These include: a person with proven leadership skills (identifying and communicating vision, inspiring behavioral and cultural changes); strong management skills (strategic planning, budgeting, problem solving); in-depth technical knowledge and skills; able to keep abreast of IT policies, issues, trends; has a grasp of general university operations and institution-specific culture; understands local, state, and national higher education environment; and has excellent communication skills.

Computerworld's Premier 100 IT Leaders for 2007 (primarily non-educational leaders) identified seven essential ingredients or skills that helped them achieve their goals. These were: (1) leadership ability; (2) communication skills; (3) strategic thinking (planning); (4) the art of diplomacy; (5) finance abilities; (6) technological abilities and savvy; and, (7) a knowledge of industry (yours and others; Tennant, 2006).

Katz et al.'s (2004) study of the condition of information technology in higher education found the senior-most information technology leaders ranking the following, in order of importance, as critical to their success: (1) ability to communicate effectively; (2) strategic thinking and planning; (3) understanding business processes and operations; (4) thorough knowledge of technology options; (5) ability to influence/salesmanship; (6) negotiation skills; and, (7) technical proficiency. Those who were members of the

executive body or cabinet had more interactions with the institution's governing board, utilized planning models and methods more, and participated more often in general institutional decisions.

Zastrocky and Schlier (2000), both researchers for the Gartner Group, Inc., state the CIO in higher education "has two distinct roles within two different organizational units. The CIO is both the leader of the information systems (IS) organization and a member of the CEO's executive management team" (p. 53). The CIO must go beyond oversight of the information technology division to contributing and working with the executive team to develop and manage business strategies. In order to do this, the CIO must have knowledge of issues affecting the entire higher education environment and institution. These include: (1) politics and public relations; (2) finance; (3) marketing; (4) CEO challenges; (5) general, casual interactions with the Executive Team; (6) general strategies and business drivers affecting higher education; and (7) becoming a source of information for others.

Today, Zastrocky (2007) has refined those recommendations to include skills related to marketing, technology, higher education business knowledge, and leadership. The CIO uses these skills as a consultant and visionary to others. Today's CIO must be a Versatilist, meaning someone who has a depth of skills, understands the scope of roles and assignments they must fill, and can deal with a variety of people and change.

The leadership skills generally identified as effective for CIO positions in higher education are ones males have typically been advantaged over females in acquiring through the socialization process, have been advantaged to through the processes and

functions of gendered organizations, have been advantaged to through the jurisdiction over artifacts, and have been advantage to through societal expectations regarding males fulfilling certain roles. Women face obstacles educationally, socially, politically, and economically in acquiring and demonstrating competence and skills in leadership areas. Because of gender bias and gendering in organizations, females who do have similar skills to males have no assurance of advancement within organizations (Heilman, 2001).

Women aspiring to higher education information technology CIO positions face obstacles similar to those faced by women aspiring to similar positions in the corporate world. The review of the literature thus far has yielded several perspectives regarding the origin and reproduction of such obstacles. Next, a closer review related to conceptualization frameworks for common obstacles occurs.

Obstacles Women Encounter in Achieving Educational Leadership Roles

Conceptual Structures, Frameworks, and Perspectives

There are many structures or frameworks within which one can identify and conceptualize obstacles often faced by women. Focusing on research published since 1974, Adkison (1981) utilized four descriptive categories of obstacles: (a) gender stereotyping and socialization; (b) career socialization and one's mobility; (c) organizational structure; and (d) women's social power and status within society.

Other researchers have conceptualized obstacles as internal versus external (Hansot & Tyack, 1981; Schmuck, 1976; Shakeshaft, 1987). One often thinks of internal obstacles as those that can be overcome by the individual changing something about herself and thus becoming more able to gain advancement into leadership positions.

These obstacles often result in blaming "the victim for her lack of achievement" (p. 82). Examples of internal obstacles are the beliefs that women are not good problem-solvers or are too sensitive to be in leadership positions and lack self-confidence or have a low self-image (Schmuck, 1976; Shakeshaft, 1987). Shakeshaft argues that the use of internal obstacles as an explanation is inadequate since it is our societal structure and the organizational systems it forms that are the causes of these beliefs often leading to inequities. That said, internal obstacles then become external obstacles related to the social structure, socialization of females and males, and stereotyping (Hansot & Tyack, 1981).

Shakeshaft (1987) describes external obstacles, such as overt and covert sex discrimination practices, as those that can be overcome by social and institutional change. Many of these result from the orientation that there is a sexual hierarchy in which males are at the top and females are at the bottom.

Regardless of how one classifies obstacles faced by women seeking educational leadership positions, this phenomenon occurs in a hegemonous society focused on male-dominance. Shakeshaft (1987) uses a third conceptualization in identifying obstacles, beyond that of internal or external. That is the conceptualization of society being androcentric and male-centered. She notes that male hegemony is at the root of most obstacles and dominates over most researchers' explanations. These explanations are made according to male-defined standards as one experiences and looks at phenomena through a male lens. In this case, the victim is still blamed for not conforming to the ascribed male-dominated standards. These obstacles occur in the form of overt and

covert sex discrimination practices present during the hiring process, in the job performance review process, and throughout the daily performance of tasks (Shakeshaft, 1987).

Ortiz and Marshall (1988) examined historical records, research reports, and school practices related to gender patterns in educational administration. They summarized their findings related to the male dominance of educational administration into four themes. These are: (1) teaching and administration of schools "have become separate but mutually dependent professions" (p. 123); (2) educational institutions have become hierarchical emphasizing efficiency, control, and scientific-management ideologies; (3) careers in educational administration depend on sponsorship, being placed in strategic career positions enabling one to move into higher positions, rather than competition; and (4) educational institutions have developed into structures that manage knowledge, discouraging discussions of gender and power issues.

Ortiz and Marshall (1988) state that sponsorship is necessary in educational organizations for career mobility. For women, this is problematic since teaching and administration each remains tied to gender. Available research shows males move into and through the administrative career path in greater numbers and larger proportions than females.

Some categorize obstacles as those created by corporate or organizational traditions and practices as compared to those created by behavioral and cultural traditions and practices (Oakley, 2000). Oakley found male executives more often cite the primary obstacles for women to be those obstacles that fall under organizational traditions and

practices; whereas, female executives more often cite obstacles faced as those related to behavioral and cultural traditions and practices.

Another framework within which to identify obstacles is that of sex discrimination. Williams (1992) discusses three forms of discrimination that contribute to women's underrepresentation in predominately male occupations. Legal discrimination manifests itself via laws or institutional rules preventing the hiring or promotion of women into particular positions. Informal discrimination exists through sexual harassment, male co-workers' hostility toward females, and sabotage. Cultural discrimination occurs frequently for women in nontraditional positions as they feel stigmatized by clients when coming in contact with the public.

Sex discrimination in employment has been illegal since the passage of Title VII of the Civil Rights Act of 1964. Under this women are protected from discrimination in hiring practices, job assignments, promotions, transfers, and dismissals along with other employment-related decisions. The Equal Pay Act of 1963 requires equal pay for equal work, regardless of one's sex (Lee, 1993). However, these laws "do not guarantee a discrimination-free work environment or favorable court decisions" (Fagenson & Jackson, 1993a, p. 104). In fact, women generally have won a relatively low percentage of the discrimination cases they have taken before the federal courts (Lee, 1993).

Obstacles can occur at the individual level, group, and/or organizational level. Employees may offend others through inappropriate jokes or comments, managers may assume leadership potential or lack of such potential for certain employees, and organizations may favor certain individuals over others in their recruitment efforts. "Like

almost everything else, obstacles are likely to change over time, and what was seen as

most critical just a couple of years ago may not be judged so important today "

(Morrison, Schreiber, & Price, 1995, p. 11).

One must keep in mind obstacles do not affect all women and, at times, can apply

to men, especially those in a minority (Baskerville & Tucker, 1991). The solution to

removing obstacles "for women lies in the provision of justice and equality for all,

regardless of race, sex, color, or creed" (LeBlanc, 1993, p. 41). One rarely finds

literature related to obstacles faced by white men in achieving career goals. Also,

obstacles identified may not be equally exclusive at all career stages. There may be

interaction and overlap between various obstacles, related to one's gender, and career

aspirations.

Catalyst's (2003) study on women in corporate leadership in the Fortune 1000

companies identified the following factors as holding women back from reaching the top:

> lack of significant general management or line experience (47%)
> exclusion from informal networks (41%)
> stereotyping and preconceptions of women's roles and abilities (33%)
> failure of senior leadership to assume accountability for women's advancement (29%)
> commitment to personal or family responsibilities (26%)
> lack of role models (18%)
> lack of mentoring (16%)
> displaying a behavioral style that is different than organizational norm (16%)
> (p. 16).

In the Glass Ceiling Benchmark Survey (Morrison et al., 1995), over 300 major

U.S.-based corporations were surveyed regarding the current state of the organization in

supporting workforce diversity and the progression of women and minorities into upper-

level and executive positions. Not-for-profit organizations comprised 13% of the respondents and reported fewer and less extensive obstacles to upward mobility. The top three obstacles identified by responding human resource professionals in the not-for-profit organizations were:

1. Lack of Accountability or Incentives – 82% identified this as the number one barrier for developing a more diverse workforce. Human resource respondents indicated their organizations lacked practices or mechanisms that encourage or discourage managerial behaviors related to performance appraisals, promotions, compensation, or other accountable actions that could lead to rewarding or not rewarding employees.

2. Traditional Managers Have Great Comfort with Their Own Kind – 80% identified this as the number two barrier for developing a more diverse workforce. This barrier allows traditional managers to maintain their exclusivity, filling positions not based on objectivity toward talent or performance required for the position, but on how comfortable the candidate makes them feel and how this person may or may not "fit in."

3. Ineffective Recruiting – 79% identified this as the number three barrier. The lack of effective recruiting efforts that reach out and are inclusive of women and minorities creates a barrier.

Service organizations included the same three obstacles in their top three and manufacturing organizations included the first two with the third being: the organization having a risk aversive culture, unwilling to take risks and offer opportunities to those they are unsure of, such as women and minorities (Schreiber et al., 1993). Findings from the 1995 Glass Ceiling Commission's work indicate it will be decades before significant

change occurs in the percentage of women in senior management positions (Morrison et al., 1995).

Jackson (2001) studied women in middle management positions and their perceptions regarding organizational barriers to career advancement. She found the participating women's perceptions reflecting several barriers still in existence to career advancement in their particular organizations. The participants also indicated a lack in their organizations of successful implementation of programs and practices to assist women in overcoming barriers, thus minimizing their chances for advancement.

Identifying obstacles and educating others, especially those in power positions, as to the obstacles individuals encounter in seeking corporate or educational leadership positions, is a major step in moving toward the elimination of such obstacles. "Breaking boundaries involves naming obstacles to women's participation in higher education, as well as testifying to the consequences of power relations based on social class, race, sexualities, age, disabilities, and ethnicities" (Morley & Walsh, 1996, pp. 3-4).

In a recent survey by Catalyst (2003), a non-profit research group, male executives thought opportunities for women in leadership roles had greatly improved while women executives felt they had not. A person's vision of the world and how things should be is often a hegemonic vision—one he or she has without realizing its sources or impacts. Not only do organizational structures create obstacles, but behavioral and cultural factors also account for the creation of obstacles whether one is in a corporate structure, an educational structure, or some other structure. How one classifies and views obstacles or even identifies whether obstacles exist relates to one's cultural, political, and

social values and background (Ramsey & McCorduck, 2005). A variety of general obstacles exist for women aspiring to leadership roles. Focusing on three primary ones, long work hours conflicting with family responsibilities, few female role models, and the good-old-boy networks, Ramsey and McCorduck (2005) question if perhaps these obstacles are not "more socially acceptable (or less troublesome)" [responses to questions and surveys] "than trying to explain the difficulty of holding on to a professional identity in the face of systemic stereotyping, dualism and devaluation" (p. 13). Adding to these general obstacles are the stereotypical explanations of lower performance ratings for women, fewer promotions, and lower pay than men.

Next, the literature is reviewed regarding specific obstacles women face in seeking leadership positions. First, obstacles related to organizations and their processes and practices are discussed. This is followed by a discussion of obstacles related to behavioral and cultural practices and processes. The processes and practices within organizations and within the culture that allow for both categories of obstacles to exist assist in the creation of gendered organizations.

Organizational Obstacles Women Face in Achieving Leadership Positions

There are many obstacles identified as being created by the structural functional aspects of organizations. Many identified are also created by policies, procedures, and rules endorsed and enforced by the organization. Interwoven into these aspects are issues of gender and male hegemony. Common organizational obstacles, as identified in the literature, will be briefly discussed.

<u>Lack of training or career development support.</u> Shakeshaft's (1987) review of the literature found little support offered to women in order to pursue educational administrative positions. Frequent negative cues were given by family and work groups regarding such endeavors. Not only did women find a less supportive environment before and during their educational process, but following it as well once they had their degrees (Campbell & Newell, 1973; Oller, 1979; Schmuck, 1977).

Once on-the-job, women are often not given the opportunity to gain senior management experience that allows them to move into top executive positions in the organization. Smaller institutions are more likely to have women in administrative positions whereas larger institutions are more likely to have men dominating administrative positions (Jones, 1986). Research indicates those women occupying senior management positions are often in staff support areas such as human resources, public relations, or those positions considered "people oriented"; whereas men are often in positions considered "task oriented" (Catalyst, 1990; Jones; Lublin, 1996; Powell, 1988).

Goodman et al. (2003) found a positive relationship between the percentage of women in lower management levels and those in top management levels. They noted that the number of women in the lower management line positions is still not sufficient to close the sex segregation gap at the top levels. Their results also indicated women were more likely to have top management positions in those organizations that were non-manufacturing industries.

Lack of or ineffective promotion policies or programs. Promotion opportunities and understanding the need for diversity within an organization by all employees are essential if more women are to be given opportunities for executive leadership positions. As women managers became more prominent in the late 1960s and early 1970s, few expected to eventually become senior or executive managers. Affirmative action programs were not part of organizations' policies, making this first generation of women managers hesitate even more about having goals that included achieving top executive positions (Morrison, 1992). A survey by Catalyst (1990) in the late 1980s indicated only four percent of the companies interviewed took steps to promote women into "line positions," those managerial positions that lead to executive levels, and concluded that most companies lacked effective policies or programs to address the problems associated with the promotion of women into the senior ranks.

The Glass Ceiling Benchmark Survey reviewed the current state within 300 major for-profit and not-for-profit U.S. corporations and organizations of the support for workforce diversity, specifically the promotion of women and people of color into higher management positions (Schreiber et al., 1993). Results indicated less effectiveness in achieving diversity in the management and executive levels than in the lower ranking workforce in these organizations. Indications were that women and people of color have faced and do face limited opportunities and advancement into management and leadership positions in the organizations taking part in the study. Participating not-for-profit organizations indicated more effectiveness in achieving diversity in higher ranking positions and more often indicated diversity was important to their organizations than the

participating for-profit organizations. The diversity practice ranked highest in importance by the respondents was the practice of organizational policies against racism and/or sexism. However, one must realize this practice offers limited support for diversity as there must also be efforts by the organization for the development and promotion of women and minorities as well as retention (Catalyst, 1990; Schreiber et al.). The two most selected obstacles by participants from both types of organizations, from a list of eighteen obstacles to diversity in executive and managerial positions, were (1) "Traditional managers (white males) are already in place, limiting access to women and people of color because: They have greater comfort with their own kind;" and, (2) "Lack of accountability or incentives for developing diversity" (Schreiber et al., p. 61).

Those companies recognized as more progressive in promoting women effected change within the company much faster than those less progressive. These companies stood out as having policies and programs that facilitated the promotion and recognition of women into upper level positions (Eyring & Stead, 1998; Morrison et al., 1995).

Lack of or biased performance-based feedback. Receiving performance-based feedback allows one to complete the tasks associated with one's position more effectively. Women are often provided less feedback as compared to male colleagues, which may assist in creating additional obstacles (Catalyst, 1990; Oakley, 2000). Nieva and Gutek (1980) found males tend to be privileged in performance evaluation situations.

Heilman (2001) states that for women in the workplace the consequences of the use of gender-stereotypic descriptions of women's performance, based on male norms, are often devaluation of her performance either informally by comments made and

actions taken, or formally during the performance review process. During the performance review process, Heilman has found evaluation criteria utilized to often be ambiguous and the actual evaluation process to contain a lack of structure that hinders women more than men. Women are also hindered more than men in that their supervisors often credit ambiguous sources for women's successful performance and ambiguous reasons for women's successful upward mobility. For example, a supervisor may suggest that affirmative action guidelines led to someone's upward mobility when it was really the woman's hard work and excellent performance. The woman is denied the credit deserved for her successful performance. These allusions lead to many implications and effects in the workplace for other women as well as for men.

Unequal compensation practices. The gender gap in earnings is still present in the American economy. "Women continue to earn less than men regardless of how you measure it, across time, throughout the life cycle, in all race and ethnic groups, within all education categories, within detailed occupations, and across cultures" (Roos & Gatta, 1999, p. 120). This conclusion was reached by Roos and Gatta after reviewing recent literature, recent statistics, and explanations for and debates about the earnings gap. Two distinct time periods were found in the published data. The first, 1955 to 1981, indicated the median annual income of women working year-round, full-time was "64% that of comparable men in 1955 and 59% in 1981" (p. 95). The earnings ratio then rose after 1981 to 71% in 1995. Indications are that after this time period there has been a slight decline.

Studies continue to confirm that women at senior or executive leadership levels in the U.S. corporations and organizations can still earn up to 50% less and receive less in perks and stock options than male counterparts (Fagenson & Jackson, 1993a; Goodman et al., 2003; Lublin, 1998; Shafer & Trautlein, 2007). The ratio gaps in earnings for male and female faculty have changed little over the twenty-five years the American Association of University Professors has measured such. For 2003-2004, women faculty across all ranks and all institutional types, earned 80 percent of what men earned (Curtis, 2004). In general, at four-year institutions, women earn less, hold positions of lower-ranking, and are less likely to have tenure (AAUW, 2004; Addams, 2005).

Tokenism and isolation. Women who are given opportunities to achieve executive leadership positions may often be seen as tokens. Tokens are individuals who comprise less than fifteen percent of the entire group, are frequently hired or given opportunities as a result of external pressures, and are generally not accepted by their peers (Kanter, 1977; Karsten, 1994; Offermann & Armitage, 1993). The ratio of men to women or women to men in organizations influences group behavior within the organization. Groups with skewed sex ratios tend to display different behaviors between "dominants" and "tokens." Those considered "tokens," more often women, face increased on-the-job pressure and scrutiny due to their visibility contrast than those considered dominants (Kanter). This results in a boundary distinguishing behavior in which the dominants seek to exclude the tokens, often through isolation. Males' may display off-color humor, sports conversations, or other dominant topics or activities in

attempts to exclude the tokens—women or minorities. Typically a 35-40% mass of token membership is needed to overcome boundary distinguishing behavior (Karsten).

Jacobs (1989) posits that men in female-dominated occupations often encounter similar obstacles and difficulties that women face in male-dominated occupations. Reskin (1988) maintains that any dominant group in an occupation will utilize whatever power is available to them to preserve their privileged position. William's (1992) research indicates that "the crucial factor is the social status of the token's group—not their numerical rarity—that determines whether the token encounters a "glass ceiling" or a "glass escalator" (p. 263). In her study, many of the males "perceived their token status as males in predominantly female occupations as an advantage in hiring and promotions" (p. 256). Many males were more often urged or recruited, once in positions traditionally held by females, to move into the track of becoming an administrator or pursue higher level positions within the profession. Men in nontraditional occupations are more often construed as a positive difference whereas women in nontraditional occupations are less often construed as a positive difference.

Maume (1999) also found evidence of a glass escalator for men in occupations dominated by women. The higher the percentage of women in an occupation increased the likelihood that males in that occupation would move into supervisory positions.

A 1990-91 study conducted by the U.S. Labor Department found many companies used recruitment companies and practices that failed to pursue qualified candidates who were not white men. This is another method of excluding people considered tokens. Many companies will often rely on word-of-mouth and employee

referrals in their recruitments. Females and minorities are generally excluded in such

efforts (Garland, 1991).

Overall, organizational and institutional contexts are lacking in appropriate

governance approaches to sex-equity policy creation and enforcement. As of the late

1980s, "analyses of sex-equity policy suggest[ed] that it [had] not yet achieved the status

of morally legitimate policy; instead, it continues to be viewed as a vehicle for providing

a compensatory benefit to a special interest group" (Ortiz & Marshall, 1988, p. 136).

Policy makers, implementers, and enforcers "have failed to see that placing the burden of

making the necessary changes on the organizational systems that have contributed to the

under-representation of women in administration does not constitute a promising

approach to achieving sex equity" (p. 136). Women are forced to work from within and

try to change systems that have enabled and encouraged sex structuring and the lack of

sex-equity policy creation or enforcement. Anything unacceptable to the dominant

bureaucratic group or influential political groups will be dismissed and rejected.

This discussion has focused on literature related to common organizational

obstacles women face in achieving leadership positions. Next, a discussion occurs of the

behavioral and cultural obstacles faced by women.

Behavioral and Cultural Obstacles Women Face in Achieving Educational Leadership
Positions

There are many obstacles identified as being created by the behavioral and

cultural phenomenon and practices. Interwoven into these are norms and issues related to

gendered organizations. Common behavioral and cultural obstacles, as identified in the literature, will be briefly discussed.

Behavioral double-binds. "A double-bind is a behavioral norm that creates a situation where a person cannot win no matter what she does" (Oakley, 2000, p. 324). For women in leadership positions, a typical double-bind might be situations in which they must be tough and authoritative (characteristics often attributed to men) in order to be taken seriously, yet if they act too aggressively they will be perceived as bitches. Double-binds have been used historically by those in power positions to oppress those lacking power, with women often being the victims. The femininity/competency bind is especially troublesome for women leaders since acting feminine is often associated with incompetence. In traditionally male fields, women are generally judged "competent and unfeminine or incompetent and feminine" (Shakeshaft, 1987, p. 113), having to choose between two identities creating conflict (Jamieson, 1995).

Many challenges are presented with this barrier as women leaders must speak assertively but not too assertively, dress and present oneself in a feminine manner but not too feminine so as to provoke and cause male rejection, or be very competent in one's position but not too competent so as to threaten the male hierarchy (Jamieson, 1995). Physical attractiveness can tend to work against women in leadership roles. Heilman and Stopeck (1985) found that attractive female managerial candidates were rated lower on their performance, received lower starting salaries, and received fewer promotions that did unattractive females or attractive males.

Females striving for executive leadership positions find such positions difficult to achieve as they are excluded from old boy networks, viewed as tokens, excluded from communications, and socially isolated. Attempting to get close to the decision-maker, to join in the social networks or prove oneself, can often trigger sex role conflicts and double-bind effects (Jamieson, 1995).

Fagenson (1990) tested four theoretical frameworks to determine in which framework or frameworks which of the variables (sex, level of the person in the organizational hierarchy, or both) influenced "individuals' perceptions of their possession of masculine and feminine attributes" (p. 205). The possession of feminine characteristics has typically been seen as damaging to one's career while the possession of masculine characteristics has been viewed as beneficial. In the person- or gender-centered theoretical framework, "attributes individuals perceive they possess vary according to their sex" (p. 204). In the situation-centered framework or the organization structure view, two situations exist in organizations—the advantageous situation and the disadvantageous situation. Advantageous situations are those positions in the upper levels of an organization that provide individuals with power while disadvantageous situations are those in the lower levels which offer little power to individuals. The third framework, gender-organization perspective, "suggests that an individual's sex and level make independent and linear contributions to the attributes that individuals perceive they possess" (p. 205). This framework is a combination of the first two suggesting that one's attributes are the result of both gender and their level in the organization with each making independent and linear contributions. The fourth framework is the gender-

organization-system approach. It again suggests individuals' attributes are a result of

both their level in the organizational hierarchy and their sex. But it suggests these are

nonindependent, nonlinear focusing on the multiplicity of interactions and variables. The

results indicated support for the gender-centered framework and the organization

structure framework. Femininity was related to a person's sex with women respondents

reporting more of a perception of femininity than men and masculinity was found to be

related more to those respondents in the upper levels of organizations. Women in upper-

level positions perceived themselves as appropriately filling the managerial role,

reporting more femininity than men in similar upper-level roles, and at the same time

reporting more masculinity than women in lower-level positions.

Thus, women often respond to these stereotypes through the creation of various

strategies to manage gender differences. Often they will emulate masculine images and

downplay their femininity (Gardner, Peluchette, & Clinebell, 1994; Larwood, 1991)

developing limited, business-like feminine behaviors that maintain their credibility but do

not extend to the point of challenging the stereotypes directly with male colleagues

(Oakley, 2000). This again leads to another double-bind as those who utilize this strategy

often simply blend-in and do not receive the recognition needed to receive promotions to

executive positions (Jamieson, 1995; Northcraft & Gutek, 1993).

Gender-based stereotypes and communication styles. Not only do women face

many obstacles or hurdles in the corporate or workforce pipeline in pursuing technology-

related careers, but girls have also faced many obstacles or hurdles in the educational

pipeline regarding technology careers. Negative stereotypes about technology-related

jobs, lack of information regarding technology-related careers, and lack of career guidance and support from family and others hinder girls' wishing to pursue technical or scientific career paths (Kekelis, Ancheta, & Heber, 2005; Turner et al., 2002).

Sex-role socialization research has produced large amounts of data regarding young children's awareness of gender and acquisition of gendered ways of being and thinking. Researchers generally identify four areas in sex-role socialization: family, peer group, media and school. They posit "that children learn how to behave in ways appropriate to their sex role or category through observation, imitation and modeling" (MacNaughton, 2006, p. 128). When children agree with a gender stereotype, they usually change their behavior to match it (Eccles, Wigfield, & Schiefele, 1998). And by five years of age, biases exist against the other gender in many children. Sex-role socialization theorists posit that children think and act in sexist and non-sexist ways due to their expressing the traditional stereotyped sex role they have learned. These roles start to limit their experiences and produce gender inequality in early education (MacNaughton, 2006). MacNaughton (2006) posits that feminist post-structuralists argue children *construct* gender, instead of merely absorbing it through observation and that they may indeed resist non-sexist messages in early childhood as active constructors of behavior. They also argue that genders are not distinct categories but are relational and interdependent. Finally, traditional ways of being masculine or feminine are more powerful because they are more pleasurable.

The gendering of language has been "shown to be a critical element in the educational success of boys and girls, framing their experiences in the classroom, in

relation to the curriculum and their social relationships in the school" (Arnot, 2006, p. 409). Language utilized in the classroom, not only by the teacher but by all, is very important as it can or cannot promote equal opportunities for boys and girls (Cameron, 1990; Graddol & Swann, 1989; Swann, 1992)

Linguistic and communication styles of women are often devalued and misinterpreted by men. In corporate organizations, "women are less likely than men to engage in behaviors that are self promoting" (Oakley, 2000, p. 325). This pattern of behavior can be traced back to girls' socialization in early childhood (Tannen, 1994). The lack of self promotion often works to women's disadvantage in hierarchical organizations where the negotiating of authority is often prevalent. Being less likely to blow their own horn, women often go unrecognized.

Women managers more often use a linguistic style of asking for people's cooperation as opposed to issuing orders to accomplish tasks, as do men. This is often seen by men as the woman lacking self-confidence or failing to exercise authority over subordinates. In the male hegemonic executive leadership arena, in order to succeed, females often must acquire a linguistic style that is command-oriented, firm, decisive, and in control (Oakley, 2000). Jamieson (1995) points out this can lead to the femininity/competence double-bind. Another obstacle that serves a stereotypic role are tone and pitch of voice. A low pitched, masculine voice is often considered the norm for that of a leader (Jamieson, 1995) along with more masculine dress.

Mobility and family commitments. Traditional roles involving child and home care often present themselves as obstacles. Women must balance the home and work

environment, dealing with those who believe she is unable to do so, as well as those who believe she should not even attempt it (Shakeshaft, 1987). Women with children and family responsibilities who are also balancing a career are still expected to be the primary performer of household and childcare chores as these tasks are still not valued or as readily expected of men (Hochschild, 2003; Parasuraman & Greenhaus, 1993). Of those parents in the labor force with children less than 18 years of age, 70.5% of mothers and 94.1% of fathers are employed (U.S. Bureau of Labor, 2005a). Managing a career and family is a struggle for many women in information technology careers (Shafer & Trautlein, 2007). "Women leaders do not have the same personal support system that men have" (Anderson, 1993, p.37).

Elder care is increasing in our culture. An estimated 25 percent of the U.S. workforce provides elder care for parents or others as the elderly population is increasing. Women often have the responsibility to not only be the primary caregiver for their children but now their elderly parents. These women are described as "women in the middle" (Jones, 1993, p. 57) as they experience pressure from two value systems. One pressure is that of a more modern value of working outside the home and the other that of a more traditional value of caring for one's elderly family members.

Being mobile and "going where the challenges were" (Ramsey & McCorduck, 2005, p. 15) are what twenty women leaders in information technology said helped them succeed. Katz et al., (2004) found those information technology professionals in higher education aspiring to CIO positions as committed to staying in higher education even if it meant moving to another institution. Many must look at mobility in order to achieve

such positions as nearly half of all respondents (titles included: managers, supervisors, directors, vice president, or CIO) to the *Information Technology Leadership in Higher Education Survey* had worked 10 or more years and 21 percent had worked 20 or more years at their current institution.

Brown (2006) found the mean tenure for CIOs in higher education was a little over five years. Viswadoss (as cited in Brown) found the average length of a CIO's employment at a higher education organization of between 18 to 36 months. Latimer (1999) reported the typical higher education CIO being in the position for 4.5 years.

For those able to move into higher level positions within their current institution, some raise questions regarding this mobility between positions within the same institutions. For some, it is an expression by those individuals in power positions of performing and endorsing institutional goals that politically advantage the institution. For example, promoting females within an institution magnifies the image of meeting affirmative action goals, and is less threatening to incumbent males than hiring females from outside the institution (Sagaria, 1993).

Status quo old boy networks. Shakeshaft's (1987) review of the literature found women have traditionally been excluded from networks of communication and interaction that often lead to educational administrative leadership positions. A critical number (determined by the size of the organization and the old boy network) of women leaders or executives is often seen as a threat to the "old boy networks" which function to preserve and enhance rewards for males at the top. The old boy networks overlap the formal structure of competition and power advantages of the organization with informal

friendships and alliances, excluding less powerful males and females from membership (Morgan, 2006; Taylor, 2000).

The old boy network, consisting of an elite group of males in an organization, is often characterized as containing three primary elements: it is unconscious, informal, and private. In 1987, the old boy network was in the top three of the most cited forms of professional discrimination by women in executive positions according to a survey conducted of business women by Advance Research Management Consultants (Northcraft & Gutek, 1993)

Being a dominant subculture in organizations, this network of executive managers and leaders feel they would lose a great deal if their culture was forced to change as a result of an influx of new women entrants challenging the prevailing male hegemonic norms. A major challenge would be the determination of salary levels. Since women are usually paid less than men in similar positions, allowing women into the old boy network could threaten the increasing salaries and perks of the privileged few at the top (Byrne, 1996).

One method of keeping women out of the old boy network is through competency testing, a process by which a woman must prove herself over and over again. This sends women the message they are less than welcome and causes them to constantly fight to continually re-gain entry (Gordon, 1992; Rosener, 1995). With many recent corporate downsizings causing layoffs to occur, women middle and senior managers are often the first to go (Gordon).

The literature indicates women have consciously begun duplicating an unconscious process by formally and publicly constructing "networks" or associations which allow women to network with other women and men (Morrison & Von Glinow, 1990; Northcraft & Gutek, 1993; Schmuck, 1986; Welch, 1980). While many have found these networks beneficial to their careers, others have found them lacking in assistance (Northcraft & Gutek). This leads one to speculate that perhaps women must also penetrate the networks of men in order to be recognized (Fagenson & Jackson, 1993a).

Conferences and organizations focused on women in particular fields assist women in networking with each other. These help women combat isolationism and the disconnectedness that can occur from juggling home and work responsibilities. Female ties and connections can be established that reinforce confidence and self-esteem (Bernard, 1976). The Association for Women in Science, Women in Technology International (WITI), American Association of University Women, and the Association for Women in Computing are a few such organizations in existence today. Most have an online presence through the Internet that aids in keeping women updated and the communication flowing to members on a regular basis. Men are an important part of this networking as they still hold the power positions, and if willing, can serve as mentors and advisors to women.

Role models, sponsors, mentors. Males have a wider range of role models than females. Females typically look to family, friends, and teachers while men look outside this inner circle to athletes, professionals, former presidents and religious leaders (Oller,

1979). Role models are generally thought of as the same sex as the person they serve. Sponsors or mentors may be either male or female and are usually more important to a woman than role models since they are the ones who support the woman for jobs and promotions. They may also provide assistance in helping her get the position or promotion. Some literature suggests sponsors and mentors who are white males tend to promote other white males (Lovelady-Dawson, 1980).

Bartol and Aspray (2006) describe role models for women pursuing information technology as other visible, successful women in information technology professional careers and through whom those aspiring to similar positions can envision themselves. With the lack of women in technology related fields of study, they state "that female role models in computer-related academia who could inspire women college students are greatly lacking" (p. 391) as are women in executive managerial roles in the information technology industry. Mentors are defined as "individuals with advanced knowledge and experience who provide significant guidance and support to aid the success and upward mobility of IT career aspirants" (p. 390). Mentors are more readily available than role models and do not necessarily need to be in the information technology field.

Ragins and Cotton (1991) reported that women perceive greater obstacles than men to obtaining mentors, but were actually just as probable as men to obtain mentors. Most research indicates that women obtain mentors at an equal rate to men and experience similar benefits, as men do, from having mentors.

Power dynamics. Power dynamics are complicated by many factors. Some literature explains men's discomfort with women in executive positions as related to

feelings of dependency and past powerless experiences with their mother during childhood (Kets de Vries, 1995). Others report male managers and executives feeling threatened by female counterparts as a result of the traditional values learned through the socialization process, including males do not "lose" to females (Gutek, 1985). Males often find it a new experience competing with women and call themselves the victims as they believe women receive special promotional and affirmative action benefits (Rosener, 1995).

In a recent survey by Women in Technology International, an international women's organization, women in technology stated they were more likely to use power to develop and promote subordinates than to attempt to progress up the ladder themselves. The respondents agreed they do not like the term "power" but think of it more as "influence" instead of command or force. Women respondents consider a good use of their "power" to be that of building bridges between the technology department and other areas of the organization (Shafer & Trautlein, 2007).

Having briefly discussed the obstacles often identified as hindering women's rise to leadership positions in organizations and businesses, those women who have been successful in reaching leadership positions identify the task of overcoming these obstacles as a key to their success. Catalyst (2003) reported women executives from the Fortune 1000 companies stated the following strategies helped them make it to the top:

Exceeding performance expectations (69%)
Successfully managing others (49%)
Developing a style with which male managers are comfortable (47%)
Having recognized expertise in specific content area (46%)
Difficult or highly visible assignments (40%)

Willingness to work long hours (38%)
Having influential mentor (29%)
Gaining line management experience (28%)
Moving from one functional area to another (23%)
Networking (23%)
Developing and adhering to own career goals (20%)
Being able to relocate (19%) (p. 13).

Unfortunately, a high price is often paid in order to overcome obstacles. Women in primary leadership roles in organizations are more likely than their male peers to be single, separated, divorced, widowed, or childless (Fagenson & Jackson, 1993b; Jones, 1986; Offermann & Armitage, 1993; Parasuraman & Greenhaus, 1993; Powell, 1988). Their success at breaking through the glass ceiling has come with personal sacrifices they needed to make to accommodate their careers (Fagenson & Jackson, 1993b).

Beyond personal sacrifices, women in leadership positions often identify several opportunities as assisting them in obtaining their positions. Opportunities can depend on many factors including the individual's situation as well as the organization and its culture.

Opportunities Women Encounter That Lead to the Achievement of Educational Leadership Roles

Organizational Support

Societal representations need to more often depict women as competent managers and as performing competently in technology roles. Stereotypes grow and thrive in situations where little information is known about the group under scrutiny other than categorical data such as sex and race. Stereotypes are heightened when the group under scrutiny has little opportunity to associate with those in the majority group (Fagenson &

Jackson, 1993a; Kanter, 1977). Organizations need to support increasing the number of

women managers and foster the support of positive interactions with men (Powell, 1988;

Northcraft & Gutek, 1993). Creating and supporting opportunities for women in

leadership positions that are traditionally occupied by men, would help counter the

formation of stereotypes regarding women. Organizational practices and programs that

support the discussion of stereotypic preconceptions help to sensitize individuals and

groups to examine and change their perceptions (Powell, 1988, 1993, 1999).

Organizations that offer and support work-life programs and practices that support

flexible work schedules, job sharing, telecommuting and working from home, childcare

programs and on-site centers, daycare referral services, and flexible leaves help alleviate

some of the family responsibilities women hold. Studies substantiate the fact that these

offerings and programs generally help in the recruiting and retaining of employees as

well as result in less absenteeism, less job turnover, greater job satisfaction and

commitment, and increased productivity (Dreher, 2003; Fonseca, 2007; Greenhaus &

Parasuraman, 1999; Hall & Parker, 1993; Holtzman & Glass, 1999; Konrad & Mangel,

2000; Lobel, 1999).

A recent study by Catalyst (2006c) found fathers and mothers with unsupervised

children during the after-school hours were "less productive at work due to concerns

about what their children are doing in the after-school hours" (p. 1). This lack of

productivity can cost businesses $50 to $300 billion annually. Businesses and

organizations can reduce these concerns by cultivating better work-life programs that

allow for flexible work hours, flex-time, flex-space, telecommuting, after-school care,

and investing in community services that support after-school programs. Such programs have a more positive impact on women than men as women have responded more positively than men to flexible work schedules and place more importance than men in parenting support provided by companies, such as child care and alternative working hours (Greenhaus & Parasuraman, 1999; Scandura & Lankau, 1997; Wiersma, 1990).

Additional support could be provided by the federal government's support of additional legislation for more work-life programs and practices to assist women in striking a balance between their dual roles. The Family and Medical Leave Act of 1993 assisted individuals with some balance by requiring organizations of greater than fifty employees to allow the employee to take up to twelve weeks of unpaid leave for the birth or adoption of a child or serious medical illness in the family (Fagenson & Jackson, 1993a).

Dreher (2003), utilizing a longitudinal study during the 1980s and 1990s, found a positive association between the percentage of lower-level management positions held by women in the 1980s and 1990s, the availability of work-life programs and practices provided to these women, and the percentage of women in senior management positions in 1999. Dreher's findings support the theoretical context of a blending of social contact theory and strategic human resource management, as women are allowed to shift some of the burden of their many roles as well as have increased social contact and experience less isolation in the workplace, forming coalitions and support networks. Evidence is provided that organizations that recruit and retain female managers in lower- and mid-

level management positions and provide work-life programs can affect the probability of women competing for and moving into top management positions.

The prioritization of diversity efforts within organizations can help reduce barriers to women and minorities. While many organizations view diversity as important, only 29% of the human resource managers responding to the *Glass Ceiling Benchmark Survey* rated it as important to their organization and 44% rated it as somewhat important (Morrison et al., 1995) with most not prioritizing it as one of the most important issues. The most frequent response chosen by respondents for why workforce diversity is important to their organization was "enhancing competitiveness" (p. 9).

These same respondents indicated that while they felt their organizations had been "either very effective or largely effective in achieving diversity in their entire workforce" (Morrison et al., 1995, p. 10), half of the respondents indicated their organizations were ineffective in diversity achievement at the executive levels. The lack of diversity in upper and executive management levels is prevalent across business, government, education, and the health industry (Galen & Palmer, 1994; Garland, 1991; Morrison & Von Glinow, 1990; Rigdon, 1992).

In the *Glass Ceiling Benchmark Survey*, when asked how effective the organization was in achieving diversity in the executive levels, not-for-profit organizations rated themselves highest with 14% responding as largely to very effective. Manufacturing organizations' respondents rated themselves at 5% effective and service groups at 7% effective. Seventy-nine percent of the not-for-profit respondents also said that diversity was important to their organizations, again higher than the manufacturing

or service groups. Primary reasons for the diversity efforts of not-for-profits were "it's the right thing to do," it represents community demographics, and represents a diverse marketplace. Policies against racism and sexism were the top practices by all organizations in supporting diversity efforts. A large percentage had implemented such policies. However, two other practices were rated as very important but had much lower implementation ratings—grievance procedures or complaint resolution process, 92% rated important, only 76% had implemented; work and family policies, 86% rated important, only 38% had implemented. This suggests a lack of putting into action what human resource professionals view as important in diversity practices. One can argue these diversity practices do little to support the movement of women and minorities into upper management or executive levels unless there are clear efforts to retain, develop and promote women and minorities (Schreiber, Price, & Morrison, 1993).

Leadership Style Becoming More Accepted

Eagly et al.'s (1995) meta-analysis found several circumstances that tend to create differences in the leadership effectiveness of males and females as well as findings related to the favoring of management styles that were less autocratic by many organizations. Autocratic styles are generally associated as a favorable trait being held more by males than females. However, participative styles, generally attributed more to females than males, are becoming more widely used and favored.

Dawson (1995) found women more sensitive and caring, taking more creative approaches to problem solving, building more effective relationships, creating greater trust interpersonally, and being more supportive and understanding as a supervisor.

Again, many organizations are moving to favor a more supportive and interpersonal approach from those in leadership roles.

Women's interactive, transformational styles may represent an important approach to leadership as organizations become flatter, more diverse, team-based, globalized, and networked throughout the global economy (Adler, 1993; Helgesen, 1990; Rosener, 1990, 1995). However, Helgesen cautions that care must be taken that this style of leadership is not seen as a generic "woman's style" leading to new stereotypes. While it is easy and quick to create stereotypes, it is difficult and often impossible to rid organizations and society of stereotypes once embedded into the hegemonic systems.

Role Models, Sponsors, and Mentors

In a review of several dissertations focusing on factors affecting successful careers, Shakeshaft (1987) found most women who have been successful in acquiring educational administrative roles have had mentors or sponsors. It is a very important process in many women's careers. "Mentors serve as advisors, links to advancement, and confidants" (Harrow, 1993, p. 154).

Having mentors facilitates career advancement. "This is particularly true of those who have male mentors since they can help women become known in the 'old boy network' which is still a significant force" (Warner & DeFleur, 1993, p. 7). Warner and DeFleur specifically address higher education: "Because higher education administration is still a relatively small field with many strong networks, mentoring and sponsorship play a particularly important role in the advancement of women. Mentors help protégés

understand the rules of the game, they give positive support for accomplishments and provide feedback on performance" (p. 7).

Bower (1993) states having a woman mentor is particularly helpful to women in higher education as such mentors can provide guidance in how to fit in to male dominated environments without discarding one's self. Mentors provide invaluable contacts and assist women striving for leadership roles to learn about and become a part of informal networks.

Smith (2000) investigated the experiences of women with successful technology careers in order to identify factors contributing to their success. Her findings relate to much of the research indicating the importance of parents' and educators' roles in reducing the barriers and biases related to approaching technology typically in a male-centered manner. Males have and are often given advantage in working with and having access to computers and other technology devices. They are often encouraged more than females to pursue a path in these fields. Females must be supported and encouraged to pursue exposure to the technology field, just as they would many others. Exposure to role models and mentors is ideal, but the fact is there are very few female role models for most girls to have contact with in technology fields. Research also indicates the socialization process has tended to track females along non-technology and non-leadership lines more than males. Fostering girls' self-esteem and increasing their awareness and interest in technology has been the focus of many granting agencies recently. But the real change agent needs to occur before barriers are put in place—that is the change needs to occur culturally through a socialization process that provides equal

opportunities to males and females, provides mentor and role models in technology leadership positions for both males and females, and provides educational and other organization systems that lack bias and prejudice.

Mentoring relationships generally lead to more promotions, increased power, recognition, satisfaction, job mobility, and greater access to those decision-makers in the organization. Many women who have reached upper-level executive positions acknowledge the help received from their mentors (Bower, 1993; Dreher & Ash, 1990; Fagenson, 1988, 1989; Ragins & Cotton, 1991; Turner et al., 2002). Katz et al. (2004) found more women survey respondents reporting having a mentor than men respondents. Their study also revealed that those who scored high in transformational leadership reported having more mentors than those respondents who scored low in transformational leadership styles. Indications are that mentoring may assist in developing women leaders with transformation leadership styles.

Turner et al. (2002) approached their study by researching dominant forces that have influenced successful women in information technology to enter and remain in the field. Those responding to their survey stated the following were two of the more important influences to their entrance into information technology as a career: (1) school experiences in using computers along with teachers' and professors' encouragement or discouragement; and, (2) male friends, relatives, and colleagues serving as role models and mentors along with their encouragement or discouragement. Of those responding, only "half of the successful information technology women majored in traditional technical fields as undergraduates" (p. 15). The remaining women entered through a

variety of fields of study with many establishing information technology careers by growing with the field since the 1980s through on-the-job experiences.

Intervention programs should not be limited to computer science technical fields, but should be encouraged in all fields and for all ages of women. Schools and teachers need to realize how important they are in portraying a climate conducive to women participating in information technology use and fields of study. They must also create a climate of openness in that many different fields can lead to many different careers and paths. Computer science is not the only path one must take to have a successful career in information technology.

Males and females in the field who serve as mentors and colleagues need to be aware of the roles they can take in encouraging others to enter information technology as well as grow and advance within it. They can also be very influential in reducing obstacles and providing opportunities for women already in the field.

<u>Support Through Individual Strengths</u>

Resisting discouraging influences and focusing on those that encourage can help build a person's career, focusing on and being dedicated to accomplishing goals, resisting the "geek" culture associated with information technology that is intrinsically anti-female, and being great at what a person does—but not necessarily perfect, are all summarizations from women who have succeeded in the information technology leadership field (Ramsey & McCorduck, 2005). Some are finding what is termed a second wave of women who are succeeding "not by adopting the style and habits that have proved successful for men but by drawing on the skills and attitudes they developed

from their shared experience as women" (Rosener, 1990, p. 119). This group of second generation managerial women is capitalizing on the uniqueness of their socialization to succeed in certain work environments. Rosener found such women as engaging in interactive leadership, encouraging participation, and the sharing of power and information between themselves and subordinates. While this is not necessarily a unique style to women, it is effective, as is any style, only in those organizations that accept it.

Ausejo (1993) states that since society tends to define certain characteristics as being male or female, androgyny strategies may provide equitable opportunities. Women who over indulge in adopting masculine characteristics often find themselves in difficult, uncomfortable situations. Androgyny in leadership positions can demonstrate the value of feminine and masculine traits working together. Opportunities will be provided for those adopting such strategies, regardless of one's sex.

More women are experiencing opportunities as they realize that in order to succeed in leadership positions created and controlled by men, they must learn the rules of competition and assertion. Ausejo (1993) summarizes several issues and potential opportunities affecting women higher education administrators. They must learn to have self-confidence and self-esteem. Women leaders must develop positive attitudes, have a positive self-image, set professional goals, have a vision, yet be flexible in order to earn the respect and confidence of others and serve as positive role model. Mentors and informal support systems are important in providing opportunities related to advice, assistance, and career advancement. Good communication skills, informal and formal, verbal and non-verbal, provide opportunities as organizations view this as a needed asset

in leaders. Being respectful of others provides opportunities for leadership roles and advancement, as does thoughtfully taking risks. The final issue is balancing work, home and personal needs. As more men assist more in raising children and sharing household duties, women experience opportunities related to recognition and respect for their role as a housewife as well as less stress related to balancing work life and home life.

Heward (1996) agrees that self confidence is very important to open up opportunities for career advancement. She also stresses the importance of self-advertisement and establishing a positive reputation. Mentors and networks of contacts provide opportunities to women in higher education.

K. A. Johnson (1993) stresses having good communication skills and strategies are very important to acquiring and maintaining leadership roles in higher education. Communication is tied closely with one's self concept which influences how one perceives others and how others perceive the person. Perception of others is important as women need to be aware of how they are presenting themselves and the perceiver's expectations. While women are often more skilled in interpersonal communication than men, women must be aware that the language used reflects power and the extent to which one is perceived as powerful. Powerless language is exemplified by one hedging, hesitating, overly polite, and language using disclaimers. Women striving for leadership roles must be aware of the language they use and must also acquire active listening skills that seek feedback. Nonverbal communication is very influential in shaping perceptions.

Many women are using their personal strengths to become their own bosses by creating their own organization or business and becoming the chief executive officer.

According to the U.S. Census Bureau, in 2002 "women owned nearly 30 percent of nonfarm businesses in the United States" (Bergman, 2006, p. 1). This reflected a growth rate of 20 percent between 1997 and 2002 (Bergman). Those women who can financially afford to begin their own businesses and do so, find less obstacles and more flexibility for their work lives than being in a traditional organization (Fagenson & Jackson, 1993a).

<u>Summary</u>

The literature suggests many feminist and organizational theories. The selection of feminist standpoint theory and gendered organizational theory to serve as complementary conceptual frameworks for this study provided a lens allowing for understanding the nature of executive level higher education information technology leadership through the lens of the perspective of lived experiences of women CIOs. The intersections of gender roles and socialization, within the structures and functions of information technology in higher education, were interconnected with information gathered from the co-narrators related to sex-role and gender patterns in leadership positions, leadership styles, and obstacles and opportunities encountered by women in achieving educational leadership roles. The methodology for achieving these interconnections is discussed next.

CHAPTER 3

METHODOLOGY

<u>Research Approach</u>

The purpose of this study was to describe the lived experiences of the co-narrators, women CIOs in higher education institutions, and the opportunities and obstacles encountered as they pursued and achieved their current positions. The study explored, from the standpoint of the co-narrators, the intersections and interconnections that form the identities of the co-narrators as information technology leaders in the gendered organization of higher education information technology. The study focused on three women CIOs in higher education as their narratives were gathered through two face-to-face interviews and one follow-up phone interview.

Generalizations explaining or verifying the co-narrators' standpoints as the views of all women CIOs in higher education are not appropriate. The focus of this study was to "explore attitudes, opinions, and beliefs, ... examin[ing] personal reactions .... [and the] constructive impact" (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005, p. 196) of women CIOs' situated experiences and lived lives. A qualitative approach using in-depth interviews with the co-narrators facilitated the collection of women's standpoints rather than methodologies including statistical analysis or involving abstractions (Ellis & Bochner, 2003; Lichtman, 2006; Walby, 2001). Brantlinger et al. (2005) described qualitative research as "a systematic approach to understanding qualities, or the essential nature, of a phenomenon within a particular context" (p. 195). The context for this study was higher education information technology organizations.

As a leader in information technology divisions in higher education, the researcher has not pursued or held a CIO position. The researcher has been situated in leadership roles in higher education information technology for over twenty years at two major universities. The researcher considers herself a pioneer as described later by the co-narrators. The researcher understands that subjectivity cannot be completely controlled or held in abeyance as the researcher's positional lens (Brantlinger et al., 2005) of utilizing a conceptual model of feminist standpoint and gendered organizations' theory along with the researcher's own lived experiences may influence the researcher's work. Acker (2000) discussed a continuing debate amongst researchers regarding the extent one's personal experiences should inform the context for data analysis. While no conclusion was reached, she recommended finding ways to work creatively within such tensions generated by this debate. In utilizing a basic reflexive approach in the interpretation of the data, the researcher attempted to guard against unnecessary bias by letting the data generate reflection, which in turn generated the gathering and use of additional data, which generated additional reflection, and so forth (Alvesson & Skoldberg, 2000).

The researcher also guarded against acceptance or promotion of biases by holding past and present experiences in abeyance, remaining aware of personal values and partialities in pursuing a stance of neutrality. Complete neutrality or utilizing value-free research methods to uncover "truths" is often considered unrealizable (Gilligan, Spencer, Weinberg, & Bertsch, 2003). A stance of value-neutral or value-free methods could be argued to be a value (Greenbank, 2003). The researcher attempted to encase her values

resulting from lived experiences by adopting a grounded theoretical approach, letting the data generate reflection and the need for more data, utilizing several in-depth interviews with extensive confirmation, and finally utilizing member checks that allowed the co-narrators to review the data analysis and interpretations. The co-narrators' perceptions, standpoints, and final confirmations determined the results of this study.

<div align="center">Research Design</div>

Qualitative research allows the voices of people historically silenced to be heard. One method of hearing people's voices is through their narration and recounting of certain aspects of their lived lives. Brantlinger et al. (2005) stated: "An assumption of narrative research is that people are storytellers, who lead storied lives" (p. 199). A narrative inquiry approach was used for this study. The openness of such an approach allowed for researcher flexibility, but such an approach can also involve risk as there is no clearly defined picture of the final product. A constant comparative method was utilized with the multiple data sources. This method involved data collection, identifying categories and sub-categories of import as identified by the data, re-collecting data focused on the categories, looking for emerging themes, coding, and doubling back for more data collection as needed until the saturation of data categories occurred. Formal analysis began early in the process (Bogden & Biklen, 2003).

A narrative inquiry approach captured the stories of the co-narrators. Narrative inquiry attempts to promote dialogue and inspire conversations for the reader who enters the stories from the reader's lived perspective (Riessman, 1993). It allows the reader to critically reflect on their own experiences "and actively engage in dialogue regarding the

social and moral implications of the different perspectives and standpoints encountered" (Ellis & Bochner, 2003, p. 225).

Surveys and other types of quantitative approaches cannot capture and convey the complexities of experiences and the interweaving and intertwining of multiple contexts and historical traditions. Quantitative approaches do not allow the reader to enter the essence of the lived experience and to feel as if he or she is a part of that experience. Quantitative approaches are unable to speak to people "about their experience[s] or about the lives of others they know" (Ellis & Bochner, 2003, p. 229).

Using the qualitative methodology of narrative inquiry, allowed the researcher to gather rich, detailed information through several flexible, less structured interviews with the co-narrators (Bryman, 2004). The stories and lived lives of the women CIOs in higher education are stories and experiences that have been and need to continue to be captured in order for women aspiring to such careers, administrators in higher education and information technology, educators and administrators in elementary and secondary education, parents, and others to be able to understand the multiple experiences and feel the desires and uncertainties these women encountered.

Site Selection

The Carnegie Foundation for the Advancement of Teaching was founded in 1905. Since then it has grown into an organization focused on research and the improvement of society. Focused on improvement through education, the gathering and analysis of educational data presented a need for a classification system of comparable comparison

amongst institutions (Lagemann, 1983). This classification framework is used today by many researchers and organizations in classifying data from higher education institutions.

Public institutions categorized as Master's Medium and Master's Large were chosen due to similarities to the researcher's current institution, to eliminate the variable of institution type, and to provide an appropriate sample size. Two hundred and thirty six public institutions are classified as Master's Medium and Large institutions. (The Carnegie Foundation for the Advancement of Teaching, 2006d).

Master's colleges and universities, according to the Carnegie Classification System, are "institutions that award at least 50 master's degrees and fewer than 20 doctoral degrees per year" (The Carnegie Foundation for the Advancement of Teaching, 2006a, p. 3). Institutions classified as Master's Large award at least 200 master's degrees per year, with Master's Medium institutions awarding 100-199 per year, and Master's Small institutions awarding 50-99 master's degrees per year (The Carnegie Foundation for the Advancement of Teaching, 2006b). Master's Large institutions comprise approximately 7.9% of institutions with an average enrollment of 8,115 and Master's Medium institutions comprise approximately 4.3% of institutions with an average enrollment of 3,893 according to data collected in 2004 (The Carnegie Foundation for the Advancement of Teaching, 2006c).

From the researcher's perspective, utilizing similar institutions facilitated the enhancement of interpretations and understandings of the co-narrators' lived lives and aided in the development of representative themes and patterns. The researcher's familiarity with the workplace culture and the dynamics and tensions of information

technology organizations within the higher education environment also facilitated interpretations and understandings. Brantlinger et al. (2005) discussed qualitative studies as generally including "insider[s] to phenomenon" (p. 199) giving voice to those historically silenced as well as permitting researchers familiar with the context under study to seek more relevant information. Since such institutions and workplace cultures are similar to the institution and culture of the researcher's current situated work life, interpretations by the researcher are considered more valid and trustworthy. The researcher has experienced over twenty years of leadership roles in higher education information technology and has been in similarly situated places as those of the co-narrators. Such similarities provided the researcher an insider status, as discussed by Acker (2000), which facilitated "access to the participants, rapport in the interviews, analysis of the data and [future] communication of the results" (p. 189). Being an insider, the researcher readily understood the co-narrators' stories.

Pilot Study

A small pilot study was conducted two months before the study. The pilot study allowed the researcher to practice interviewing techniques and skills, questioning strategies, and informed the researcher of needs related to question modification or expansion that would assist in structuring the study. The pilot study consisted of interviews that were audio recorded, if the interviewee permitted, and were approximately one-hour in length. The interviews were conducted in a place chosen by the interviewees. The interviewees were two women in non-CIO positions who held other higher education information technology leadership positions. The pilot women

had lived lives in higher education information technology. Based on the interview results, the pilot women revealed a recognition of the genderedness of such organizations and opportunities and obstacles experienced related to the achievement of their leadership roles. Once the interviews were completed, the researcher reviewed the recordings, recorded reflections on the interviews, and finalized question guides that facilitated the semi-structured interviews with the co-narrators. This experience and the guides allowed the researcher to be better prepared for the interviews with the co-narrators in this study.

The pilot study was helpful in confirming the research questions as applicable and appropriate for guiding the interviews and probing for the data that fit within the conceptual model utilized for this study. The pilot study helped confirm the timeframe needed for each interview to gather the rich, in-depth data each co-narrator so willingly contributed. The pilot study also helped to confirm the conceptual framework as a feasible and practical framework within which to conduct this study.

The Conceptual Framework

From the pilot study, the proposed conceptual framework of feminist standpoint theory and gendered organizational theory were reviewed as to the suitability and appropriateness of the framework. Elements reviewed included the pilot participants willingness and openness to share their perceptions and viewpoints in response to the primary interview question and subsequent follow-up questions. Also included were the exploration of elements within the interviews related to the genderedness of information technology and higher education institutions. Genderedness relates to the socially constructed schema for categorizing individuals based on biological differences and

stresses normative definitions of masculinity and femininity (Powell, 1993; Scott, 1986). Brantlinger et al. (2005) discussed the "dynamic and diverse" (p. 197) nature of qualitative approaches. The researcher realized that the purpose of this study could have changed if new or different conceptual frameworks or theories had presented themselves during the initial investigation. However, feminist standpoint and gendered organization theory were confirmed as appropriate and suitable conceptual models for this study.

The Co-Narrators

The population for this study was female CIOs in higher education information technology. The sampling frame for this study was Master's Medium and Master's Large public institutions as classified by the Carnegie Foundation for the Advancement of Teaching. The sample was a purposive sample of permanent female CIOs in higher education information technology in those public institutions in the United States. From this group, three women were included as the co-narrators. Limiting the co-narrators to three allowed the researcher to do extensive follow-up with the co-narrators through follow-up interviews leading to rich, in-depth data gathering. Brantlinger et al. (2005) discussed one of the primary quality indicators for interview studies is that of selecting an appropriate number of participants allowing for extensive follow-up if required.

Reviewing and examining higher education institutions' websites was found to be the best source of information regarding the sex of the chief executive information technology leader. Three co-narrators were invited to participate in the study and accepted the invitation. These co-narrators are introduced later in this chapter.

Data Collection

Initial data collection took place over a period of three months. It involved two face-to-face, in-depth, individual interviews with each of the co-narrators. Additional data collection occurred approximately eight months after the initial data collection began and consisted of a third interview by telephone with each co-narrator. The telephone interview permitted the researcher to gather additional data on topics needing more depth or confirmation from previous interviews due to time constraints. The resulting data served as the primary data source for this study.

The co-narrators selected the location for the face-to-face interviews. A series of open-ended questions guided the initial semi-structured interviews. Less structured interviews allow for gaining greater in-depth and breadth of data (Bryman, 2004; Fontana & Frey, 2003). Confirmation and triangulation enhanced the trustworthiness of the data and assisted the researcher in validating information, confirming interpretations, and drawing conclusions (Bogden & Biklen, 2003; Glesne & Peshkin, 1992; Lichtman, 2006; Patton, 2002).

The interviews were audio recorded digitally with the files transferred to a personal computer for purposes of transcription. The researcher completed the transcribing, allowing for the noting of voice inflections and other nuances. Once transcribed, the audio interview files were deleted from the storage device. The transcriptions, without identifying information, will be maintained for ten years. All files and transcription were treated as highly confidential and others do not have access to

them. Pseudonyms were utilized when referring to particular individuals or identifying situations, locations, and experiences.

Interpretation and researcher self-reflection logs served as an audit trail, chronicling the data collection, interview process, and data analysis. Interpretation and self-reflection logs aided in providing a mechanism for interpreting, analyzing, and raising questions for the subsequent interviews (Appendix A). Question guides served as a framework for the interviews, but additional questions were used as appropriate (Appendix B). During the interview process, probing and follow-up questions were asked pursuing relevant paths taken by the co-narrators.

Interview Questions

A semi-structured interview format was used. This approach provided the opportunity for the researcher to pursue a variety of topics the co-narrators wished to discuss related to variations on the main questions. The researcher kept the interviews flexible and flowing. Reference was made to the interview and question guide to ensure the use of similar wording between the three co-narrators when asking questions or moving to a subsequent topic. When the topics began to vary from the research questions being addressed, the researcher utilized facilitation skills acquired over the years to pull the focus back to that of this study. The guiding questions for the initial interview based on the conceptual framework for this study were:

1. What are the lived experiences of women higher education information technology leaders?

2. Based on the perceptions of the co-narrators, does being a woman influence or affect women's careers as higher education information technology leaders?

3. Were there elements (social, political, economic, educational, or other) that the co-narrators experienced that provided opportunities enabling them to obtain the position of information technology executive leaders in higher education?

4. Were there obstacles and barriers experienced by the co-narrators during their career paths of becoming information technology executive leaders in higher education?

5. If obstacles were encountered, were there methods utilized by the co-narrators to overcome or eliminate obstacles and barriers encountered during the process of becoming an information technology executive leader in higher education?

6. Were there experiences the co-narrators had in which the organization of higher education or information technology hindered or facilitated their career path of becoming a CIO?

7. According to the experiences of the co-narrators, is a framework of femininity or masculinity perpetuated in higher education organizations or higher education information technology organizations?

8. Were there observations made or experiences the co-narrators had reflecting the construction of divisions by gender in the higher education organization or information technology organizations?

9. Were there experiences the co-narrators had in which they were marginalized or perceived a patriarchal designation of power and authority?

10. Were there observations made or experiences the co-narrators had in which

authority was legitimized, task boundaries determined, or authenticity of work

confirmed due to access to certain artifacts or due to the sex of the person in a

particular role?

The Interviews

The interviews were conducted in a location chosen by the co-narrators with

which they were comfortable. Two face-to-face interviews were conducted with each co-

narrator. Each interview was approximately two hours in length. For each, both

interviews occurred in the same location. Two of the co-narrators' interviews were done

in their work offices during working hours. The other co-narrator's interview was done

in her home outside of working hours. The researcher attended to timeliness in

completing the second interview with each co-narrator so as to preserve the remembrance

of the first interview. Interviews began at the end of August 2007. Two face-to-face

interviews with each co-narrator were completed by mid-November 2007.

The interviews were audio recorded digitally with transcription following. Data

was transcribed and coded following a schema developed by the researcher based on

themes and patterns in the responses. "Themes are abstract ... constructs that

investigators identify before, during, and after data collection. Literature reviews are rich

sources for themes" (Ryan & Bernard, 2003, p. 275) ... and the literature review

conducted by this researcher was used to assist in the development and identification of

such themes. The second round of interviews with each co-narrator verified the data

gathered in the first interview through triangulation and confirmation. The second round

of interviews also permitted the researcher to pursue additional questions (Appendix C) related to themes and patterns, allowing for expansion, clarification, and greater depth and richness of experiences and events to be gathered (Bryman, 2004).

Third interviews were conducted via telephone. These were approximately fifteen minutes in length and focused on gathering additional data on topics needing deeper probing or confirmation. The third round of interviews similarly permitted the researcher to pursue additional questions and to triangulate or confirm data gathered in the first and second interviews. Additional information and confirmation was needed in the areas of gendered organizations and occupational jurisdiction, as well as some demographics regarding each co-narrator's organization (Appendix D). The questions for the third interview were emailed to the co-narrators ahead of time since this final interview and the gathering of additional data within a short interview time frame was important. Receiving the questions ahead of time allowed the co-narrators to be thoughtful and focused.

Coding of Interviews

The researcher utilized an open coding method described by Strauss and Corbin (1998). Open coding permitted the researcher to review the data from the interviews and identify concepts or phenomenon which were then labeled. Labeling or naming the phenomenon allowed the researcher to "group similar events, happenings, and objects under a common heading or classification" (p. 103). Through the process of in-depth detailed comparative analysis of the data from each co-narrator's interview, phenomenon that shared common characteristics were similarly grouped.

Categories emerged that allowed the researcher to group several conceptual classifications together, reducing the number of individual units the researcher needed to address. The categories stood for phenomena which were "important analytic ideas that emerge[d] from [the] data" (Strauss & Corbin, 1998, p. 114). Categories answered the question, "'What is going on here?'" (p. 114). Subcategories emerged within the categories defining more detail such as how, when, where, and why. The researcher identified any particular properties or dimensions related to the categories and subcategories in order to formulate patterns. This is known as axial coding. By using axial coding, the researcher was able "to form more precise and complete explanations about [the] phenomena" (p. 124).

Thus, once the interviews were transcribed into text, initial coding of the text occurred (Appendix E). First round interviews were transcribed and initially coded before second round interviews were considered. The codes served as tags, marking or indexing the text or phenomenon. No specific list or defined set of codes were created and used. The codes were often phrases or sentences explaining the phenomenon and were used for later retrieval. The codes also served as values in marking the text or phenomenon as biographical, examples, descriptive, dualities or other values identified by the researcher. For example, from Grace's first interview the following two coding examples illustrate how two separate text passages were coded: (1) As a young female on an all male executive team, statements and suggestions are often ignored; but if a male makes the suggestion then it is listened to and thought to be a great idea; (2) Strength developed through experience and confidence in self. Coding allowed the researcher to

identify themes, concepts, behaviors, and beliefs and the manner in which these linked to the conceptual model (Ryan & Bernard, 2003). The initial coding process of the first round interviews allowed the researcher to consider the need for follow-up questions related to particular themes, concepts, behaviors, and beliefs (Appendix F).

Once it was determined second round interviews were needed to further expand upon themes and concepts that emerged from the first round interviews, second round interviews were completed with the initial coding process re-occurring from the transcription of the second interviews. For example, using the two coding examples given previously, the researcher expanded on those concepts in the second interview with Grace by asking about her perception as to why she thought her ideas were being ignored when males made similar or exact suggestions that were considered worthwhile; and how did she gain experience and self-confidence resulting in those being a strength for her? The initial coding process of the second round interviews allowed the researcher to consider the need for additional follow-up questions related to particular themes, concepts, behaviors, and beliefs as well as any additional need for confirmation by the co-narrators of any new data that emerged during the second interviews.

Third round interviews were coded in a similar manner. Initial coding occurred from the transcription of the interviews. The researcher identified any new codes that were suitable as well as utilized previously developed codes during the coding process. For example, Grace spoke about a trend she noticed of women coming into information technology leadership positions without an information technology background but more of a background in marketing or some other field. This was coded by the researcher as:

One trend noticed was women coming into IT leadership positions more from fields outside of IT. This became a subcategory under the category Lack of Qualified Women under the theme Perpetuating Gendered Organizations as related to the combined research questions on the perpetuation of gendered organizations and existence of occupational jurisdiction in higher education information technology.

Utilizing open coding and a constant comparative process, the researcher generated categories or concepts based on analyzing sentences and paragraphs of narrative from the co-narrators. The researcher then identified the properties and determined the dimensional factors of each category. Within the categories, subcategories emerged and were identified. For example, using the second coding example given earlier regarding Grace's perception that she developed strengths through experience and self-confidence, self-confidence eventually emerged as a subcategory under the category of Leadership Skills and Styles, which was under the theme of Personal Strengths as it related to the research question regarding opportunities the co-narrators had experienced which assisted with their achievement of their CIO higher education role.

Categorization allowed the researcher to work with a focused and narrowed group of phenomena. Categorization also provided critical vigor for explanation and prediction. Simultaneously, the researcher used axial coding to relate categories to their subcategories. This allowed the researcher to develop an understanding of the linkages between phenomena mentioned by the co-narrators as they told their stories as higher education women CIOs. Categories were considered to be saturated during the coding

process when no new information emerged. At that point, the collection of any additional data was not productive in that it would not add any new dimensions, conditions, or consequences to the explanations (Strauss & Corbin, 1998).

Data Analysis

Data analysis and interpretation occurred simultaneously with the collection of the data so that the researcher could return to the co-narrators with additional questions seeking additional in-depth descriptions and responses through a follow-up interview(s). Open coding permitted the analysis to occur on sentences and paragraphs of the narratives provided by the co-narrators (Strauss & Corbin, 1998; Appendix E). The pilot study's and the first interviews' data helped to establish possible coding topics. Additional codes, becoming categories and subcategories, were identified and utilized as analysis progressed. Through the use of the constant comparison of coding to the conceptual framework to those categories identified in the literature review, an initial set of categories and subcategories began to emerge. Lichtman (2006) describes this stage of research as moving "from Coding to Categorizing to Concepts" (p. 167). Concepts or themes were identified from the data that reflected the meaning of the data. For example, the concept reflected in the first coding example presented previously for Grace, of statements and suggestions she made being ignored, aligned with data under the category of Professional Input Ignored, Discounted, Credited to Others which described the theme of Marginalization as it related to the research question of obstacles encountered by the co-narrators as they pursued their professional paths. The making of "meaning from qualitative data is a process that moves between questions, data, and meaning....it is

iterative, circular" (p. 171) and leads the researcher to statements of relationships regarding the specific data and its connection to the conceptual framework.

During the systemic development of categories and the relating of categories and subcategories to each other, the avoidance of rigidity was of primary concern. Categories and subcategories contain certain "properties and dimensional qualifiers" (Strauss & Corbin, 1998, p. 117). Knowing the dimensions of the qualifiers, while also maintaining flexibility, allowed the researcher to begin the sorting of phenomenon and patterns into categories and subcategories. For example, within the theme of Methods the co-narrators used to overcome or work around obstacles encountered, were two major dimensional qualifiers: (1) methods they personally used; and (2) methods they used to help minimize obstacles for others. Follow-up interviews with the co-narrators allowed for the further exploration of categories and subcategories assisting the researcher with clarification of or the gathering of additional data related to certain phenomenon. Saturation of categories occurred when no new information emerged (Strauss & Corbin, 1998).

Analysis of the Interview Data

Once the first level of analysis had occurred of each of the interview narratives for each co-narrator, the researcher began the process of second-level analysis. During this phase, the researcher continued to re-evaluate the categories and their properties, as identified during the open coding process. Constant comparison of data across the co-narrators' narratives continued. Included in the re-evaluation was also the re-assessment of the contexts and discourses within which the various elements of the co-narrators' stories were framed. Riessman (1993) states that "(i)ndividuals' narratives are situated in

particular interactions but also in social, cultural, and institutional discourses, which must be brought to bear to interpret them" (p. 61). A continual re-evaluation of the linkage of subcategories with categories that occurred during the axial coding process also continued. Corrections, deletions, and additions to categories and subcategories occurred as needed. For example, early in the analysis process Institutional Obstacles was a theme with several categories as it related to obstacles encountered by the co-narrators. Later, the categories were determined to better fit within other themes and were moved. One example, Corporate Bullying, was moved from Institutional Obstacles to Marginalization. Appendix G provides a comparison example of the Draft Obstacles Matrix to the Final Obstacles Matrix. Such determinations related to the researcher engaging in the constant comparison of data analyzing the contextual relationships that existed between and amongst the data. It is important to remember that categories "are abstractions; they represent not one individual's or group's story but rather the stories of many persons or groups reduced into, and represented by, several highly conceptual terms.... Categories are derived by comparing data from each case" (Strauss & Corbin, 1998, p. 145). In this research, categories were derived by comparing data from each co-narrator's lived life as they were given voice to tell their stories.

During the second level of analysis, a matrix was developed reflecting a frequency distribution by category and subcategory of the concepts and statements expressed by the three co-narrators under the framework of the research questions (Appendix G). Frequency related to categories and subcategories allowed the researcher to visually compare and contrast those categories and subcategories most frequently

referred to through concepts and statements apparent in the data. Frequency was merely an initial indicator assisting the researcher in organization and comparison of the data. Salience and prominence of categories' data became more significant.

A narrative was prepared by the researcher by category and subcategory within the framework of the research questions comparing and contrasting the concepts and statements made by each co-narrator related to the various categories. During this third level of analysis, the co-narrators' responses were re-read as necessary and, in some cases, moved to a different, more appropriate subcategory or category. Interpretation by the researcher of the context within which statements were made became very important. The researcher remained aware that the assumption could not be made that the co-narrators' stories would or should remain entirely consistent from one setting to another (Riessman, 1993).

Theme development occurred during the aligning of responses by category to the research questions. Some themes were combined. For example, it was decided that categories and subcategories related to self motivation fit better with the theme of perseverance. Narrowed paths and glass ceilings were two themes combined. Also, communication strategies and overbuilding relationships were combined. Combining themes created unity and cohesiveness as interrelated thoughts and categories were presented. As the categories merged into themes aligning with the research questions, some research question areas were combined as the responses reflected little difference in context and content between the question topic areas. The research questions and responses were merged into five major overarching themes: Pioneers, Opportunities,

Obstacles, Methods Utilized for Overcoming or Eliminating Obstacles, and

Genderedness and Occupational Jurisdiction. These themes were determined based on

the researcher's interpretation of experiences, events, and perspectives of the co-

narrators.

<div align="center">Reliability and Validity of the Study</div>

Riessman (1993) states that "traditional notions of reliability simply do not apply

to narrative studies, and validity must be radically reconceptualized" (p. 65). Events and

experiences that comprise narratives and stories may be told in very different ways at

different times, depending on the situation, values, and interests of the co-narrators at that

particular time. "Any methodological standpoint is, by definition, partial, incomplete,

and historically contingent" (p. 70). Validation and trustworthiness can be approached in

four ways, according to Riessman. First, "persuasiveness is greatest when theoretical

claims are supported with evidence from" (p. 65) the co-narrators' accounts of their lived

experiences. Second, correspondence with the co-narrators or member checks in which

the co-narrators review the data analysis and researcher's interpretation, providing

confirmation or expressing alternative interpretations, increases the validity and

credibility of the research (Riessman).

Third, "coherence must be as 'thick' as possible" (Riessman, 1993, p. 67)

including global coherence, what action or outcome is the co-narrator trying to

accomplish; local coherence, what "linguistic devices" (p. 67) are used by the co-narrator

to make their point, such as comparisons and examples; and themal coherence, portions

of the interview text are present that support certain categories and themes. And finally,

there is use of the research or the data by others for their own work in pursuing additional research or supporting others' findings.

Guba and Lincoln (1981) similarly suggest four methods for establishing validation and trustworthiness in qualitative research. First, the use of "host verification or member checks" (p. 186), as explained previously. Second, the use of "triangulation and corroboration" (p. 186) may be used and involves the checking of data for affirmation from other people in similar situations or with other methodological tools. Third, an independent observer can be asked if he or she observed the same phenomenon and can validate the researcher's findings and conclusions. And, finally, phenomenon recognition can be used that involves presenting the studied "reality" to others who live and experience that reality asking if this does represent their reality.

A competent outside reviewer or auditor may also be used to verify "that substantively and methodologically sound options were chosen" (Guba & Lincoln, 1981, p. 122) by the researcher and that "given [the] perspective and [the] data, ... [the reviewer] would probably have reached the same conclusion[s]" (p. 124). Such separate judgment "serves as an analogue to the 'replicability' criterion, which scientific inquirers favor in dealing with questions of reliability" (p. 186).

For this study, the following methods were used to establish the interpretive validity: usefulness, persuasiveness, member checks, coherence, triangulation and corroboration, and an outside auditor. A study can be considered useful when it attempts to promote dialogue and inspire conversations for the reader (Riessman, 1993) allowing the reader to critically reflect on their own experiences "and actively engage in dialogue

regarding the social and moral implications of the different perspectives and standpoints encountered" (Ellis & Bochner, 2003, p. 225). This researcher was assisted through the data analysis by an advisor, an experienced qualified researcher, as usefulness of the study was a primary goal for the researcher. The stories and lived lives of the women CIOs in higher education are stories and experiences that have been and need to continue to be captured in order for women aspiring to such careers, administrators in higher education and information technology, educators and administrators in elementary and secondary education, parents, and others to be able to understand the multiple experiences, feel the desires and uncertainties these women encountered, and engage in critical thinking regarding change. Second, persuasiveness was established as evidence was provided from the co-narrators' accounts of their lived experiences supporting theoretical statements and explanations (Riessman, 1993).

Third, member checks were utilized allowing the co-narrators to review the data analysis and researcher's interpretation providing confirmation or expressing alternative interpretations (Guba & Lincoln, 1981; Riessman, 1993). Individual biographies along with the data analysis were sent to the co-narrators for review. A cover letter explained the process to the co-narrators (Appendix H):

> I am now asking that you read through this chapter, focusing on your statements, and provide me with verification that your statements are represented accurately or feedback regarding specific alternative interpretations that you may have or anything that you would prefer be deleted. I am also asking that you read through the brief biography enclosed and either confirm its accuracy or provide corrections.

Helen responded: "You did a great job of capturing my comments and weaving them into your narrative." She requested primarily editorial revisions such as removing "you knows," "I thinks," and "kind ofs" and also corrected one quote pertaining to a woman staff member along with a few biographical corrections. Alice responded: "I am happy with how you have represented me.... As is, is fine." Grace responded: "I feel that I was accurately represented in your research."

Fourth, thick coherence (Riessman, 1993) was created as the contextual framework for this research and was established by providing a complete overview of the significance and purpose of the research. Thick coherence was also created by providing a literature overview of the theoretical context utilized, a linking of comparisons and examples provided by the co-narrators with theoretical contexts and supportive literature, and by providing portions of the interview texts supporting themes and categories supported by the research.

Fifth, triangulation and corroboration were provided by the researcher as extensive follow-up occurred through multiple interviews with the co-narrators and as the co-narrators expressed similar experiences (Brantlinger et al., 2005). Probing by the researcher provided for a more detailed, in-depth, rich response by the co-narrators (Bryman, 2004) and allowed the researcher to pursue additional questions providing clarification and expansion on themes and concepts (Guba & Lincoln, 1981).

Finally, an external auditor examined and confirmed that the researcher "followed the basic framework of good qualitative research ... [expressing] no great concerns about the way the research was designed and carried out.... 'Overall, you have done a great

piece of qualitative research on a very important topic'" (R. B. Dieser, personal communication, April 25, 2008). External auditing and the other methods utilized in this research to establish interpretive validity have permitted the researcher to establish the credibility and trustworthiness of the research (Brantlinger et al., 2005; Guba & Lincoln, 1981).

"Interpreting experience ... involves representing reality [as one] create[s] and recreate[s] voices over and over again during the research process. Nowhere is this more evident than in [the use] ... of personal narratives" (Riessman, 1993, p. 16). Utilizing a narrative inquiry approach permitted the researcher to capture the stories of the co-narrators. Before listening to their lives, the co-narrators must be introduced to the reader.

<div align="center">Introduction to the Co-Narrators</div>

Three co-narrators participated in the research. Each revealed their lived experiences with uniquely situated descriptions of their journeys. Using pseudonyms, the co-narrators were Alice, Grace, and Helen.

Alice

Alice carries out the role of CIO at an institution that has grown rapidly over the years. With a student population between 23,000 to 24,000 students, many commute from the surrounding area. As I walked down the hallway to go to Alice's office for our first interview, she came toward me smiling, relaxed, and energetically said, "You must be Marilyn."

"Yes," I said, "Alice? It's nice to meet you." We shook hands and she took me to her office where we exchanged other greetings. Her office was relatively small for what I was expecting for a person in the CIO role. It was very comfortable and private and both interviews were conducted without interruption. Alice generally sipped on a flavored coffee while we talked, always offering me coffee, water, or soda.

Alice's background was in computer programming, specifically COBOL programming. She settled on this after coming to her current institution as a student from a small community and a family consisting of six children. She never dreamt she would go into a field related to computers since she had not had any exposure to computers or technology in her K-12 education. Once she took a computer class in college, Alice stated that she fell in love with it. Her interests initially were in physical education. She found herself changing her major three times during her freshman year, from physical education to business to information systems. Dumb terminals were much more common then and personal computers were just beginning to appear in the market. With an interest and background in math, Alice found the coding and logic related to programming easy to understand. Interested in business as well, she ended up getting a minor in business while getting a BA in Information Systems.

Her first job was as a COBOL programmer in Chicago working for a new private company. After working there for a year, she left, only to find out the company quickly collapsed shortly thereafter. She moved to another large city and again worked for a private company for about nine years as a COBOL programmer. She encountered many challenges in this "man-centered company," as she described it. After nine years, she

moved to a position as a COBOL programmer at her current institution. During her

fifteen years at this institution, she has been a programmer, manager of an information

technology support group for three years, and now in the role of CIO. Her current role

has spanned approximately six years. She is the first woman to serve as CIO at this

institution and reports to the Dean and Vice Provost of Academic Services.

Alice was married and is now divorced, without children. She is 45+ years of

age. She seemed to be quite socially active, often referring to groups of friends during

our conversations. Her computer display was lined with pictures of friends' and

relatives' children. She served as an Interim in the CIO position for about a year before

an external search was conducted. This search included applications from other men and

women as well as from Alice. Alice was chosen for the position. Her current

information technology organization is 40% female and 60% male.

Alice spoke with self-assurance as we discussed her experiences. She was not

afraid of hard work and putting in long hours. She was excited about information

technology and described herself as having a passion for it. As CIO, she was very

dedicated and knowledgeable.

Grace

Grace and I met in her office. When I first arrived, she was out to lunch and I

waited in the foyer for five to ten minutes before she returned. New to this institution,

Grace was not totally settled into her office. She was in the process of getting some new

furniture and getting her personal items organized and arranged within her office space.

Her office was large and comfortable with a meeting table to one side that we used for

our interview spot. Both interviews were relaxed and uninterrupted. Grace spoke openly

about her experiences and provided me with her full attention.

Grace was a very cordial and friendly woman. She mentioned that people often

characterized her as soft spoken. I found that she readily spoke-up, had a great sense of

humor, and was often quite outspoken as we discussed her career and experiences over

the years. She was the more "corporate savvy" of the co-narrators, having worked in a

variety of well-known, large organizations and businesses around the country. She was

also the more "business smart" of the co-narrators, recognizing and acknowledging many

covert and hidden agendas of others she had dealt with as she had earned her present role

as CIO at her institution.

Grace is currently married and has one biological daughter, one stepdaughter, and

two stepsons. Her father was a farmer and a minister and she came from a very large,

poor family. Grace is 45+ years of age and was very energetic. She was a "go-getter."

Grace entered the workforce as a secretary in a large corporation. Encouraged by

her supervisor to go back to school, she took programming classes taught through the

corporation where she was working. She became a programmer and eventually tried to

move up into better positions. She became frustrated while pursuing other positions, and

realized she needed a degree in order to advance. She went back to school and completed

a B.S. in Management Information Systems while working full time. Classes were

delivered at her work-site through an extended learning program the college offered in

the area.

Grace obtained a position with a large corporation as Manager of End User Support and later became a Senior Systems Analyst in the company. She often was part of an executive team, in which she was the youngest and only woman. While at this corporation, she volunteered at a local public college to assist with their technology needs. When an opening occurred at the college, she decided to leave the corporate world and enter higher education. She took a Director position in the technology area and was there for four to five years. She was recruited away from the college and took a state organization vice president position. While the position was to have focused on technology, it ended up being less technical and more administrative.

Grace moved on to a private university for five years as the Director of one of the technology departments. Again, as in the past, she was the first female in this position. Deciding she wanted to start her own company, Grace eventually became a consultant. While consulting for a large public organization, she decided to stay on full time with that organization and became its first female vice president.

She decided to leave this organization and begin work on her Master's Degree. During this time, her husband learned he was being transferred to another location. They moved; and she took a full time government position. After five or six years, they relocated to another part of the country to be closer to family. Again, she was recruited and encouraged to apply for her current position. With over one hundred applicants, three finalists were selected and Grace received the position. Grace is the first female in the CIO position at this institution. She reports to the President of the institution. Her current organization is composed of 25% females and 75% males. The institution has

between 13,500 and 14,500 students. Grace continues to work on her Master's degree in Public Administration.

Grace described her lack of fear in taking on challenges. She would apply for positions she felt she had the credentials and experience for even though she did not have the educational background. She recounted several experiences in which a company seeking a person would re-advertise the position to include a lesser educational requirement after interviewing Grace—hoping she would reapply. She credited her additional educational background as crucial in opening up doors for her professional advancement and development.

Computers or technology were not a part of Grace's life until she entered the work world. As Grace discussed her experiences, it was obvious she enjoyed learning about technology and fixing problems, during many of her early work roles, people had in getting word processing and other programs to function correctly. Her excellent people skills opened doors for her in dealing with supporting users of technology. As a CIO, Grace seemed very competent and focused on her leadership role. She made statements regarding her focus being that of strategic decision-making and oversight of her department's work for the institution. She had a clear definition of her role and others' roles within her organization.

Helen

Helen was very articulate and appeared to be a quiet, reserved individual. After following her directions for getting to her home, the location she chose for both interviews, I parked my car on a street filled with beautiful, large, older homes. Helen

greeted me at the door and invited me in where I met her husband. As he left to run

errands, we settled onto some very comfortable couches and chairs in her living room

with some refreshments. As I talked with Helen and learned more about her, I found her

to be very knowledgeable and confident. She had quite a robust laugh and was very

involved with the National Organization for Women twenty or more years ago. Both

interviews went relatively uninterrupted, except for an occasional pass-through by her

husband or cats.

Helen was a very good student in high school and wanted to be a high school

math teacher. Education was highly valued in her family and she was always encouraged

to go to college. She was the first in her family to even think about an advanced degree.

Although her parents did not have college degrees, one of her grandmothers and one of

her grandfathers were each teachers. She was never discouraged from entering the field

of math, which at that time was pursued by few females.

After entering college, she decided she wanted to teach math at the college level

rather than at the high school level. She received an undergraduate degree in math and

went on to graduate school at a well-known institution. At that institution, she earned

three degrees: a Master's in Math, a Master's in Probability and Statistics, and a Ph.D. in

Math. Helen has worked full time since acquiring her first teaching position. She and

her husband do not have children and Helen is 45+ years of age.

Her first teaching position was at one college in Wisconsin, while her husband

accepted a position at a different college in the state. They lived half-way in-between

each institution. Once there, she was urged to pursue the field of computer science since

higher education institutions were looking for faculty in this new discipline during the early 1980s. Without much background in computer science, Helen applied for and was accepted into a special program funded by the Sloan Foundation that retrained people from other disciplines in the area of computer science. While she taught during the year and participated in the Sloan Foundation's program in the summers, her husband went back to school pursuing a degree in computer science, since it was an upcoming, demanded discipline at the time.

After a few years, as she and her husband were looking for faculty positions, they both received offers and accepted them from Helen's current institution and have been there since the mid-1980s. Lacking a specific computer science department at the time, they received job offers and they accepted positions in the department of Mathematics with computer sciences being a sub-specialty in that department. Before they arrived to take up their new positions, computer science became its own department and Helen and her husband moved over to that department. Helen described her experience as a woman in this newly formed department as very welcoming. Her primary role, initially, was teaching programming.

Helen was very thoughtful and reminiscent as she described gaining tenure and becoming the first woman department head of computer science for three years. As personal computers entered the market, she became self-taught on their use. She was recruited for the role of CIO for Information Services by the then current CIO, a close friend and mentor of hers. Helen never thought she would be serving in such a role since she had not grown up with computers and her first experiences involving computers were

when she was an undergraduate student. She described this experience, which dealt with learning programming languages, as something she did not like that much. However, she did like the problem-solving aspect of it.

Once recruited into her current position, she served as an Interim CIO for a year before an external search was conducted that led the search committee, after reviewing the applications, to recommend to the Vice Chancellor, that Helen be retained and hired into the role of CIO for the institution on a permanent basis. She has been in this role now for fifteen years and reports to the Vice Chancellor. Helen's current information technology staff is 44% women and 56% men. Between 11,000 and 12,000 students are enrolled at her institution.

Helen spoke openly about her experiences, taking care in the articulation of her responses. Coming from the faculty, her demeanor reflected scholarship and intellectual astuteness. As the CIO, she discussed using principal-based decision-making as a guiding tool for her leadership. She was competent and clearly in charge of her organization.

<u>Summary</u>

This researcher utilized a complementary conceptual framework for this study focusing on the intersection of applicable elements from organizational theory and feminist standpoint theory. Relationships between the co-narrators' experiences and the conceptual framework of feminist standpoint and gendered organizational theories were ascertained. The nature of executive level higher education information technology leadership, through the lens of the perspective of lived experiences of women CIOs, and

the intersections of gender roles and socialization, within the structures and functions of

information technology in higher education institutions, were explored and investigated

utilizing the methodology previously outlined.

CHAPTER 4

VOICES FROM THE FIELD: DATA ANALYSIS

This research explored the nature of executive level higher education information

technology leadership through the lens of the perspective of lived experiences of women

CIOs. The intersections of gender roles and socialization, within the structures and

functions of information technology in higher education institutions were also explored.

The co-narrators were given voice as the higher education CIOs at their institutions while

opportunities and obstacles encountered in achieving their current positions were

investigated and documented. Methods utilized to overcome or work around the obstacles

were discussed. The genderedness and jurisdiction of the information technology higher

education environment were explored and examined.

The co-narrators introduced their stories with uniquely situated descriptions of

their journeys. These cumulative accounts are presented in the data analysis, revealing a

number of themes and a variety of categories characterizing the co-narrators' paths to

their positions. These are presented in the interpretation by the most important first.

Each of the three co-narrators was the first woman in the CIO position at her

institution. As "pioneers" in the field, "acceptance" by others slowly occurred as each

co-narrator was "a female in a male traditional role."

Pioneers

The co-narrators modestly commented about being a "pioneer" in the higher

education information technology field. Grace stated: "... (M)y experience as an IT

leader regarding being a female, I think that I am a pioneer in the area. And of course

being a pioneer, there's lots of obstacles that you have to overcome. (O)ne of them is

[being] a female in a male traditional role as an IT leader...." Grace stated that in the

past she viewed herself as an "outsider:"

> Well you know I used to think that way. And I guess within the last several years, maybe four to five years, I don't really consider myself an outsider. I do consider myself a pioneer. But not necessarily an outsider, because I think that males are more accepting of women in leadership positions. And, you know, I am part of a large CIO network which most of them are males.

Helen and Alice both confirmed that they, too, had viewed themselves as an

outsider in a traditionally male-dominated field. Helen expressed her awareness of being

an outsider in the past, but, in regard to today, stated: "Yea, but I feel much more like an

insider." Alice stated that when she "first started to get into management here, and then

definitely this last [CIO] position, there were times where I felt like an outsider." Today,

due to the co-narrators' experiences and understandings of information technology and

their knowledge and skills, they expressed overall situations of support by staff, being

trusted by supervisors, and feeling "good" about their experiences and the "different

opportunities" provided by the field of higher education information technology.

Within the unique environment of higher education, the co-narrators took on the

role of "pioneers" as they overcame many obstacles and experienced many opportunities

in the traditional male environment of information technology in higher education. The

co-narrators viewed themselves as "insiders" in this field, having overcome being an

"outsider."

Grace noted the complexity of the higher education environment: "(I)t's much

more complex and the complexity within itself makes it a lot more challenging and puts a

lot more obstacles and opportunities at the same time [in front of] women." Alice felt

that in this unique environment, as compared to the business environment, she had the

opportunity to "review, research, and implement many more and different technologies,"

making her work more meaningful as "students needed to learn on newer technologies."

She passionately described her experience of working in higher education information

technology as very rewarding due to being in a "helping" environment assisting the

"faculty" and "students" who are "the next generation that will hopefully make this world

better," rather than working on business "projects to make the bottom-line, to make the

money." The higher education environment provided opportunities for meaningful

change through technology implementation and support as the co-narrators led their

organizations.

The co-narrators described their overall higher education CIO experiences as

supportive and positive. While higher education information technology is composed of

"complexity within itself" and created various "challenges" for the co-narrators, it also

provided them with many opportunities as "pioneers" in the field.

<u>Opportunities</u>

The co-narrators discussed opportunities they experienced during their career

development and professional advancement that enabled them to obtain their positions of

information technology executive leaders in higher education. These opportunities were

available to them as a result of certain elements being present in their lives or certain

experiences that occurred. Possessing certain personal strengths was a topic all co-

narrators discussed as very important in providing opportunities. The elements of

communication skills, initiative, and leadership skills were personal strengths that enhanced opportunities for professional advancement. Family support was very important in providing opportunities as family members provided encouragement and assistance for the co-narrators' professional advancement.

Mentors were important to the co-narrators and provided opportunities for the co-narrators as they were available throughout the different stages of their lives. Mentors offered advice and guidance enabling professional advancement for the co-narrators. Various combinations of education, knowledge, and experience provided the co-narrators with opportunities in achieving their leadership positions. Networking with others and involvement in professional organizations offered the co-narrators opportunities to interact with other information technology leaders as well as "contribute to the profession."

Personalized recruitment provided encouragement and resulting situations that "turned out awesome" for certain co-narrators. Professional advancement opportunities were enhanced through organizational support programs and initiatives. And, finally, affirmative action enactment provided opportunities for the co-narrators enabling them to obtain positions of information technology executive leaders in their higher education organizations.

One area greatly impacting the opportunities experienced by the co-narrators for professional advancement was that of personal strengths each possessed. The co-narrators were assured and confident as they discussed their personal strengths.

<u>Personal Strengths</u>

All three co-narrators reported that their personal strengths offered opportunities to them in either acquiring or maintaining their CIO position. The women identified communication skills, initiative, and leadership skills as personal strengths that were very important in enhancing opportunities for professional advancement.

Communication skills were mentioned by all as a very important personal strength and as very important for those striving for leadership roles. Effective communication skills were seen as critical to one's success.

Helen stated that communication skills may provide women with an advantage in professional advancement:

> Communication skills are critical and that's an area where women are often at an advantage. I think it's certainly been the case for me. I think I'm a good communicator and I think it helped me a lot....
> ... I do know that we have a strong bias in favor of strong communication skills. And, in fact if anything, that probably hurts the men more than the women. Because probably our worst communicators are our systems people who, you know are just the happiest clams if they can sit in their office and never talk to anyone. [both laugh] ... (W)e work hard with them to get them to communicate and we value strong communication skills that many of our women typically have.

Alice described her communication style and skills as vital to professional opportunities. She highlighted listening as one such essential skill:

> ... (I)f I need to sit back and listen, I'm perfectly comfortable doing that. It just depends on where I'm needed. Where some people have to be in control or run the meeting and others never want to run the meeting....
> I'm one if I'm not confident I understand what you want or need, I'll ask again. "Now, you know, I want to make sure I understand, you want me to do this." And I probably, I might even overemphasize that with my Associate Directors and people cause I want to make sure they understand what I want, and

not be vague and give me something that I'm not looking for. So I may repeat myself in order to make sure the point is across.

Alice also stressed the importance of staff having someone to talk to and her consistency in being available to others when personal or work-related issues need to be addressed. She confirmed that women are generally considered more nurturing and perhaps that is why she considers herself a good listener:

> If somebody needs to talk, no matter who it is, they should feel like they can go talk to their direct supervisor or myself or my boss.... And it probably goes hand-in-hand [that] I am that type of person, I will listen. I can be direct and forceful and demanding when I need to be. But for the most part I'm really steady—level. I'm not up, I'm not down, I'm there for you, whatever you need, tell me.

Grace was emphatic as she confirmed that listening skills are an essential skill for those in leadership positions: "And listen to what's going on and listen to what's *not* going on, what's *not* being said, the verbal and the non-verbal is very, very important."

Listening skills were considered an essential communication skill by the co-narrators. The ability to effectively listen was an element that provided opportunities for the co-narrators' professional advancement.

Alice also believed that communicating in a non-threatening manner was an important skill for those in leadership positions. Alice stated being respectful of others was important as a personal strength in creating opportunities. She stated, "I don't talk down to people." She provided an example of how respectful communication assists in helping staff understand technology:

> ... (S)ome staff, like clerical support, administrative staff that [are] very frustrated, they call and they immediately cut themselves down by saying "I know nothing about technology and I can't get this to work." I think my approach is to make them feel that's not a true statement: "you do know something and you can

learn more; you have the opportunity it's just someone needs to show you." And I usually say, "you know what, I couldn't do your job unless you showed me how to do your job...." People just feel more comfortable because you're not coming in going "oh, well you just do this, this, and this. It's really simple...." (Y)ou don't approach it that way. You say, "this is hard to understand sometimes especially if you don't do it very often." Just whatever the situation is trying to make them feel ... like it is a big deal to them and I'm not going to minimize that. They're trying to do something for their job that they can't do or can't figure out.

She stated that "women, just in general, are less threatening" in their communication styles. "I think it's probably more common in women. I think the men tend to be more what I'll call techies or geeks or they like to curl out the acronyms...." She confirmed that her communication skills and non-threatening style opened doors for her:

> I was approached ... because of the work I was doing on large projects, on how I could communicate with users and follow-through on things and get the work done. So they brought me in to help bridge that gap and to be able to work with people. You know, understand the technology but yet to be able to talk to someone and not make them feel threatened or feel that they don't know what they're talking about ...and just to help in that area.

Grace also communicates in a way that is not intimidating or threatening to others. She described herself as having an: "(A)bility to talk and connect with people" whereby "people don't feel threatened...."

Alice and Grace considered communicating in a non-threatening manner as an essential element of communication. Having this skill provided opportunities for them. Another essential element of communication was mediating skills.

Grace confirmed that her communication skills involving mediation aided her professional advancement:

I've always made up in my mind that I would try to work and communicate with wherever the issues were. (T)hat I would try to communicate through to that person and just see what the issues were and come to a compromise.... (A)nd I really left the gender out of it and I left the race out of it.... (A)nd I purposely did that. And you know so I was able to move up....

You have to be able to communicate and effectively communicate. Making statements and talking to someone is not necessarily communicating. You're talking but you must really be proactive in making sure the message is going across and that they're getting the message and that part of communication is listening....

Helen was also strong in listening and hearing multiple sides. Effective communication skills enabled her to serve as a mediator in difficult situations:

... (M)y other big strength is that I think I'm pretty good at listening and hearing multiple sides of ... any kind of conflict. (L)ike many people when I first hear about a conflict and I hear the first person's version, it's easy for me to kind of get on my high horse and be on that person's side. But I'm almost always able to step back from them and say okay now I need to hear the other piece of this.... (A)nd I think I'm a pretty good mediator of bringing people together to work out things.

Mediation skills were considered an essential communication skill by Grace and Helen. The ability to effectively enhance communications with mediation skillfulness provided the co-narrators opportunities for professional advancement.

Good communication skills have enhanced the professional advancement and provided professional opportunities to the co-narrators. The co-narrators stated three essential skills of communication skills were listening, communicating in a non-threatening manner while being respectful of others, and mediating issues or conflicts by "working out things."

Taking initiative is another personal strength that the co-narrators credited to enhancing career advancement. The importance of taking initiative was emphasized for

the purpose of independence, recognition, and reward. The co-narrators confirmed that seizing opportunities and committing to success contributed to professional growth.

Alice found taking initiative was very rewarding:

> The opportunities really of taking projects and saying, "you know what, I'll volunteer for that, I'll do this, I'll do whatever it takes." Versus being told, "you're going to do this." I was the type that would volunteer and say, "yea this sounds interesting. Let me have it." And you know, for six months I was knee deep, nose deep whatever, in a project that we had never done before and figuring it out. And make it happen in a certain deadline.... And I feel that I've done that [taken initiative] in all of the challenges and opportunities. It's like you see an opportunity and if you volunteer and if you succeed, people, well [the college] has rewarded based on that.

Helen commented about how taking initiative may impact interpersonal interactions: "I'm sure there have been instances where I took initiative and someone didn't agree with me. And said so.... I think it should be okay for people to disagree with me when I'm taking initiative."

Grace provided an interesting account of a time she took initiative as she and her supervisor discussed the lack of work assignments for her at the company:

> When I had my one-on-one with my manager at the time ... he was a really, really young guy. And, he told me to go shopping or something. And I said, "Excuse me! I need to learn something." (S)o he said, "Oh I may have a few things for you to do."...
> The next thing I knew I got a 17% increase and I became an office manager.... (A)nd not only was I over the clerical staff, but I coordinated the projects for the guys that didn't want to give me the time of day. I'm not a vengeful person, I don't try to get people back, and so we ended having a real improved relationship....

Grace also stated that taking initiative by providing good customer service has been an important personal strength: "(I)f I say I'm going to do something I really, really, really, really try hard to do it. If I can't do it, I get back with that person."

Taking initiative can often lead to juggling many projects at once. Helen stated that one of her best personal strengths was that of being well organized and able to multitask.

> I think one of my best strengths is that I'm extremely well organized and that has always helped me in administration.... You know there's a lot of paper to be juggled and a lot of tasks to be done often—multitasking. I think this whole thing about being well organized ... and able to manage a lot of tasks at once and just keep things going is one strength.

Helen added: : "... (I)t's a stressful job that a lot of people make a lot of demands on you and you have to juggle a lot of things...." Grace discussed multitasking being a strength more of women than men: "And women are, tend to be able to multitask a lot better. Which is a strength."

Taking initiative provided many opportunities for the co-narrators. Using multitasking skills, they were able to expand experiences and succeed at addressing multiple challenges. Taking initiative provided growth and enhanced career opportunities for the co-narrators.

The co-narrators emphasized how their leadership styles enhanced professional opportunities. They also discussed how their leadership styles affected their staff and others.

Grace described her leadership style as results-oriented and focused. She characterized her style as self-confident, a risk-taker, and diligent. She delegated responsibilities, but also insured the staff had the necessary tools to get the job done. She connected to others with credibility and provided mentoring when necessary. Her mentoring style was participative:

I think that I'm more of a mentorer or coach. I think I'm more participative. ... I tell everybody I'm really here to provide some strategic direction, remove obstacles and provide you with the tools so that you can go and do what you need to do.... (A)nd if you need me to do mentoring or I see that you need help, then it is part of my job to help you with that as well....

(B)ut I am a results-oriented person. (M)y approach is just different from most results-oriented persons. I don't beat people over the head for their work. But I do follow-up on their progress and I think that's part of management....

Grace discussed differences between private and public higher education institutions in the decision-making process. Depending on the institution, this often slowed her down in achieving results: "(I)t was just a different environment [private institution University A]. Things moved faster, decisions got made quicker—those types of things, because it was a private school." Due to this environment, she discussed the need to "plan ahead":

... (I)n the private sector, private [higher] education I can actually move faster.... (F)or the most part these were non-unionized environments and so it didn't require the lengthy process of what I call the vetting process—talking to everyone before a decision is made. However in the public institutions, it takes awhile to talk to everyone from the student union president to you know the interfaculty president, the IFO president, and the various presidents and groups, collective bargaining units, so it tends to slow things down ... and I think it forces you to plan ahead to meet certain deadlines. I think that's one of the positives. You do plan ahead. It's not necessarily a reactive type of situation.

Grace found planning ahead helped her achieve results in a timelier manner.

Empowerment was another aspect of Grace's leadership style. Grace thoughtfully discussed how she empowers others to make decisions:

You know I think that the point of work being participatory has always been there, but I think what I do now is I listen a lot more. And [I'm] not so quick to want to get in and provide a solution. I provide options. And if I'm talking one-on-one to someone about a problem or an issue, I just really kind of inquire as to have you thought about this or have you thought about this, but ultimately let them make the decision.... So I think I kind of stand back now and just say well

okay, well this person is capable of making this decision. They may need a little guidance or thought provoking type discussion, but pretty much let them make the decision.

Grace discussed the complexity of higher education and how she builds consensus

in order to achieve results:

> ... (O)n the academic side of higher ed those people are really about planning and taking time to massage and analyzing, and so it stretches everything. That's a whole layer of complexity when you're talking about IT, when you've got to be able to be responsive and react quickly.... Well, you can't do that as quickly if you have to go around and talk to everybody to come up to consensus. So I think it's consensus driven, which is not necessarily true in the business sector....
>
> I think it probably has hindered me in that I'm a very progressive person and results-oriented and I like things to go faster. And when you're working with a group of people and trying to get everybody's perspective and needs met that does slow the process down.

Grace discussed that the ability to connect with others builds one's credibility.

This was an important quality of her leadership style. Grace highlighted how she cares

about people: "I think I connect with people, cause I do care about people, I do care

about what I say, how I treat people, about their well-being...." While dealing with

"people problems" is still uncomfortable for her, Grace tries to be a good listener and

understand the issues: "I didn't like the people and personnel issues. I hated that. And I

still don't like it today. (D)ealing with [all the people problems]."

Being able to build credibility provided colleagues and others evidence of Grace's

competence and commitment. To her, credibility must be established quickly in a new

role or position:

> Once something is delivered or once something happens, positive, then that's [credibility] no longer the issue. And so I usually have to go in looking for that positive thing to happen pretty much right away, whatever it is, [and] make sure I

deliver what I say I'm going to deliver, get it out of the way, build that credibility that rapport and then usually, usually it's okay.

Grace eagerly provided an example of how she built credibility at one of the universities where she worked:

> ...I'll go back to my [University A] days when the remote site that I was responsible for used to use what they call dialup modems? You probably remember that!... And we had a zillion of those. And it was very expensive and one of the things that I did was do an analysis and reduce the costs.... And because there was a large workforce and everybody had a dialup modem and there was security implications and all types of other things as to why we should not have that type of technology in place. So one of the things that I did was I partnered with the main [University A] Campus because they had internet, they had everything that we really desired. And one of the things that we did was come up with a business case that justified why we should get rid of the modems and go with a high speed Internet and fiber optics connectivity.... And I even showed a cost savings although we were paying for that connection to the main campus [charge back system]. I was able to show significant savings. And I think that that gained a lot of credibility and I was able to get the buy-in from executives within I would say the first hundred and twenty days that I was there. And also another example is coming up with the strategic plan for that particular remote site. Talking with people, finding out what their needs were, and actually documenting a strategy and putting together a roadmap for getting there.... And then you know milestones and working through the various milestones to deliver. So that really built credibility.

She also described building credibility in a different position: "I had this knack for talking to people and explaining things and people felt comfortable around me. (S)o they would always put me out on the front line where I had a lot of interaction with people in management."

Learning personal and professional information about personnel helped Grace connect with others:

> And I think that that's one of the things that as I go around talking to especially new people, in a new job, new role, is the ability to connect with them not just on a personal, but a business level, in that I will ask them questions about their

business what they do and really try to learn as much as I can about their operation so that I can be more of a benefit to them in helping them do whatever it is they need to do.

She also talked about up-coming committee work she will be involved with where

membership has traditionally been male. Connecting with credibility was again

important:

> I think once we actually start working, you know, actively on that committee, just sharing information and my experience, my knowledge of things that work and don't work and pros and cons. And I think that once I start sharing that my male counterparts on that committee will really understand well, yes she really knows what she's talking about because they can connect with me.... Right now, we're both in technology so we connect that way, in higher ed we connect that way, but as far as network and security infrastructure, they have no idea what my knowledge level is, what my expertise is in those particular areas. So once I start talking and sharing and just being part of the team, I think that, you know, the credibility will be there.

Grace's leadership style also included self-confidence and taking risks. She

discussed pursuing a position that reported directly to the President:

> Everybody thought I was crazy because the position reported to the President of the company and it's like you know their going to hate you, this, that, and the other, and da da da, and so I said well you know it's just a chance that I have to take. And my philosophy was that when I came here I was looking for a job so when I leave I'm probably going to be looking for a job too.

Grace noted that diligence was an integral component of her leadership style:

"...(F)rom a technical standpoint, I've always been a due-diligent person, if I get my

hands on something, I'm going to research it to death. [Her husband says:] 'My

goodness you're the most focused person on earth.' (A)nd sometimes it's good and

sometimes it's not."

Grace also added that the information technology environment helped her

approach issues from different perspectives:

> I think it [the IT environment] helps me to look at things from different
> perspectives. I think one of the biggest things that it has helped me to do in my
> career path is to work with cross-functional departments, look at cross functional
> needs, look at things, the big picture as well as being able to adjust and look at
> things from a specific standpoint.... And I think that has helped me not only in
> my career path but in my entire life, outside of work as well, to be better at
> analyzing situations, to come up with the best possible solution and also to help
> me work with people and compromise.

Grace spoke in a tone of confidence as she described her leadership style and how

it had provided her with opportunities for professional advancement. Her leadership style

included the elements of results-oriented, focused, risk-taking, and diligence. Connecting

with others by building credibility was an important quality of Grace's leadership style as

was the ability to apply different perspectives when analyzing situations and looking for

solutions.

Alice described her leadership style as personable and flexible but yet decisive

and confident. She trusted and was reliant on her staff for delegated duties. She stated

her role was to support her staff and have them succeed. She described an open-door

policy as her leadership philosophy:

> (I'm) very open, very approachable. I've actually had staff members who don't
> report directly to me come to me and not their direct supervisors because they feel
> more comfortable talking with me. Some of that I think is that I am a woman.
> And that their direct supervisors could be male and that it's harder for them to talk
> to them.... (M)y philosophy is we all have an open door policy.

Alice also connects with credibility: "And I do think I interact well with people.

I've never heard somebody complaining about that, that I didn't support them or go-to-

bat for them. I look at all things considered and say this is a good road to go down or here's why we shouldn't."

Alice's leadership style also included delegation and reliance on her staff for their expertise and knowledge: "I certainly rely on my Directors underneath me to provide the detail and advise me. I'm not a person who feels they can know everything. I can't be an expert in everything and that's why I have people that work for me who are."

Alice discussed how her leadership style has changed to providing "more definition and guidance" over the years:

> It's just realizing it's sort of like a business we're running here to a degree where we have expectations and demands that we need to meet along the academic calendar year. It's just a little more spread out than the bottom line dollar and a business.... But again ... I think just learning that [many times] you need to give [staff] a timetable or it won't get done.... So as far as demanding goes, it's not like I'm hitting the table yelling screaming, I don't work that way. I think it's just coming out and saying this is what I expect and whatever it takes you need to do it. For not me, it's for other reasons, it's for the students that go here or the faculty that teach here. But I think I've become more ... giving people more definition and guidance instead of being too ambiguous.

Alice summed up her thoughts on leadership:

> I feel that leadership is very important and the leadership qualities of someone who can be confident yet can communicate, can listen, can accept ideas, can admit when they're wrong or can say "okay you know what—let's try that cause this isn't working." I've never been afraid to step back and say that. I'm not one that it has to be my idea. I like to give credit to others when it's due. I don't like to be in the limelight. That's not where I want to be. I want to be a support, you know. So I think that helps a lot.

She stated that she had been fair to her staff and provided them with opportunities:

> And when I look at the opportunities here, we've also allowed and provided the same opportunities for males. There's been a lot of male advancements for

people that have been here a long time.... (J)ust recently we went through a reorganization and the people I used to work for who work for me now, were promoted and rewarded and the structure was changed to give them more responsibility. And so I would like to think we're fair in rewarding people who really work hard—no matter where they stand in the equity order.

An important personal strength for Alice was her leadership style. Alice spoke with assurance as she described her style as being flexible yet decisive and confident. She supported her staff, was fair to them, and celebrated their successes. Alice relied on her staff for their knowledge and also connected with others by building credibility.

Helen described her leadership style as including delegation to enhance the empowerment and trust of her staff. Helen discussed how she values the technical expertise of her staff and tries not to micromanage: "I highly value my technical, the technical expertise of my staff.... (I)n our department we're organized into teams and teams have a lot of responsibility for making the day-to-day decisions. I try not to micromanage although I'm willing to step in and get involved if I see that things aren't going well."

Helen guided her staff in problem-solving through questioning:

... (C)oming out of computer science, even though I recognize that my staff is skilled and know a lot of things I don't know, at least I can ask the right questions.... I understand what programming is like. I understand the kinds of approaches one uses for problem-solving and so I can ask questions along those lines that help my staff in answering those questions, help them break through whatever problem they have.

Helen provided an example of trusting her staff and delegating responsibilities to them:

I can remember not too long ago I was visiting with my cousin who is a veterinarian but also teaches veterinary stuff. I was talking a little bit about my

role as an administrator and a manager and she said, very, very decisively, "Well, I would never ask anyone to do any kind of a job that I couldn't do myself." ... (A)nd I found that made me really angry. I felt it was a slam to my staff.... I think you can take that point of view if your managing a McDonald's.... You know you can learn how to run the french fryer and you can learn how to cook hamburgers, and you can learn every aspect of the business. But when you're in IT, you're hiring skilled professional people who are very good at what they do.... (A)nd they need to be given that free reign to do what they do best.... (A)nd I couldn't possibly learn every aspect of everything that they all do. I don't think I could do that.

Helen valued sharing successes with her staff: "... I get a lot of joy out of seeing my staff be successful. And I'm just as happy if not happier, to brag about their accomplishments as I am to brag about my own.... I know that there are leaders out there who don't think that way. They are leaders who want all the glory to come to them. And I am not one of those."

Helen cared about people and took an interest in their work: "I think it's helpful when I show an interest in what people are doing." She discussed her interest in a building project:

> ... I like to go to these meetings ... and I like to ask questions. And the fact that I'm asking them questions about their work and showing interest, and I truly am interested, I think that goes a long way toward developing the kind of rapport and respect between us that might not be there if I just kind of waltzed in and said, "Are you done yet?"

Helen proudly conveyed that she had been "a strong role model for women students." She discussed her struggle to be fair to women staff members, while realizing she can't please everyone: "I've always tried to watch myself very carefully as a leader to make sure that I'm being fair to women in my field, in my department. (S)o it's often

been a struggle for me to deal with women who aren't particularly performing well or

who are unhappy doing their jobs."

She provided an example of a "difficult" situation:

> I did have one employee who was a former student of mine and a woman--who
> was very bright. (W)e hired her to work with faculty. We already had a man in
> that role so we were hiring her as a second person ... for faculty support. And
> after a number of years of maybe three years, four years of working with us, she
> became very disenchanted and unhappy. And because I had this personal
> relationship with her, as her former teacher and a mentor, I found it extremely
> difficult to deal with her unhappiness, even though I could see that in looking at
> her job history, she kind of had a pattern of that. She'd take a job and she'd be
> good at it for two or three years and then she'd become bored and unhappy and
> leave....
>
> I could see that it wasn't all my fault but it still felt like it was my fault ...
> somehow. I wasn't doing the right things to make her happy. She eventually
> ended up leaving the job....
>
> (H)er manager was a man who reports to me. I think he tried hard to make
> things better for her, but I don't think he took it personally.

Helen's perception was that the male manager did not take the situation as

personally as Helen. "I probably take things pretty personally when I see a woman in my

unit struggling.... I feel like I should do more and yet I also believe that people have to

pull their weight.... And that's just a dilemma."

Helen continues to serve as a mentor to male or female staff:

> ... I have a younger manager reporting to me right now that I'm trying to mentor.
> He's made it clear to me from the get-go that he would like my job when I retire.
> And he just finished his Ed.D. and did it in a way that the emphasis was on IT
> kinds of thing. But I probably have a bias toward computer science. I've still
> encouraged him to take some classes in computer science just because I think if
> he has a weakness—it's understanding what it is that the really technical people
> do.

Helen discussed how her leadership style had been strengthened by becoming

more decisive:

Oh, doesn't everybody always say that they're consultative? You know [laughs]… But I would say that as I've gotten older I'm more decisive than I was when I was younger…. I don't mind decisive, I sort of like decisive…. But you know if someone balks and tells me that I'm making the wrong decision or questions something, I'm pretttttyy good at listening to them.

Helen's leadership style included delegation and placing trust in her staff. She valued the expertise of her staff, celebrated their successes, and cared about others. Her style included being fair with staff, serving as a role model and mentor, along with being decisive.

The co-narrators' leadership styles allowed them to effectively perform their roles and provided opportunities for professional advancement. Possessing good communication skills, taking initiative, and having effective leadership skills were personal strengths of the co-narrators. The co-narrators discussed important elements within each of these areas of personal strengths that contributed to their professional advancement and work.

Family Support: "You Can Do Whatever You Want To Do"

The co-narrators discussed opportunities provided to them due to the family support and encouragement they each received. Each had specific remembrances regarding words of encouragement and family assistance.

Helen discussed the strong family support she received from her parents and grandparents. She stated that she was encouraged to pursue an advanced degree:

> … (T)here was some sense in which education was strongly valued and I was always encouraged to go on. (T)here was also a sense in which I was kind of breaking new ground. I was the first in my family to even think about advanced degrees. I think if I ever got told that math wasn't a career for women, my parents would have countered that…. I have good strong support from my

parents. They paid for my undergraduate degree and then encouraged me to go on and I was able to support myself through graduate school.

Helen emphasized that the strong support helped her to minimize stress and overcome unnecessary worry. She described how family support guided her career path:

> I think I learned at a fairly early age from my father to NOT worry so much. He really helped me and worked with me to overcome that cause I probably was more of a worrier when I was young....
>
> I think my father has been the most important role model in my life as far as my professional life is concerned. My mom has been important to me on the personal side. ... (M)y mom barely got through high school. She wasn't a student, she didn't care about academics, she couldn't wait to get out of school. My dad and I always had much stronger bond, and I think he valued more the kind of work that I was trying to do.... I was going to say my parents were sort of surprised that that was my first reaction [wanting to go into math], but now that I think about it, my mother's father was a math teacher. So I think that I had some genetics in the family and I kind of identified with him when I chose math as a field to go into. And so my mother's work in the family at the family resort, was to be the bookkeeper so she sort of understood the power of numbers.... But I knew even when I was in high school being a girl that was very good in math was unusual. I felt unusual.... Most of my classmates went into English, took literature classes, and I'm taking all the math classes and there weren't many of us that did that.

Helen's family support provided her with important guidance and personal assistance. She spoke fondly and caringly of her family. Through their guidance and assistance, Helen was able to pursue an advanced degree, minimize stress, and overcome unnecessary worry.

Alice similarly received support and encouragement from her parents. Family support provided motivation for her to achieve ambitious goals:

> I also want to say that my father, although he's sometimes a real pain and very harsh, he was very harsh on us kids, but he always said "you can do whatever you want to do." You know, you have that capability. He never said cause you're a girl you can't do this. He always said, "you can do anything if you want to do it."...

So I also give him a lot of credit for instilling that in me. That I have the confidence you know. It's not that I don't get nervous and think that I can do everything. I do get nervous in applying for jobs and trying new things but I also have that strength of saying if I want to do this I know I can do it. It may not be perfect but I can do this and I can move forward. And I know I got a lot of that from him....

(M)y father, my mother, both [said]--you can do what you want to do if you set your mind to it. Sky's the limit type deal. Encouraging me to go forward and do those things. And my husband during the time I was married was for the most part, supportive.

Grace also reported that her parents were very supportive. Her family instilled a strong work ethic as well as morality:

And my parents were very, very supportive. I came from a huge family very, very poor. Seven girls and seven boys. And my Dad was a farmer and a minister.... (B)ut he always believed and he always instilled in us, that you can do whatever you want to do and you can be whatever you want to be.... They [mother and father] instilled working hard and our moral values and community service and outreach and helping others.

All of the co-narrators reported opportunities were made available to them through family support. For each, their father was important in helping provide such opportunities. Grace and Helen also observed male family support in their friends' families or in their staff. They discussed how the changing role for men within families has supported career advancement for women. Grace noted that this stay-at-home husband role was helpful to women: "(I)n fact a lot of my girl friends got married much later than I did. And so they went on and got their careers and their law degrees and everything. And so they got married later and they don't want to stop working so their husband is the [stay-at] home person."

Helen added: "… I am just thrilled with young men these days [and] the way they're parenting and the value they place on their children and the even-handedness with which they view their girls and boys."

The co-narrators spoke highly of their families and the support received. They also spoke about the positive effects of the changing role of men within families. Family support provided these women with important opportunities for career advancement.

Mentors

All co-narrators discussed how career opportunities were enhanced by positive relationships with mentors. Their mentors "showed them the ropes" and offered valuable advice.

Helen energetically talked about mentors in high school and college, as well as past and current colleagues. The mentors helped by confirming her competence and by providing encouragement:

> … I've been really lucky that way [having mentors]. Even right from high school, I've had a high school math teacher who was extremely supportive of me, recognized my abilities early on, and encouraged me at every turn.…
> (W)hen I was an undergraduate I had a strong bond with several faculty-- almost all of my mentors have been men. (T)here were some women faculty that I liked a lot when I was in graduate school but my dissertation advisor who remains a very close personal friend is a man. (M)y undergraduate faculty were instrumental in encouraging me to go to graduate school and I might not have even thought of that if it hadn't been for them.…
> Mentors during my graduate school days were men, and even in my career at [this University] most everyone that's been a mentor to me has been a man with the exception of [two women].…
> Primarily they let me know that I was good at what I was doing. I think that like a lot of people I suffered from some insecurities and you know, lack of belief in myself. I certainly don't have the kind of ego that some other people have. … (I)t always helps me to do my best if I get told by my mentors or people that I care about that I'm doing a good job.

Helen stressed how her mentors prevented her from dropping out of graduate school and guided her to administrative positions:

> ... I think it would have been much harder [without mentors]. My mentors have been really important to me.... The most likely time that that would have happened [changed direction] was when I was in graduate school. I actually failed one of my preliminary exams. I think I had to take three or four of those. And I had to retake this one. I was really upset about that. Failing an exam was not something that I allowed myself to do.... If it hadn't been for several mentors telling me it wasn't that big of deal and I could take it again, that I might have dropped out at that point....

Helen confided that without the encouragement of a mentor, she most likely would not have pursued an information technology CIO position: " ... (H)e came to see me and said 'I'm going to be leaving and moving on and I want you to apply for my job.' I don't know if it would have even occurred to me to do that if he hadn't done that." Helen's mentors "recognized her abilities early on" and "helped her do her best." Without her mentors "it would have been much harder" for her.

Alice eagerly recalled how mentors helped her develop drive and ambition. She credited mentors with helping her to figure out where she wanted to go in life and providing valuable experiences:

> I can say in my high school year, I really looked up to ... the coach [who] coached everything, basketball, volleyball, softball. I really looked up to her and respected her and her demands.... You put your best effort into everything. It was okay to not win as long as you tried. You brought your best. I really looked up to her and how she handled things. I feel that she mentored me and guided me and helped me develop more values and the drive that I have....
> (A)nd in getting into the computer science side of things, my advisor, who has since retired here, we really hit it off and I really respected him and he mentored me and guided me and again I felt like his message to me was you can do anything you want to do also. And it was interesting because when I graduated and left and then came back he was still here. And we would talk once in awhile

... and ... I remember his comment, he said "Well when are you going to become director?" And I looked at him and I laughed and I said, "I don't want that job." I said "that's too political for me. I just like to work." ... And he just laughed at me and he said, "Okay." Well then when I ended up applying for that [director] job and getting that job, I went back and talked to him and said, "How did you know?" [laughs] And he just laughed, he goes, "You're not done."

And then within IT, ... [my mentor] would nurture me and take me to a meeting and have me run it instead of him. He goes, "I'll just be there ... if you need me", which was funny cause I'd start talking and then he'd jump in. He could never NOT talk. But it was interesting because he gave me the experience that I wouldn't normally get in that position. He would normally do it. But he wanted me to do it. And I look back and unfortunately he knew he didn't have long in his life and he was also grooming me.

Alice highlighted the importance of getting both help and advice from mentors.

She said:

I received a lot of good advice and I was fortunate to have many positive people in my life. I don't like negative people so I try and stay away from them. I gravitate towards more positive so I think I'm very fortunate in that I had that in my life and continue to have that. I've been very fortunate and I've taken my opportunities and used them well and wisely so I'm thankful for that.

Alice realized that her mentors helped her grow and learn:

I think that all those people were at different stages of my life for the growing parts of my life. (T)hey each helped me at different times. I think it was really just looking at challenges, how to face them, how to realize that you need to pick your battles. You need to pick what's most important versus something that you may be totally right on but it's not worth ... whatever grief it's going to cause you or someone else in the big picture. I think it's just learning how to deal with people with situations.... Learning more about politics. I always said I didn't want to be in a position where I had to deal with that and look at me.... So obviously it wasn't as bad as I thought it was going to be.

She also attributed her self-confidence, in part, to her mentors. Those mentors influenced her perception and understanding of corporate situations:

I don't think I would have as much self-confidence as I do. And I don't mean that to be arrogant or in a bad way. I think for a leader you need to be confident in what you do and in the decisions that you can make and also the ability to say I

was wrong, or what I need [is for] you [to] take this because you know more about this than I do. I think just watching them [mentors] and their input in my career.... I possibly might be but I don't think I'd be as well-rounded and I guess a contributing employee as I am today.... I think their influence, because I am very self driven and have been since as long as I can remember.... (B)ut just the skills ... and the well-roundedness of looking at situations in a big picture instead of wanting to succeed and [be] driven in a bad way that hurts other people along the way—and not to say I would do that—but I'm just saying I think [I'm] more well-rounded and understanding of situations around me as I go down this path ... because of these people.

Alice concluded that the role of mentors was not to provide answers but rather support: "I wasn't looking for an answer I was just looking for somebody to tell me to keep going and not give up...."

Similarly, Helen concluded that the role of mentors was not to solve problems but rather to make suggestions: "... (S)he jumped in and started telling me exactly how to solve the problem and I stopped her and I said, 'I didn't come here wanting you to tell me how to solve this problem, I just wanted you to listen and make some suggestions, but I want to be the one to solve this problem.'" Using mentors "well and wisely" enhanced career opportunities for both Alice and Helen.

Similarly, Grace had a variety of valuable mentors who took her under their wings and guided her career path:

[Name] just decided he was that fatherly type person. (H)e just decided that I was just a naïve kid, that didn't know what I was doing, and he just took me under his wingtip. He'd been with the company for a long time and he just was showing me the ropes and different things ... to watch out for and he was just ... incredibly helpful.

Grace discussed both male and female mentors who helped broaden her career options:

… (T)he female mentor … would just ask me how did I think about this or what did I think about different issues. Not necessarily technology type issues, but just issues overall. (I)ssues about women, issues about what was going on in the organization. So she really got me to thinking about other areas other than just myself or the discipline that I was in of technology. So she really broadened my horizons and I really appreciate that. As far as the male mentor, he really was instrumental because he really got me on the right path of thinking about a career in the first place, which I really hadn't thought about. I was more in survival mode.

Grace described another experience at a different university that involved a more formal new employee mentoring program. Internal support was available to newcomers through a Buddy system:

When I was [at University A] they would set you up with the Buddy system. You had two Buddies that you could ask for help or you could [ask] other people too. (I)t came through HR when we went through orientation. They had the longest orientation, the whole week, that I've ever been through. (Y)ou go through everything—all the training that's required, everything, your Buddy system, you get to meet your buddy…. I really did like the Buddy system, but what I found is one issue—the buddy system were people that volunteered…. and a lot of times they didn't have any knowledge about your area. And sometimes they didn't have knowledge about the institution…. I had a male and a female [Buddy] (T)hey try to pair you with a male and female but a lot of times, because it's a volunteer basis, you may end up getting two males or two females or one person or sometimes one of the buddies had three or four people and that became an issue as well.

Grace's mentors "took her under their wings" and helped to "broaden her horizons." Grace sincerely appreciated the support and opportunities her mentors provided for her career advancement.

Many opportunities were provided for the co-narrators by their mentors. Throughout the different stages of their lives and as their careers developed, including their current career, mentors assisted with help, advice, encouragement, growth, and

learning. These elements provided opportunities for the co-narrators enabling them to obtain their current information technology executive leadership positions.

Education, Knowledge, and Experience: "Opportunity to Get in the Door"

Another area of great impact on the co-narrators' professional advancement was education, knowledge, and experience. The co-narrators agreed that various combinations of education, knowledge, and experience provided opportunities for career advancement. Each discussed the value of these elements.

Helen discussed how her early background in computer science was advantageous for her: "I certainly think that when I first took my job in computer science that they were looking for computer science and they were taking anybody. You didn't even have to have a degree in computer science at that point ... which I didn't have."

She added that one's experience and knowledge were key to professional success: "I think you can make up for almost everything with experience.... You don't have to have all the education and I do recognize that I have some bias on the computer science.... It helps me a lot."

Helen strongly believed that a strength for her was the fact that she was a faculty member and had been in the higher education environment. This led to her success in information technology:

> I think that the fact that I came out of the faculty was a huge plus for me in getting into higher ed administration. And by moving into information technology I think [it's] much more easy to do in higher ed than ... to go out and get a job in industry being the head of the IT. I mean, I just can't even imagine that some local company or somebody out there really wanted me as an IT leader. Now maybe they would now, because I have a lot of experience now. But at the time, you know I was coming out of the faculty, I had a degree in computer science, a

position on the faculty in computer science—that helped—there were a couple other faculty who applied for the job at the same time that I did and I believe that the fact that I was coming out of computer science helped. One of the other ones was coming out of composition and I think the third one was coming out of MIS [Management and Information Systems].... But I think that in higher ed IT coming out of the faculty is still a big plus. Because I think I understand what it's like to be a faculty member and I think to be successful in IT you have to have a good understanding of your customers. And, students come and go but the faculty are here for a long, long time.... Getting the faculty on your side or having them recognize and support the job that you're trying to do, I think it's easier for faculty to relate to you as a colleague. But I also know there are lots of IT leaders in higher ed out there that don't have that faculty background and do just fine. So I don't want to go too far on this. I think there are many factors, but for me it's been a strength to come out of the faculty.

Helen discussed how hard and soft skills, technical expertise along with personal and interpersonal skills, helped her in her career advancement. While necessary to assist her staff, Helen stated she does not use hard skills to try to impress others:

> ... I am not big on the kind of hard skills where in a group [you are able to] spew out all the hard technical knowledge that you have. And I know people like that, but they use that to impress people. They try to see if they can snow you with all the technical facts that they have at their fingertips. I don't appreciate that. It's not something that I value. The part of the hard skills that I value is understanding enough of the process of what people are doing on the hard side to be able to ask intelligent questions so that when they're stuck or having trouble or a project isn't going well you can help them get it moving again by asking good questions.... I don't think it's important for me for me to know how to patch an operating system or set up a new server, but I think it's important for me to know enough about those processes and what those people do that when they get into trouble, and they do sometimes, to be able to ask them questions that will sort of lead them out of the hole that they're in.

Grace similarly recognized her experiences and knowledge to be very important:

"I realized something that I hadn't realized before [while working for Company A]. I

should not underestimate myself or second guess myself.... (T)hat while everybody has

different experiences, I had a lot to offer as well.... (I)n management and just as an individual."

She discussed the relationship of experience and knowledge and overcoming her naivety:

> And so the more experience you go through or the more knowledge you are of and experience, whether its yours or someone else's, you're able to recognize these things as they appear within your life or whatever. So I think that's how I really kind of got over being naive. And also I started paying more attention. As I began to mature and get older, I started paying more attention to things and researching different things about office politics and all those types of things. Talking to people, networking, and I'm probably still naïve about some things.

Grace credited her education in professional promotion and noted the encouragement she received, both personal and monetarily. Grace acknowledged she probably would not have been offered her position if it had not been for the company providing courses at the workplace and assisting with the expense: "... I couldn't afford it. And at the time that I decided to go back to school, it was very difficult to get grants and all types of financial aid was dwindling down.... And so, I don't think that I would have been in this position [without education]...."

Grace stated:

> education gave me more opportunity to get in the door so that I could actually market myself better. And it certainly was something that keeping me from getting in the door because a minimum requirement was you've gotta have x, y and z. I know that the positions I've had of late I wouldn't have even been considered if I didn't have a Bachelor's because that was at least the minimum.

Grace also pursued continuing education on her own later in her life: "I pretty much could get the training that I needed, and if I couldn't get it through the organization I just did for my own self-improvement. (S)o I just paid the money to treat myself."

Grace agreed with Helen that an educational background in technology, such as computer science, was helpful but not essential for her current position.

Alice suggested that gaining a background in computer science can intimidate many women since it is generally a male-dominated field of study. Alice advised that women need to be strong and have confidence in themselves:

> I don't recall being intimidated by males [when in college]. (A)t that point in time, there was a respectable woman population in the computer courses.... I think more so than today. (A)nd I think the confidence that a person has or a woman has, also helps. I think if you're not a strong person, I can see you could easily be discouraged by taking some classes.

Alice discussed the value of having experience in other positions and working one's way up-the-ladder: "If it's a strong woman in those positions, you know they either worked their way up or come from the same level from somewhere else. (T)hey come in and [the men] tend to allow them to start making some decisions and to lead more." She discussed her personal "growth path" of working her way up at her current institution:

> I think it certainly helped with the growth path that I had here. I had worked with and met a lot of people. In programming I worked with many different administrative folks on campus in supporting their systems and earned their respect for my abilities, and then when I was doing help desk support working with faculty, the same there.

Education, knowledge, and experience provided the co-narrators with many opportunities related to professional advancement. While each co-narrator had differing levels of education, knowledge, and experience, each credited these elements in their career development and advancement.

Networking/Professional Organization Membership: "Let's Find Ways to Help One Another"

Networking with others and participating in professional organizations provided

each of the co-narrators with several opportunities for career advancement and

professional growth. Networking and professional organizations have allowed them to

receive help and guidance from others as well as "contribute to the profession."

Helen discussed some of the opportunities she had experienced and how those

networks impacted her career path:

> When I was a graduate student, I was pretty active in the National Organization
> for Women politically.... And I was a strong feminist and activist in the
> community, and I think that helped me develop my own sense of self. The
> feminist piece was a plus. (I)t really helped me to see through a lot of those old
> stereotypes that kept women down and I think I was just on the cusp. You come
> out of the 50s and there's all this old stuff—you know women should be in the
> home cooking and having babies ... and I was just right at the right time to start
> saying we don't want to live that way anymore ... and to be surrounded by people
> that were supportive of that—my family supported it, my colleagues, friends....

Helen readily spoke of the benefits from networking and how participation in

professional organizations advanced her career. She took pride in her professional

involvement with organizations. She discussed how her membership in EDUCAUSE, a

national nonprofit higher education information technology association, enabled her to

"contribute to the profession:"

> When [Mentor] asked me to take this job and he talked about IT leadership and he
> talked about to me about how he felt that in IT leadership people were much more
> open and willing to help one another as contrasted with faculty, which can be kind
> of a cut-throat—you never really know who's on your side and it's more
> competitive. I think that IT leaders, that whole culture just seems to be one of
> "let's find ways to help one another and" so I certainly found EDUCAUSE to be
> that way and then after a few years of just attending conferences ... I started
> volunteering for committee work and getting chosen, partly because I think he

[mentor] knew me and picked me a couple of times but then other people began to know me and I got picked and so that felt good. It felt good to be able to contribute to the profession....

Helen also found other local organizational involvement and committee work rewarding and reaffirming:

> (W)e have a group here in town called the [Group Name].... In fact my colleague, a woman [name] who is the CIO at [another College] here in town, she and I have just submitted a proposal to [a regional conference] to give a talk about their conception.... We have about a total of fifteen members. And we have representatives from the hospitals, from the utilities, government, and business. And that's been a really good group. And we've had to work hard to keep it rolling because it takes energy to make an organization work.... I would say that group probably doesn't talk much about the more personal side of things like the kinds of questions you've been asking but it is helpful to watch what people say and how they act. Many of the CIOs are male and having them accept me as a colleague without reservation, it's just reaffirming.

Helen reported that networks and professional organizations enhanced her advancement and acceptance in professional fields.

Alice spoke of several networks and organizations she has been involved in. She revealed how a state consortium of technology leaders was professionally valuable to her in addressing important issues:

> I've been to a few women conferences in town but never really continued to participate heavily in them. I would experience some stuff, learn some things, take that back. I like to experience different ones. (O)ther networks, EDUCAUSE, I go to EDUCAUSE every year. I talk to colleagues from there and bounce ideas. There are a number of listservs that I'm on that I learn about things and communicate with folks. The biggest network I have is within the state, the universities are part of a consortium.... So I network with all the CIOs, directors of the main universities and some colleges within the state.... And some of them are women, some of them are male. We meet face-to-face at least twice a year and every month we have conference calls to discuss matters going on.... In between then, a lot of us are on those listservs and just sort of going back and forth with whatever issues are attacking us at the time.

Grace discussed the value of informal networking in advancing the progress of women in the workplace:

> ... (T)here was a lot of informal networking that was going on that I considered; they weren't formalized programs, but they very much helped for mentoring and coaching and guidance. And that was with other females and in some cases there were males that were really, really advocates for women, the progress of women in the workplace.

Networking with others and involvement with professional organizations provided the co-narrators benefits and opportunities for advancement in their careers. Such involvement and participation enhanced the co-narrators' leadership roles.

Personalized Recruitment

Alice and Grace discussed personalized recruitment as an element that offered opportunities to them in the higher education environment. They benefited by such opportunities being available to them.

Alice discussed her opportunities as she was recruited from a previous position, eventually leading to her current CIO role:

> And I was approached by colleagues that when I went to school here ... that were still here. And they said, "We have an open position. Why don't you think about coming over." And I said, "naaa." "Well just come talk to us." So I came and I talked to a couple of people. One that I [knew] ... and one that I would be working for if I were to take the position.... I actually turned it down twice. And they kept coming back and on the third time, I said, "you know, something's going on here. I'm going to take a drop in pay, but I think that this is the right move because I think there will be different opportunities, cause I'm not getting anywhere over here...." And so I decided to do that.... [And] it turned out awesome!

Alice thoughtfully added: "But I think sometimes when upper management encourages someone to apply then it sort of scares everybody else away and they think well, they're just a shoe-in."

Alice discussed how she felt she "fit in" with the people recruiting and the organization:

> ...(T)he two people that recruited me, well one of them was a close friend.... And the other one I didn't really know but he was the manager of the programmers and those two had been talking. So I think part of it is just the knowledge of it's always nice to know somebody and say yea I think they would work—recommend somebody versus going in blind. I mean you always have a step up on somebody if you actually do know them.... You know their values, their quality of work, so I think that's really how I ended up here.

Alice discussed the fact that others within the organization who were interested in the CIO position were disadvantaged since they had not had the opportunity to grow from the ground up within the organization working their way up in multiple positions as she did: "Well they never had that relationship, growing within the unit as I did, so it was totally different ... versus me coming in from the ground up."

Grace discussed being recruited for her position through one of her friends, a "headhunter," who encouraged her to apply for it. She willingly talked about her experience during the interview process: "But it was clear during my interviewing processes that I was more than 30 points ahead of everybody; they do points or whatever, 30 points ahead of the second person. So it was very clear that my background, my qualifications were really, really, strong. And there were males that were interviewed as well, and females."

With an incredulous tone, Grace discussed recent recruitment she faced since

starting her current CIO position:

> You know it's interesting. (A)fter I got this job you would not believe how many
> people have called asking me to apply for other VP jobs in their institutions. This
> is the first time in higher ed that that's happened. You know, of course, in other
> industries where I have expertise, that's happened. But in higher ed, I've had at
> least three recruiters that specifically told me that the search committee or the
> chair of the search committee said, "Okay, I want you to call this particular
> person." Whom I don't know these chairs or any of these people.... I find that
> fascinating.... I just got here! And that was exactly my statement—I just got
> here!

Personalized recruitment provided professional advancement opportunities for

Alice and Grace. Being specifically selected as a potential applicant, Alice and Grace

experienced opportunities for career advancement.

Organizational Support

The co-narrators cited organizational support as providing professional

opportunities for them. The organizational support assisted by providing professional

development opportunities as well as initiatives to help women balance professional and

family responsibilities.

Helen discussed organizational support related to training and professional

development opportunities: "(T)he university has offered a number of programs for

aspiring administrators... I have taken advantage of those. That's been available to me

[career training and development] and I've sought it out and I've taken advantage of it.

Probably more than a lot of the men that I know."

Helen described a variety of support programs, including discussion forums and a

technical retraining institute. The discussion forums with colleagues and the retraining

were particularly helpful:

> And I think that we got together quarterly at different universities.... They always
> had good programs.... (I)t was usually a couple days.... Often there was a theme
> for the thing and then there was a problem posed and they would put us in groups
> and have us talk about how to solve the problem....
> Well, the Institute for Retraining in Computer Science was a technical
> program. It was to teach me as much computer science as I could possibly absorb
> in a short amount of time. And again that was back in the days when computer
> science was a new and emerging discipline and there were not Ph.D. programs out
> there. There were not enough faculty to teach all the computer science that there
> was demand for and they were trying to feed the discipline by converting some of
> us who had been trained in other disciplines.... I think the Institute for Retraining
> in Computer Science as far as I can remember was probably more men than
> women—maybe a third women?

Helen also discussed organizational family support programs and initiatives

involving childcare programs and flexible work schedules:

> I don't have children so I haven't needed those [childcare, flexible leave, or
> telecommuting] and I've always worked full time. I would say that the university
> offers good maternity leave and we do have a child care center on campus.... I
> think those are positives for women....
> ... (O)ne of the new delightful things about our society that I've noticed in
> recent years is that with the younger staff who have young families, the men are
> almost as active in dealing with their kids as the women.... (A)nd so we do give
> paternity leave, it's not as long as maternity leave, but we have many of our male
> employees are taking days off to be home with the sick kids. I'm not seeing quite
> as much differentiation between men and women in that whole childcare thing
> any more.... I think our department on the whole is pretty open to childcare
> issues and encouraging people to use their sick leave or vacation time to deal with
> family issues....
> (W)e have had several women on our staff who worked reduced loads
> when their children were young.... (O)ne of them who worked three quarter time
> for me is now one of my managers.... I sought her out when I knew I was
> creating a new management position and strongly encouraged her to apply for
> it.... I know that I did make it clear to her that if she wanted to move into
> management I needed her to come back full time. But I didn't feel like I could

live with her three-quarter time any more … her children had gotten old enough….

(I)n my organization we're pretty liberal about that kind of thing [men needing to leave vs. women to take care of sick child]. If somebody needs to go, they have their vacation time and sick leave time and we don't worry too much about that….

Helen described how other initiatives, such as flexibility and telecommuting, may be beneficial to employees, yet she cautioned that organizations must carefully consider the impact of such arrangements:

> … I think it's hard on the work organization. I do second guess myself on that one sometimes too, because I read articles where they say well, you know flex time and telecommuting are both great advantages for the organization and I feel like an old stodgy person when I say I want my staff into work, more because we're a service organization and I want people here to serve customers and I can't quite come to grips with believing that quality's the same when people are working from home…. If somebody were doing programming, strictly [a] programming job, it's possible that a telecommuting position would be fine…. Even though I don't have children myself, I've taken care of enough children, done enough childcare in my life, to know that one doesn't sit down and write a computer program at the same time the three-year old's sitting on the floor crying…. I think it's a distraction and hard to think when your kid is [around], but there are times when I feel like I'm just old fashioned that way. I should probably try to learn to be more flexible.

While the forums provided opportunities in facilitating interactions with colleagues at other universities, the Institute for Retraining provided Helen with a background in computer science which proved to be particularly helpful to her in achieving her CIO role. Family support programs offered by her institution have provided many opportunities to many of her staff, but Helen also expressed concern about the sometimes negative impact on the work organization.

Alice discussed "very, very supportive" programs for training and career development: "If you're willing to take it on, they're willing to send you...." Alice viewed her professional development opportunities as valuable support:

> You're going in there working with other people who have the same desires you do and you are faced with real life situations and you actually have to work through those and how would you present things, and ... it was very interactive and I think it was a full week or three days.... But I think that was a growing time for me an opportunity that I took and presented to myself saying, "Okay, if you're going to do this you need to really learn something out of this and bring it back...." And I thought it was very, very valuable and the people that they have leading that and instructing really push you. You can't sit back in the corner and ... I mean you're in there and you're working and if you don't survive that—I mean it was a good test of what you really do every day or every week that I didn't realize that I was going to have to do.... So I thought that was or is a very good program.

While flexible schedules may provide a valuable support, Alice cautioned that misuse could contribute to workplace problems:

> I think for the most part there is support [from the university].... I see it more in my role because of overseeing a broad number of people and the requests that come in, in that people want more and more flexibility. And with technology that's one of the ways they can say I can still do this. Our philosophy is there needs to be good balance. We don't want that to be a permanent solution. It might be temporary, someone had a kid they want to work part time from here and home until they adjust better or even the males their wife just had a child, can I work from home a little more right now to help out. It's one of those things where we can support but we feel people need to be here to get the job done properly and to make sure tasks are done on time and communication is there. So there is some portion of the jobs we do allow people to work from home but it's not a permanent solution.

Alice stated that flexibility opportunities were mainly for those with families, creating some jealousy in those without families. She encountered feelings from staff of:

> ... (W)ell why do they get to do that just because they have a family. (A)nd it's not that they can't, we're just trying to assist someone [who] just had a baby or something traumatic happened in their life. It seems like everybody goes through

that whether you have a family or not at one point or another and I think maybe sometimes the people with families take it for granted. Those that do not have a family notice it more just because they don't have as many situations where they're granted the flex time or the different benefits that you see....

Alice also cautioned that organizations must carefully consider the impact of such arrangements:

> I think that's just normal, that's competition between people, expectations, if this is what you get, I should get it too. (A)nd it's hard, to be as flexible with a poor performing employee versus a good performing employee. The good ones you can typically trust them that they are working from home when they say they are, versus a poor employee, you have no idea, unless you have some deadlines set and they're actually meeting them at all times. So it's a difficult situation and I don't like to see us get into anything long term because I think that would just cause more problems within the unit.

Alice found the opportunities provided to her through professional development programs supported by the organization were very valuable. She cautioned that a "good balance" needs to exist in offering flexible programs and schedules so misuse does not occur.

Grace confirmed the value of certain organizational support programs and initiatives as well as the variability in the support from management for such policies:

> I had that with [Company C] with my first daughter—the opportunity to work at home and that was really great. (F)or the first year of her life, I was able to work from home and that was just really, really great....
>
> I've had some telecommuting opportunities although I realize that I'm not what you call a bona fide telecommuter—I mean I don't mind doing it if I have to if I'm waiting on something to be delivered or whatever. (B)ut I like interaction, and interacting with people. I like being in the office and being around people so I tend to come in. But I have had those opportunities. I've had opportunities just to flex my schedule.... (F)or me that was more important than the pay. Because, you know, when you have kids and you gotta get them to the Dentist and you've got to do all these types of things you need to have a flexible schedule. So I think that I look for organizations that offer that. That type of flexibility. And I want in return, I want to encourage flexibility with my staff and employees and I've let

them know up front and I know some management doesn't agree with this. Your family is number one. All this other stuff can wait, but when it comes to family, you need to take care of your family.

Organizational support benefited and encouraged the co-narrators in several ways. Being able to participate in professional development programs, working flexible hours, and having programs that supported one's family needs were important and offered valuable opportunities to the co-narrators.

The co-narrators described additional aspects of organizational support related to the higher education environment. Alice viewed higher education as providing support for facilitating careers due to the many opportunities provided, the leniency of the environment, and the passion it creates for education:

> I think there's something that makes people either like it or not [(higher education environment]. (P)art of it I think is the passion part of it [and] being able to accept truly the diversity and maybe even some of the politics that goes along with higher ed that you may not get exposed to in the business sector, it's more cut and dry. And I think higher ed is more lenient, I don't mean that in a bad way. It's just that I think they try and allow people or give people opportunities. The employees and students still have to perform, but you're given more opportunities to prove yourself than maybe you might be in the business sector.... And [in] higher education you typically don't hire and fire as quickly as you do in the business world. It's different and some people don't understand that and have a hard time, "Well why do you put up with this or why don't you just do that" and it's not quite as cut and dry I think.... I think there are some characteristics that if you can't accept higher ed, you probably won't stay.

Alice added that her involvement with her current institution has enabled her to continue to be involved with "programming," a field she enjoys:

> I enjoy programming. To this day I enjoy the challenge and the excitement of trouble-shooting something and figuring out and making things efficient. I still enjoy that and I actually don't do that programming but I have the opportunity to be involved in a lot of projects and sort of on the front-end of the design. It's not

that I sit there and tell them how to do it, but the global concepts of what we want – I still kind of keep my fingers in because I really enjoy that part of it.

Alice also talked about the "personal" support and communication that she experienced from her supervisors. She discussed additional communication opportunities under her current female supervisor:

> (B)ecause of being a woman there might be a little additional communication that you may or may not have with a male, depending on how close, how comfortable you feel with them. But I think because this is my first female boss, there's probably a little more just general communication here and there or personal communication, versus with a male. But on the other hand, my prior boss, he was very compassionate and you know he was easy to talk to about situations too.

Helen also had "supportive" experiences from supervisors: "... (T)he former vice Chancellor, ... who was my first boss when I became the IT director was supportive, interested in what I was doing, willing to talk to me, valued what I had to say and I would say the Dean that I was under before that too, when I was department head was pretty much the same way...."

Helen discussed being trusted in this environment to manage her organization as she sees best, but confirmed that there were also times when superiors needed to get involved:

> There are some notable exceptions that I think I deserved. For instance, several years ago we had major [concerns] with our email system—it hit the wall and the architecture and the way it was organized and everything and all of a sudden it wasn't enough.... And it was clear that it was going to take a major re-work to solve the problem. And in the mean time, you know, every day it started out pretty good at 8 in the morning but by the time a lot of people were on at 10 it was just bogging down. And of course people are very reliant on email. And so you know it seemed like two or three times a week the Chancellor would speak to my Vice Chancellor about it and he would come over and talk to me. And I firmly believe in the right and responsibility of a leader to step in and micromanage

when the situation isn't good.... I've felt like I deserved to have him breathing down my neck during that period.

Helen expressed gratefulness in having a Vice Chancellor that was concerned about the situation and communicative with her.

Grace discussed how the governance model of an organization can provide opportunities for internal support. In her current position in higher education, she finds the helpfulness of people to be very positive:

> (W)hat I'm finding in this organization is that people are willing to help but you have to ask them. (I)t's not so much they're coming to you, if you happen to meet with them or have lunch with them, they'll say, "anything you need?" (T)here's an openness here so far. I feel I can call on any of the Deans and if I have an issue they're willing to help because we're in a shared governance environment. I've never been in any organization that when you first meet someone, they'll give you all their phone numbers, including their home number.... But they'll give you everything [and say] "you call me." [Whether it's because] you're new in town, if you want to get together and do something, if you don't know how to go somewhere, if you need a recommendation for a dentist, "you call me." That's been really overwhelming here because that's been something that almost everybody I've met with has said or you know "I'd love for you to meet my wife so maybe your husband and we can get together."

Grace also experienced opportunities due to the manner in which the organization administered her performance reviews:

> ... (W)ith guidelines from human resources [I've] been able to really set my own performance measures.... And I think when you have the opportunity to set your own performance measures, and then indicate what is satisfactory, what is above average, what is exceeding, I think that really minimizes the biasness that performance evaluations in general probably still have. I've always opted to set my own guidelines, just to give me some high level directives as to what types of things that you want to see within and then with that I drill down and set my own. I think that works well for me. I have not interviewed with anyone or been hired in any place that has not allowed me to do that—at least in the last eight years. I think I would be taken at this point if someone handed me a review, an evaluation and said, "Okay, you gotta do this, this, this, and this." And then without my

input. So it's been a collaborative effort for me within the last eight years. I hope that continues.

Not only did organizational support benefit and encourage the co-narrators in several personal ways, the higher education environment created opportunities. These opportunities assisted the co-narrators in their professional development and career advancement.

Affirmative Action

The enactment of affirmative action legislation was another factor that provided indirect opportunities for the co-narrators. All the co-narrators reported opportunities provided by the initiatives, policies, and heightened awareness that resulted from the principles upheld by its enactment. Alice discussed the equity issues of affirmative action as equally important to an individual's competence:

> The equity issues--that's a big issue at universities. When I came into management there were no other women. That was all male dominated. I certainly hope and want to think that's [affirmative action] not the whole case and that I do have the skills and what they were looking for.... I know I do. Because I know I'm doing the job properly.... But I certainly think that [a person being hired due to being female] probably weighed in on some of the higher positions.

Alice also discussed others' perceptions that affirmative action provided opportunities for her, as a woman, which were not present for a man: "There's been talk [by others] that, "Well, she was set up to succeed. She was given these opportunities." (M)y take on that and my response to that is always, "you can be given opportunities but you still have to follow through." It's not like you can just say "okay I'll take that" and never do anything to prove yourself...." While Alice confirmed affirmative action

opened doors for women, those women proved they were competent to accept and fulfill

those opportunities.

Alice discussed the importance of seeking the best qualified person:

> Certainly we have an affirmative action team on every interview here. But I
> know the interviews that I conduct and lead and the searches, it's truly the most
> qualified person, when you boil it down cause that's what's important. And if it
> happens to be someone that's, whether it's a woman or some other race that's
> great. But we're really looking for the best candidate and so that we can serve the
> university. You know, my guess is, I don't think it plays, it hasn't played a huge
> part in IT. Because of the skill set that's needed, we really look at truly what that
> person brings to the table.... I see it in other areas used a lot. I think I've
> certainly been pushed to use it in positions. (B)ut I usually push back if I don't
> think that it's a good fit.... You know, it's a struggle. I have a hard time with
> that one cause I really need the best person for the job, no matter what that means.
> You know traditional male or what have you.

Helen discussed her perceptions of affirmative action opening doors for women in

general and, more specifically, married women. She emphasized how the initiative

provided opportunities and benefits for women pursuing administrative positions:

> I think there was a certain period of time in the early 80s and maybe into the early
> 90s when there were some benefits to being a woman....
>   I had my Ph.D. in mathematics. I had this Institute work for two summers,
> but that was just the birthing of a new discipline [computer science]. I think that's
> how these new disciplines come into being now.... So that I got lucky in the
> timing there, I'm sure, in being able to move into that position [computer
> science]....
>   (A)t the time that was a really good time [during 1985-90] for women in
> the sciences at [the University]. (T)hey were very positive about faculty couples
> and hired a number of married couples in a variety of disciplines in the college.
> And, I was very welcomed and for the most part treated extremely well....
>   Institutions were very cognizant of affirmative action and trying hard to
> make sure that women had opportunities to be successful. I never felt as though I
> was given an unfair advantage because I was a woman; but I certainly felt that
> people bent over backwards to give me an opportunity....
>   I think I'm extremely lucky and I know that other women have not had
> those benefits that I've had but I actually took both my department head role in

computer science and my director position in IT at a quite young age, relatively speaking.

Helen also discussed the influence of affirmative action in relation to salary equity and institutional awareness. She confirmed that employers became increasingly responsive to the affirmative action initiative:

> I can remember at one point when the university was going through budget cuts, I said to my boss, "you know, why don't you just like not give me a raise this year and let's use that money to help out some of my staff at the university who need the money more than I do." And he said "well you know I can't really do that. I think that would look bad in the overall realm of affirmative action."...
>   (H)e made it clear that even in the constellation of budget cuts we needed to make sure that administrators were paid well and that our women administrators were paid fairly in comparison to men.

While Helen attributed significant initial advances and changes in employment to affirmative action legislation, she believed that emphasis is not as strong currently. Helen painstakingly discussed the lessening attention to or effectiveness of affirmative action legislation over the years:

> I think I see a trend that in the early days of overcoming some past discrimination that affirmative action was a stronger force and more effective and as there become more women in the workplace, and I'll say that for minorities as well. I think that as more opportunities become available for the disenfranchised that there is sort of a public perception that there is less of a need for that. And even to the point where there starts to be some backlash. You've seen this in the press, that affirmative action, even people who might have benefited by affirmative action start to turn their backs on it.

She added that diversity had become less important in higher education institutions today than in the past: "I think they've come to take it a little bit for granted. I think they're trying less hard. Or maybe they think that there's a sense that been there, done that, we're through that now and we don't have to think about it as much." Even though

Helen's perception was that affirmative action's effectiveness has lessened over the years, she generally viewed affirmative action legislation as creating opportunities for women to be successful.

Grace reported that affirmative action helped her immensely in securing administrative positions: "I don't think that I would be where I am today or even in some of the other positions that I've had if it wasn't for affirmative action and Title VII and all these types of laws." She noted that minority recruitment was a priority: "(T)hen there were different programs to attract women and people of color."

The co-narrators stated that organizations value diversity more now than in the past. Grace noted the realization by organizations of the opportunities provided by affirmative action: "I also think that at some point along the way different organizations realized that they are better off having a diverse of pool of people than just a single race or gender."

Grace stated increased acceptance of diversity by higher education organizations is often driven by the students who are "looking for people they can connect to:"

> I certainly hear it at [this University]. There were goals [and priorities] the President has set and one of them is in the area of diversity with hiring and retaining and attracting diversity. And there are lots of higher ed institutions and I would say California, Cal State is one of them that comes to mind because recently there was an article about some things that they did to attract more women in various positions in their institution and diversity. So I think that a lot of that is driven because the students are diverse. The students that you're getting in are diverse. And students are looking for people that they can connect to ... and connect with and I think the world is changing perspectives on inclusion....

Alice also talked about higher education being more accepting of diversity: "I would say maybe higher ed offers just a different atmosphere. It's not so cut-throat and

competitive as in the business world. I can't speak for it now because I've been out of it

for so long. But, I think higher ed in general just because of the nature of education, I

think is a little more accepting of it [diversity]." Alice stated that due to these changing

attitudes toward diversity, one's responsibility as a director or leader is to consider

creating as diverse an environment as possible:

> Well, most recently with Proposition 2, how we look at diversity has changed.... Prior to that, I think it was just trying to make people aware that you really want to grow a diverse community in every area. (A)s a director, supervisor, manager, you're responsible for any positions to be seriously considering a diverse group....

Alice confirmed Helen's perception that diversity is receiving less attention

recently than in the past: "I think it [seeking diversity] ramped up and now it's sort of

leveling off again, in the last few years." As Alice stated, supervisors and managers are

often held "responsible to consider diverse groups" of people being employed in the

workplace. At times when this does not happen, legal action may occur.

Not having personally experienced any litigation, Grace speculated: "From a

legal standpoint, I'm sure that there were probably some lawsuits and people were more

cautious going forward in those types of things as well.... (A)nd then you had the office

of EEOC (Equal Employment Opportunity Commission) and all that."

Helen, on the other hand, reported the direct results of a legal case that preceded

her arrival at the institution:

> ... (T)he University ... lost a pretty major lawsuit before I came here.... (T)he whole university then was placed under a consent decree and that was still ongoing when I came here and they had to take extra care with searches.... So it's possible in my hiring initially that that hadn't been happening. I also know

that, I think after I'd been here for a year, there was a settlement in which all women faculty in the sciences got a raise ... equity type....

(T)here were many women, older than I on the faculty who clearly felt strongly discriminated against and militant about making sure that the decree worked and that women had opportunities. And I feel very lucky that they went ahead and opened those paths for me.

The co-narrators' career development and growth occurred during the primary years of affirmative action awareness and implementation. Affirmative action enactment directly and indirectly provided a base for many of the opportunities the co-narrators experienced in pursuing their careers. In response to specific inquiries regarding whether the achievement of their position was due to the crucial criterion that they were a woman, the co-narrators responded they did not feel they had been selected for the position due to solely being a woman. The co-narrators stressed their successes were due to the resulting opportunities provided to them by having certain factors present in their lives.

The opportunities resulting from certain elements being present or certain experiences occurring in the co-narrators' lives enabled the co-narrators to obtain their positions of information technology executive leaders in higher education. Elements that were very important included possessing certain personal strengths, the presence of family support and mentors, and a good combination of education, knowledge, and experience. Other elements also included networking with others and involvement in professional organizations, personalized recruitment, organizational support programs and initiatives, and affirmative action enactment.

These elements provided the co-narrators with opportunities for professional advancement, enabling the acquisition of their current positions. The co-narrators

appreciated the opportunities provided, but each "still had to follow through" and "prove themselves along the way." Although the co-narrators had experienced many opportunities and had overall positive experiences in their professional work and advancement, many obstacles were also encountered in their journey.

<u>Obstacles</u>

The co-narrators discussed obstacles they experienced during their career development and professional work and advancement. The more significant obstacles experienced included stereotypic attitudes and beliefs from others that created difficult situations and interactions for the co-narrators. The co-narrators experienced a lack of recognition, support, and trust as well as a lack of appreciation and encouragement by staff and superiors. Marginalization occurred when the co-narrators' professional input was ignored or discounted, they were treated with disrespect, information was deliberately withheld, or they experienced "corporate bullying." Narrowed pathways existed related to educational background and level of degrees, coupled with effects of the "glass ceiling," limiting professional growth and advancement.

Other obstacles to the co-narrators' career development and professional work and advancement resulted when colleagues were jealous of the co-narrators' titles or positions. Isolating experiences occurred when the co-narrators were "out of place" and disregarded. Perceptions that they were tokens when hired into their positions contributed to stereotypic views of tokenism. Intimidation and unwelcomeness by the "good old boy" networks presented obstacles to self confidence, inclusion, and acceptance. Family commitments and responsibilities were difficult to balance with

professional responsibilities as they had spouses and children to consider. The women reported double-binds and no-win situations, often torn between the best actions to take. Salary inequities occurred in past positions.

These obstacles evidenced many difficulties for the co-narrators as they pursued their professional work and advancement. The co-narrators experienced frustration, anger, and demoralization as thoughtless comments and actions were directed toward them.

Stereotypes: "You Gotta Be Determined to Get in There" and "Get Crabby"

The most significant obstacle experienced, as reported by the co-narrators, was stereotypic attitudes and viewpoints of others. Hurtful and disparaging comments were made by others toward the co-narrators as they pursued their professional advancement and work. Preconceived notions by others that women were better matched with certain positions were encountered. Fear and denial that women could be technically knowledgeable, credible, and possess leadership skills were frequently reported. Also reported was the occurrence of a lack of trust by staff and colleagues causing credibility to be questioned. These stereotypic attitudes often forced the co-narrators or others observed to strive to possess male attributes, such as certain leadership styles or voice tone. Ageism beliefs by others also led to other attitudes, which together created obstacles for the co-narrators and caused them to experience anger, frustration, and disbelief.

Early experiences effects. Alice discussed her perspective on the acculturation of boys and girls in American society. She discussed stereotypes regarding technology

forming at young ages and the identification of certain territories being more "male" than others:

> And I think we get that from our upbringing. We think it's one of those stereotypical … you know if you're interested in this, the boys go off over here and do this, the girls go off over here and do this, as you're learning and growing and given opportunities. I think that's part of the problem is we haven't figured out at an early age how to make that [technology] more inviting to the girls….
>
> How do you make it attractive for them? And that's where I wonder what's happening in the K-12 to not even make them want to pursue that or look at that.

Alice confirmed the lack of females in computer science, relating it to a lack of interest in computers and technology by young girls:

> I look[ed] at the statistics of female students in computer science. And it's not very high. Part of the things I looked at in the K-12 environment, nothing's geared towards the female mind. It's all mechanical and if you're going into this it's because you're more mechanical and gaming and things like that versus, you can use computers to design clothes, fashion, games, toys. I don't think the opportunities are presented as well to females early on so that they feel like they can do that job…. I think there's still some of … here's the traditional jobs and so I don't think enough of that is promoted. And then when they get to college they're intimidated by their male counterparts and you're afraid to try it. That's what I feel has happened…. I don't know how we're going to get out of that…. I think it starts younger, though, we've got to convince them they can do this. That it's okay….
>
> I think once you get into it, get past whatever reason you think you shouldn't be doing it, at least from my experiences, then I think you can see that there is some opportunities and it's not as bad as you think. I think people have been or become more accepted once you're in there, but you gotta be determined to get in there. And I think that right now, it seems to be, for some reason, the biggest barrier. I think once you're there, at least in education, it's more accepted.

Grace similarly emphasized that opportunities for females in technical fields need to be presented early and in a motivating manner. She suggested tying technology to more nurturing environments as a method of getting more females interested in technical areas:

Well, I think, I think we need to tie it to something nurturing. For example, showing a female, a young child, that okay here's a computer, put that computer together, it's no big thing, but so what. (B)ut put[ting] it together so that you can help diagnose someone that's dying. Or here's this thing--we need to write software to help with that.... (T)hat's what women need. We need to tie it to something nurturing.... And I think we're more apt to attract more women.

Grace provided an example of females finding technology use to be more meaningful:

I had a meeting with the Dean of [the Nursing College]. (W)e were talking about technology and she was saying how she has one lady which is relatively young and she is just brilliant at turning the technology that they use into something meaningful other than just email.... (B)ecause she's like, okay you can monitor this, you can buy all these different medical instruments, hook them up to the computer, and the computer can tell you this and do the analysis. (A)nd so, now they're all engaged and fascinated. They went out and got like eight more of those machines because the computer technology meant something to them.

Linking technical knowledge and technology use with meaningful work was important to the co-narrators. As girls and boys are socialized, they are often channeled toward certain career paths and positions. Helen expressed frustration over the lack of interest in technical positions she observed in her women staff members who had the potential to advance their careers. While these women were offered training opportunities and encouragement, they simply were not interested:

... I also have women that are in a key position, that if they had a stronger grasp on the technical or a stronger interest in developing a grasp on the technical, could move up in the organization and don't seem to be interested enough to do that. That's frustrating to me.... I wish they did.... It seems to be interest. It really seems to be interest. I think we've offered them a combination of you can go to training externally, you could get on the job training, we've talked directly with some of them ... and we don't see them taking us up on that opportunity. And I guess I come down to a theme of lack of interest more than lack of encouragement.

Also frustrated regarding the lack of interest from women for technical leadership positions, Alice discussed the lack of women managers when she had a past

programming position: "There were no other managers or supervisors [who were women]." She described the continued lack of women seeking technical management positions today:

> In my own area, in the IT area, there's still more men that strive to be in the management than women. (A)t least internally. When we have positions like that we certainly get a fairly good mix, but I still would have to say, even externally, most of the candidates end up being male versus female, if you were to look at the raw numbers.

Alice reported others' dislike of and lack of skills in technology causing stereotypic attitudes of "techie" people being unable to understand and help non-technical people:

> ... (W)hen you get into conversations with faculty or an academic unit, they feel that you just don't understand their needs because you're a techie and you possibly can't understand what we need or what we need to do or how we need to accomplish this, and you're too technical. Or the other situation is something doesn't work and we come in and it works. "Well that's cause you're IT and you know how to do it...." That stereotype when we're trying to show them that they were possibly doing a step wrong or what have you. But no, "it always works for IT! Then why do you force technology down our throats. We shouldn't have to know how to use this."

Early positive experiences in learning about and using technology would assist in making technology "more inviting" to girls at early ages as well as throughout their career development. Stereotypic attitudes and actions often reinforce the maleness image of technical roles. Such attitudes can also lead to hurtful, disparaging comments.

Stereotypical comments. Helen and Alice specifically mentioned those disparaging comments that presented obstacles or impediments to women in general and/or them personally. Helen mentioned early experiences during graduate school regarding stereotypic views as comments were made by others regarding women. She

considered these unnecessary but not totally discouraging: "… (T)here were the comments that were hurtful and some male faculty who didn't really 'get it' that said things that were out of line [to women], but they weren't severe enough to ever really truly discourage me."

She clearly recalled an example of these comments:

(O)ne male faculty member who was quite a well-known misogynist gave a department colloquium one day in which he said, "Women are like cats. There have been experiments done where they have put cats on an electrified grid and shocked them and the cats would after awhile just lie down and take it. And somehow women are like that." That actually made a lot of women in the department really angry. So I think in some sense it galvanized us or made us stronger and he didn't get a lot of support for his view from most of the men in the department….

And there were women faculty in the audience and it was clear that we were all really angry and nobody said anything and I think that's a tendency and downside of many of our gender—I think that we don't get crabby often enough…. I think a lot of people just kind of said, "Oh yea, there he goes again…."

(T)he other one I'll mention was somebody using a phrase that he probably used since he was a kid and everybody used it but it was very hurtful—was the term "weak sisters," which I think is disparaging. I think it has been used in the past to disparage gay men but because it used the feminine as the negative, was also very discouraging to women…. That was a different faculty member. And I think he in general was a pretty nice guy and got along reasonably well with a lot of the women students. I just think he didn't have a clue how hurtful that phrase was.

Alice discussed hurtful comments made about her, specifically, and how she became quite frustrated and considered quitting her job: "… because words hurt sometimes. Behind the scenes, behind the back, and you wonder how can people think that of you."

Preconceived notions. Just as statements were hurtful and belittling to Alice, preconceived beliefs also caused harm. Helen described how she intercepts stereotypic

assumptions and preconceived beliefs when meeting people. These assumptions and

beliefs related to women's inabilities to occupy top administrative positions. Helen

discussed her reasons for quickly communicating her role to people she meets:

> I think I have deliberately tried to side-step stereotypes pretty quickly in meeting
> new people by almost immediately cutting to telling them who I am and what I
> do.... (R)ather than letting them form opinions and then having to change it....
> So I'll go out of my way to introduce myself to someone and say something like
> I'm the director of a department.... So I do deliberately tell people what my role
> is early on in order to try to prevent those stereotypes from forming....
>
> I just figure it's embarrassing to them as well as to me and so why not just
> bail everybody out by making it clear what my role is.

She experienced a situation early on where the preconceived notion of someone

was that women more often occupy secretarial roles than other roles. She clearly

described an encounter with a male student:

> When I was in graduate school I was the assistant to the associate head. And I
> was still a graduate student but I had this low level administrative job in the
> department and I used to help him, for instance, assign all the graduate TAs
> [Teaching Assistants] to classes. And I administered all the make-up final exams
> at the end of the semester.... A variety of jobs like that. I was a graduate student
> but I had found it convenient to have a typewriter in my office because back in
> those days there were still many forms that needed to be filled out and I often just
> felt like it was easier to do it myself than to ... So that's when that post-doc said
> to me, "Well why did you quit graduate school to become a secretary?" I just got
> rid of the typewriter. But that was the incident that made me start telling, being
> really up-front with people about what my role was.

Helen was able to prevent misconceptions regarding her role and position by

engaging in this strategy. She would "go out of her way" to prevent the "formation of

opinions and stereotypes" when meeting people. This prevented embarrassment for them

and her as she "bailed everybody out."

Fear and denial. Encounters and experiences occurred for the co-narrators related

to others' fear and denial that women can be technically astute, credible, and successfully

fulfill leadership roles. Alice discussed stereotypes often stemming from her staff's fears

and denial regarding women possessing technical knowledge and leadership skills:

> ... (T)heir fear of not knowing what I could do, feeling like I didn't deserve the
> position and a lot of that. Some were from males, older males. That was hard.
> Their background [was] women didn't run something like this, they didn't have
> the knowledge....
>   I think again [stereotypes come primarily from] the older generation.
> Their mindset and women typically were not into the technology areas. They
> were viewed as not having that skill set, not being able to learn that.

Credibility. Similarly, Grace described stereotypic attitudes encountered due to a

lack of understanding and knowledge by others that women can be technically

knowledgeable and just as qualified for positions as men:

> ... (F)or example I went to a meeting—a two day meeting—and there were
> several committees that I volunteered [for] and I could see the shock on some of
> the men's faces when I volunteered for these committees because they're usually
> male dominated committees that talk about IT infrastructure ... and IT security....
> (A)nd I saw the shock on their faces when I volunteered for those committees....
> (B)ecause some of the other females were volunteering for the workshop
> committee. (T)here's like an initial shock that "Oh, she volunteered for this—a
> non-female traditional [male committee/topic]."

She emphatically emphasized that females today "have to be just as competitive

or more competitive" than males in order to acquire and hold positions:

> I remember several conversations at [University A] about [minorities and
> females] getting jobs just because they're trying to fill a quota. (W)hen I hear that
> I don't get mad, I usually get angry, but I don't mad any more. It's like grow-up.
> I know that's what you think but I've had to go through this, this, this, did you
> know this? So I really take an opportunity to try to educate [people] cause a lot of
> times people are not really aware. (B)ut certainly today, if you are female, you
> have to be just as competitive or more competitive. (A)nd whatever the male is
> doing you have to do twenty, thirty, forty times more or better. So I think a lot of

people don't realize that. That when females get male dominated positions, they really went through something to get to that point....

Grace stated with amazement that others often have stereotypic attitudes that females acquire positions based on random decisions: "It's not just, oh well, I'm gonna put her in there because someone told me that I was... That I got a job just because I was good looking. A guy told me that! Oh, my god, I was so furious ... [he said] just that, 'everybody knows how you got this job'."

Alice and Grace encountered stereotypic attitudes toward their abilities, experiences, and qualifications. This was often due to others' fears, a lack of knowledge regarding women's abilities, and denial that women could possess technical leadership skills.

Lack of trust. The occurrence of a lack of trust by staff and colleagues caused credibility to be questioned. Alice and Grace invested time and energy in "proving themselves." Alice stated she had to prove herself and earn the trust from those around her due to their perceptions that she lacked credibility and their failure to believe in her: "I guess what I was referring to was trying to prove myself mainly as I was getting these different positions. (A)gain people wondering well how is she qualified to do this job, she's not been in this business or she's maybe not ever been a manager before and then all of a sudden thrown into that...." Facing this obstacle caused Alice to "work long hours" and "ask a lot of questions" in order to learn about her staff and their work.

Alice discussed the difficulties she encountered due to being the supervisor of two of her directors from a previous working relationship. She thoughtfully stated again the

fears that existed in her staff, specifically with the two directors, and the need to prove

herself and build credibility:

> And so I think crossing that line was difficult for both sides, for them and for me. And I think those were the times that I probably put in the most time and [felt] like I needed to prove myself to understand, show them I can understand what you do. (A)nd I can be of assistance and be a support not a hindrance, because I know their biggest fear was … and it probably … would have been [with] anyone coming in, [that] they're going to tell me how to run my shop.

Grace compared higher education to one of her past positions as she described the

differences she had encountered in building credibility with males in higher education, as

she was "studied" and "looked at," as compared to females in higher education, as they

were "more open, more warm." Among the males, stereotypic attitudes existed of

bewilderment and puzzlement that a woman might be capable of handling an information

technology leadership role:

> (T)here's a lot of parallels between higher ed and [a past organization] although people don't believe that there really are…. (F)or example, departments in [past organization] work in silos, colleges on the campuses work in silos. So whenever you're a female, it's a bigger challenge because most of these departments or most of these colleges are headed by men…. When I go and talk to the male Deans, their reaction is different from the female [Deans]. They're more reserved. I think they tend to listen and study. I feel that I'm part of their research…. I'm one of their subjects. With the women I don't feel that. (T)hey seem to be more open, more warm. (B)ut then if I go back and I keep interacting with them [male Deans], then the breakthrough comes. So then I'm just one of the other … people…. (B)ecause depending on what the situation is or what happens, if you haven't built those good relationships, things can get out of control pretty, pretty, pretty quick.
> It's the look, it's also … the quietness. (Y)ou're actually talking and explaining things, and they're kind of looking at you and you can just see that they're studying you. I don't know how to really articulate it. But it's the feeling and at first I thought it was just, oh, well this particular person. But then I noticed it with a lot of the males…. And then I also observed how they interact with each other. And it's a more open type, interaction and dialogue…. (I)t's very difficult to articulate but it's maybe intuitive that you know what's going on.

Building credibility required Alice and Grace to "prove themselves." They were able to deal with challenges presented by investing their time and efforts in building good relationships with staff and other colleagues who stereotypically perceived them as less credible.

Attributes. Stereotypes also existed regarding the perception that leadership success or the potential for leadership success was dependent on a person possessing certain attributes. These attributes are often those characteristics and traits successful male leaders might possess. Female leaders are often measured in terms of and against standards related to male attributes.

Alice described "unapproachable" women supervisors she had encountered: "... I've also seen female bosses that because they think they have to prove themselves at a level, the same level maybe as a man that sometimes they can actually be not very approachable ... you know, they're trying to be somebody they're not."

Grace discussed her experiences in the business world of working for other women who were trying to "prove they can be equally as strong and vigilant" as males. She found these relationships and experiences to be more difficult than those where a male was her supervisor:

> I think women are tougher to work for than males. It's a whole other set of issues. I think early on the females that I worked for really felt they really had to prove themselves, that they could be strong leaders.... Instead of letting their natural abilities come out. And a lot of times they were the ones that in my opinion and my experience, made it very difficult for women. Because I remember one situation, I was working for a female and just going through a really bad divorce and you know had a three year old. Well, it was totally unacceptable to call in sick when your baby is sick. So one day I called in, the

babysitter wouldn't take her and I had no where to take her, so she said "you had better get in here today." So I packed up my sick baby in the winter time, wrapped her up tight, brought in the crib and put her in my office and the baby cried all day, well pretty much all morning. My office sat next to hers and I would say by noon she said, "You know what, get that baby out of here...." And so I think we kind of made it hard for ourselves and others because we were trying to prove at that time that we had to be equally as strong and vigilant as what we perceived the males to be.

Grace elaborated on women leaders striving for seniority and power, trying to be "strong and vigilant leaders" similar to males, stating, "... (S)ometimes we can be our own worst enemy. So I think there's a portion there that not only do we sometimes get it from the males, sometimes you get it from the females too."

Helen similarly discussed women leaders striving for seniority and power. Her experience has shown her that there are many factors entering into women seeking and holding leadership roles. She expressed her disappointment in past beliefs that the "world would be a better place when there were more women ... in leadership roles" due to women having "people skills" and being "better at doing things." Helen expressed her frustration and dismay regarding people achieving and serving in leadership roles: "And to my great disappointment in life, I have had to find out that there are women leaders who can be just as miserable, crappy bosses as male leaders."

Helen discussed a female chancellor she had worked for as "extremely difficult to work with. I think probably some of the women that were in administration at the time that she came on board found it *more difficult* to work for her than some of the men did...." Helen described this chancellor as authoritarian and "worse than decisive—just my way or the highway...."

The co-narrators faced struggles and obstacles as they reported to or encountered other women seeking to establish their leadership skills by possessing stereotypic male leadership attributes. Because of this, Grace acknowledged "women are tougher to work for than males."

Helen relayed a friend's experience in changing her communication style to be that more typical of males: "… I had one friend tell me that she worked hard to lower her speaking voice so that it would come across as more masculine and of course I have a quite high voice and am a singer and soprano. And I've never really felt like I've had to change my voice. I remember being quite surprised when she told me that.…"

Similarly, Grace discussed the tone of her voice and how being soft spoken leads to stereotypic reactions by others that she is less astute or less in command:

> (S)ometimes people don't take me serious because I'm soft spoken. (T)hey think she doesn't know or she's a person that you can just pull things over their head— and they come with all these notions. (O)ne time I was told that an interview panel picked me because of that [soft spoken] and they thought they could pull things over my head.… I could not believe it but it happened.… But they soon learned that I may be soft spoken, but there's a lot more than that behind the voice.

Grace also discussed her stereotypic thoughts and attitudes regarding her attire as she "tried to be like someone else." Dressing similar to successful males in order to move into higher level positions, Grace was advised by a male colleague, and then later realized, strength often lies in being yourself:

> I was like on that corporate ladder and wanted to move up and so I dressed really, really conservative, navy blue with the grey and darker … [suit] colors. And that wasn't really getting me anywhere. (I)t [was] kind of out of character for just how I am. (A)nd one of the males said, "You know you need to wear some color, you need to stop walking around here dressed like a man!"… "And what are you

doing? You've got your hair all drawn back in a bun like an old lady and you're wearing those glasses and look like a librarian." (S)o I don't think there was any repercussions from that—it's just an observation someone made and I clearly was on the wrong track because I was trying to be like someone else. (A)nd I think the strength is when we're ourselves.

The co-narrators discussed stereotypic attitudes related to acquiring or having certain successful male attributes. Attributes typically leading to success were described as being "strong and vigilant;" having a lower, masculine voice; having a commanding voice; and dressing conservatively. Such stereotypic attitudes and viewpoints created obstacles for the co-narrators in their professional advancement. Difficult situations occurred as Grace and Helen attempted to work for other women leaders who tried to emulate male leadership styles. Interactions with others were impacted and those co-narrators or those they observed attempting to acquire male leadership attributes misrepresented themselves creating embarrassment and discomfort.

Ageism. Ageism includes prejudices, stereotypes, and discrimination about or toward people of certain ages. Ageism often has to do with the credibility, capacity, legitimacy, and worthiness of people of certain ages. Helen described stereotypic attitudes and behaviors she encountered as head of the computer science department due to her young age:

> ... I was pretty unhappy in the CS department at that point.... I think there were senior members of the department, both male and female, who kind of felt they had the right to give me a lot of advice, needed or not, because I was young.... and they thought they could push me around.... And one issue I really remember is that the previous Dean had been really financially irresponsible and had run the college into big debt and there was a sense among many of the faculty that was just a way to run an institution. That you just didn't bother to balance the budget, you just spent the money if you needed it.... And when I became department head, the Dean made it very clear that I was to balance my budget and I was not

to overspend and I did that. But I got quite a lot of grief from some of the senior faculty who felt the way to get more resources was to overspend and ask forgiveness. ...

Helen stated that if she had been older others might have given her more respect and trust: "and also I think I would have handled things differently. I would have been more mature and as I mature I worry about things less. I have more confidence and I probably would have not let certain things bother me as much."

The co-narrators faced several stereotypic attitudes and viewpoints about women. These were exemplified through hurtful and disparaging comments, preconceived notions, fear and denial, lack of credibility and trust in the co-narrators, placing value in possessing successful male attributes, and ageism. Such attitudes and beliefs were not easily changed. The co-narrators exerted time and effort to deal with these challenging obstacles, often distracting them from their professional work and continued professional advancement.

Lack of Perceived Recognition, Support, and Trust

Another significant obstacle experienced by the co-narrators was a lack of perceived recognition, support, and trust, from superiors and staff. Often perpetuated through stereotypic comments and pressures, the co-narrators stressed the personal and professional importance of being recognized, supported, and trusted by others.

Grace mentioned the lack of recognition by those in upper management of her skills and abilities. This was due to a lack of communication by her supervisor to the rest of the organization regarding her skills and expertise, which created a problem as she applied for a higher level position:

So to make a long story short, they interviewed me and they basically said, "You know, that it was an eye-opener." Because they didn't know of my expertise and all of that because I was a director under the previous V. P. and he never really said, "Oh gee, [Grace] this and [Grace] that" or anybody. He never recognized anybody to that level.

Similarly, Helen quietly talked about a time of lack of support and recognition by her superiors of her dedication and efforts:

> ... (P)robably from the late 90s on I became sort of disenchanted with my job. I decided to start looking around, which was hard for me because I tend to develop probably a disproportionate sense of loyalty to an institution. I felt like I was being disloyal by looking. [Husband] likes it here, he would be happy to stay, [he] didn't really want to move but recognized how unhappy I was and he was willing to be supportive and so I did actually get to the interview stage somewhere else....
> I recognized that a lot of my unhappiness here at the time was that I did not feel supported by my boss or the chancellor. And I recognized about me that that's something that's important to me. I feel like I need that recognition from above. That people are willing to say I was doing a good job and I wasn't feeling that.... The good part that came out of that, my boss here had woke up and recognized that I was unhappy and our relationship changed for the better and that made it okay.

Helen described her actions in lack-of-support situations:

> ... (M)y tendency when I'm faced with new bosses that I don't show a connection with or any kind of support from is to sort of run and hide and keep a low profile and I think that's not a good characteristic of mine.... I think it would have been better if I had really made an effort to get to know ... and to get in to see him regularly and let him know what I was doing. Instead I just kind of put my head in the sand....

Helen realized that responding directly to this lack of support may have been a better approach: "Well, when I told him I was looking for another job he recognized that he didn't really want to lose me. I was doing a good job...."

Helen continued by describing an initiative that brought her and her boss into a situation of mutual support as they stood "shoulder-to-shoulder" in a somewhat hostile environment:

> The Chancellor decided that the campus should become a laptop campus. And that it became [her boss's] job and my job to convince everyone that this was a good idea. And he and I worked really hard on that together. And I was skeptical that it was a good idea. But I also felt that I had been charged with doing this task and I was going to do my best to do it. And so we put together position pieces and talked to people and then it sort of culminated in an open forum on campus which many people came to – students, faculty, students and faculty primarily, and a lot of people were opposed to this proposal. [Helen's boss] and I were at the front of the room facing a very angry crowd and a lot of people acting very angry, negative questions and it was sort of like war and we came through it, you know, and then in the end it didn't fly. But the fact that we had kind of stood shoulder-to-shoulder on this particular issue and that I had backed him up even though I didn't necessarily believe that this was the right thing to do, I think it made a difference.

Helen found that leadership changes made her feel unsupported and unknown. Working with her immediate boss on a difficult project, "backing him up," supporting him, and standing "shoulder-to-shoulder," she was able to once again acquire her sense of being supported.

Alice described a perceived lack of support and opportunities from management while in a previous position with a private company: "It was a man-centered company. Women were there typically to do the administrative work ... push the pencils, click the letters out and what-not. And actually I was the first woman in that IT department.... The opportunities I found out as I went down that road were not really there. They were there for men...."

She described the situation within the company as "being pretty much controlled" and "… no matter what I would have done in that particular company, it didn't seem to matter. It was a man's world and the effort you put in, it was actually more recognized by the outlying companies that you did it for than the central organization." Alice received more support from her customers than from the central company.

Alice additionally discussed a lack of support from some male supervisors she had and the need to "buck up:" "(W)hereas some male bosses I've had you probably never think about talking [about] anything personal or this is what's buggin me today or just so you know if I had acted normal, you just buck it up and deal with it…. (B)ut I'm not saying all males are like that…."

Alice also perceived a lack of support and trust from her current staff when she became the CIO at her institution: "Coming through the ranks, I've certainly taken my blows sometimes directly and sometimes indirectly from members of the staff that maybe didn't want to see someone else succeed or thought that THEY should succeed." She cuttingly described the direct and indirect blows and how eventually many grew to trust her:

> I've had … some people tell me to my face, "I don't want you in this position…." "How do you expect to do this job when you've never been in [one of the areas such as telecommunications]?..." "I just don't think you have the skills to do this. What qualifies you to do this? Yes, you've been a programmer, you've managed some people but how can you figure out how to the rest of this?..." "(I)t's a very large unit, you've never managed this many people," and they didn't directly come out and say cause you're a woman, but I felt that coming from them. (S)ome I heard behind my back through others. So those were some internal struggles that I had to decide do I want to do this or not—to move forward….
>   I think because they had been here longer than I had, I think they felt like potentially they could run the shop better. And why was it me? But my response

to them was "Well then why didn't you apply?..." And their response was they felt that I had already gotten the position because I had been asked to do interim. And I understand that that's one of those things that if you're asked to do that, that must mean somebody trusts you and thinks you can do the job. So it does put you in a difficult situation. I can see it from both sides.... If one of them would have been asked and not me, I'm not sure I would have applied either. I don't know.... So it is difficult....

While Alice generally experienced support and trust from those above her in her current position, she experienced a lack of support and trust from many of her staff. She described two males who initially doubted her abilities but later grew to have confidence in her:

> And two of them [two of her Assoc. Directors], one who I used to [know], and then the other gentleman was an older gentleman, very set in his ways, he ... was the one that came up to my face and said, "I didn't want you to have this job. And I don't think a woman should be in this job and I don't think you're qualified...." I said, "Well you can have your opinion, I can understand that and I would like you to give me a chance and let me prove to you, show you what I can do. And let's talk about this again at a later date after I've had some time to figure out this job and show you what I can do and work with you...." And probably within a year, he was in one of my meetings; you know we have regular [one-on-one] staff meetings. He said, "I just want you to know that I was wrong. And I really respect what you can do. You really have embraced this and wanted to work with us and not take", I think they were afraid I was going to take something away from them that they always did....

Another male initially reacted with doubt about Alice's abilities, but also grew to trust and have confidence in her:

> And then the other gentleman that I [knew], who was actually the one who recruited me to come here, he had a hard time with it. He's older than me also 8-10 years or something like that maybe. (H)e had a hard time. He didn't verbally say anything to me but you could tell in the actions.... And you know how he would react in our meetings and ... Just, like almost trying to say that whatever he was recommending, you have to do this cause I'm right and you know don't even think about questioning me. (A)nd he was afraid that I was going to change the way he did business. You know, that a woman was going to look at it differently. And again through just time and working together and on projects

and I actually ended up giving him more authority and opportunity and not taking it away. And he came back to me, on a one-on-one and said "I really appreciate how you're handling this and working with me." That's when he said "I was afraid that maybe I wouldn't have the same autonomy and privileges and leeway." Yea, so it was very interesting....

Alice experienced similar doubts about her abilities from some female staff. She painfully described how she found the females to be more "indirect and catty:"

> The women interestingly enough were all the behind the back stabbers. I hate to say that but they are.... There were two or three that never approached me to my face, but I would hear about it because they would talk to other people and it would get back to me.... They would even try and get faculty against me and try and get other staff against me.... And it didn't last long. They were broken up fairly quickly because they couldn't prove that. It wasn't true....
> (S)ome of the things I heard "Well she's keeping things from us and we don't know what's going on." And you know "she doesn't know how to run IT." And at that point there's certain things you DON'T discuss with everybody because half the things never come to fruition.... And if you discussed them all you'd get them so upset. (B)ut yet they dream up all these things that are going on because you aren't telling them....

Alice found the males' "direct blows" easier to deal with than the females' disguised "indirect blows:"

> ... (I)t was actually harder at the beginning with the men because they were so direct but then they came around and actually confronted you. (W)hereas the women, it's always behind the scenes and you never know are they okay or not.... The women were more indirect.... To tell you the truth, I've said in my head and I've actually told a few people this before, I would probably rather work with more males than women because they can just get so catty.

The lack of recognition, support, and trust from staff and supervisors produced obstacles for the co-narrators as their dedication and efforts went unrecognized. Lack of recognition of skills and abilities, disenchantment with current positions, being told "a woman should not be doing this job," not being backed-up, and experiencing direct and indirect blows were examples given by the co-narrators of impediments and struggles

faced in their professional work and advancement. These impediments and struggles

took time and energy from the co-narrators as they attempted to build collegiality and

defend their credentials and expertise.

<u>Marginalization: "Glossed Over"</u>

Another significant obstacle experienced by the co-narrators, was marginalization.

Grace and Alice described experiences where they had not been recognized for their

contributions or where their professional input had been ignored, discounted, or credited

to others. Marginalizing experiences occurred for the co-narrators when they

experienced disrespectfulness and when information was deliberately withheld from

them. "Corporate bullying" also caused marginalizing experiences. These experiences

created obstacles for the co-narrators in their professional work and to their professional

advancement as they struggled to be heard and invested time and energy in establishing

relationships and work-arounds.

Grace heatedly discussed situations in which her ideas were "glazed over" and she

experienced a lack of recognition and a lack of being taken seriously:

> Well I didn't feel that I was being taken seriously.... (I)n meetings I would make statements and it was just kind of glazed over. And my male counterparts could make the same, *exact* same [statement], and oh it was a great idea. Those types of things.... I could send in a suggestion or come up with a good plan, documented plan, and it was just kind of glazed over and, not only that, other people were getting credit for things that I had come up with.... So that's why I felt like something's not right here....
> I was the youngest, I was the only female on the executive team there [at Company A] and I was also very, very young. Everyone else had to be maybe fifty plus I would say maybe even sixty. And they're all males. (B)ut what I realized when I started going to those meetings was that they weren't any smarter than me. You know, it's like ... oh my goodness, they're not any smarter than I.

But when I said something, it was glossed over.... A guy could say it and it was a great idea!...

And it really did bother me at first, but after awhile that's how it works, so I began to partner with some of those guys to get credence and everything. Cause they didn't really know me that well. We all just kind of moved in and was thrown together as a team.... As time went on, I really became part of the group, at least as far as they were letting me....

I think the struggle has been to, once I'm involved, to really get people to listen [to me].... And, sometimes that can be very challenging and it can be very frustrating. [I could] come up with a great plan, which is the same thing that Bob presents—[and] he's got a great plan! My plan was like, "Oh that's interesting."

Grace struggled with getting people to listen to her and take her seriously. She felt frustration and marginalization as her statements were discounted while others' received the credit.

Alice mentioned similar experiences with her ideas and statements being discounted: "... (Y)ou know, you don't know what you're talking about and then the male says it and then it's a wonderful idea." She also noted a lack of respect by others can lead to marginalization. For example, one of her directors, an older gentleman, disregarded any contribution Alice offered. He clearly indicated his disrespect for her: "I don't think you can do this job because you're a female and you haven't been in this business."

Grace similarly described others being disrespectful and taking her contributions as a "joke." She emphatically stated:

... because I was a woman and spoke up about whatever or just gave my opinion. It was either not listened to or even [seen as] a joke. Sometimes they make a joke, and then five minutes later someone else is saying the same thing and it's a great idea! So I have experienced that many times in different organizations, not just higher ed, but in many organizations.

Grace described a frustrating and demoralizing situation reflecting a lack of

respect by other males for her efforts and accomplishments:

> I was recognized by a national organization, an international magazine, myself
> and my entire team was recognized on several occasions.... (S)ome of my male
> counterparts just marginalized it and wanted to make jokes and you know it
> wasn't as great of a thing as it was. A lot of my staff, which some of them were
> male too, were really, really, upset about it. And they said, "they only did it
> because you're a woman," because when [a man] got that they just had a party
> and acted crazy. And I think that that does tend to happen. I think the males that
> told me to slow down, and I know they were telling people, "Oh well she's not
> that great, she's going to fall on her face and this thing or other".... So I think
> they came in pockets and spurts. I certainly didn't let any of them stop me even
> though I was frustrated at times.... (B)ut sometimes I decided to deal with some
> of the issues. I felt I had to because it was going to escalate. Other times I just let
> it go and it just went away.

Grace also experienced lack of respect from another female with power and

authority:

> When I was at [University A] I was assigned to work with a [well-known person]
> and his organization. And his daughter-in-law at that time was also the Chief
> Financial Officer. [She] really had issues or did not really know how to talk to
> people. And I've seen and also witnessed myself, what we call her wrath. And
> that is she would just talk to you any type of way and it just wasn't because of
> gender or race, it was just the way that her personality was. And I've actually
> seen people reduced to tears and have to get up and leave because she just went
> after them.... And because she was the [well-know person's] daughter-in-law,
> who's going to report her to Human Resources?... Come on! And she would
> remind you that her name was on the building. She was a [last name] and that
> "my name is on this building." And so she did whatever she wanted to and
> finally, she and [well-known person's] son got divorced and she ended up leaving
> and I think everybody was really happy.

Disrespect by males and females toward Alice and Grace led to marginalization,

exemplified through disregardful and unwarranted actions and statements. Such actions

and situations led to challenging conditions and circumstances as they sought to be taken

seriously and worked to maintain their morale.

The deliberate withholding of information by others created significant obstacles for the co-narrators. Helen linked this action with those who believe "knowledge is power:"

> I think this is a style issue with our Chancellor right now. [The Chancellor] is one of those people that believes knowledge is power and that therefore one should hold as much knowledge close to the vest as possible and not share....
> Knowledge is not freely shared and that means we don't value working as a team where we all know the same set of things and go forward from there. We are more into ... keeping secrets because the more I know that you don't know, the more powerful I am. I feel marginalized by that.

Similarly, Grace experienced a withholding of information in the business world:

> ... (T)he person or persons that were *supposed* to be communicating the information to me, for some reason I was getting overlooked or bypassed (A)nd I did talk to them about it and of course they apologized, but it ... it didn't really change so what I had to do was partner with people that were getting the information.... And that's unfortunate but that happens. I can think of several situations where that's happened.

Grace reported one additional marginalizing experience. She termed this experience "corporate bullying." In her situation, requests or needs were considered unimportant or secondary to others' requests for unknown reasons: "I have had some of the corporate bullying that can happen in [the] public sector as well, where someone doesn't like you for whatever reason. And if it's the Chief Financial Officer, they make sure that your program does not get funded or gets funded inadequately."

Marginalization created obstacles to the co-narrators' professional work and advancement. The co-narrators experienced situations in which their professional input was ignored or discounted, they were not respected, information was deliberately withheld, or "corporate bullying" occurred. They experienced frustrations and struggles

in these situations as they attempted to be heard and taken seriously, build relationships,

and access needed information.

Narrowed Pathways and Glass Ceilings

The paths one chooses and the choices one makes may determine opportunities or

obstacles for professional advancement in specific areas. By choosing to pursue certain

job opportunities, the co-narrators revealed doors for future positions may be opened or

closed. Helen described being warned that by taking the CIO position she was not going

down the proper path to one day become President of a higher education institution:

> Well, when I took this IT leader job, the Chancellor ... pulled me aside and said,
> "[Helen], I think it's great that you want this job, but I think you should recognize
> that it's not the kind of job that's going to give you a path to the Presidency, for
> example. If you really want to move up in higher ed, you need to go for a
> Deanship and a Vice Chancellorship and then Chancellorship." So I did think
> about that. I don't think I really have that much interest in being a Chancellor.
> And I'm not even sure I want to be a Dean.... (B)ut I did give that careful
> consideration because I thought well what if I change my mind some day, what if
> I really want to move up?... I think he was offering me good advice and you
> know warning me that if I took this job it might have longer term repercussions
> and I think he's been right. I mean, there was a Vice Chancellor job open and
> certainly I was interested in it. And I asked several people about it and they both
> told me that the requirements for the job were pretty significant and that I didn't
> have them. And so I didn't bother to apply.

Educational choices made by the co-narrators created both opportunities and

obstacles. Opportunities were created if proper disciplines were chosen. With a

background in computer science and mathematics, Helen's education provided her with

good credentials. Helen discussed how the lack of a good educational background for

technical and leadership positions leads to promotional obstacles for both men and

women:

... I think it's unfortunate that more women don't go into computer science.... (W)hen I was in computer science, I was working hard to encourage women students to take that discipline and I ran a mentoring program for a number of years and we tried hard to encourage women. One disappointment I have in having my current job is that I'm no longer in a position to mentor women students in a good way. And I think the computer science department has hardly any women students anymore, which is really sad to me....

In higher ed I would still say that advanced degrees help a lot.... I think it's possible for people to come up through the ranks but I think it helps them if they recognize and hire degreed help. Don't just think that you're going to have your bachelor's degree and that's it. Certainly, in other areas of IT and outside of higher education that probably doesn't matter as much....

Helen confided that by taking the CIO position, her choice presented "long term repercussions" that limited options for other professional advancement. She encouraged others pursuing CIO positions to get advanced degrees and have a background in computer science.

Alice discussed her educational background. At times, the fact that she only had a Bachelor's Degree presented obstacles:

That's been an interesting discussion around here over the course of my last two Director positions. Because in those searches, faculty have sat on the search committees.... The faculty are always looking for faculty support and faculty background. So some of them argued that I didn't have a Masters, I didn't have enough faculty background, I've never taught in a true academic setting. You know, I've done seminars, those types of things. But not truly taught as they would say. So there was some questioning: ... "Maybe we need somebody that has more background in that area, that has worked with faculty more, that has been on the faculty".... But actually, the Dean and Vice Provost at that time said you know, that's fine and dandy but typically you lose the experience and the knowledge of what really needs to happen and how to run the unit, cause there's a piece of that that if you don't understand and you just understand faculty needs you're going to lose or miss out on some opportunities. So it certainly was discussed during those searches.... I'm here, so I'm assuming that people accepted that and also gave me an opportunity....

Alice experienced a lack of trust or negativity from faculty for not having an advanced degree or not being a "true academician." She observed a "pecking order:"

> (I)n the academic world there's always a battle of are you a true academic background or technical and then depending on who you talk to whether they relate to that better or not. So it's always a challenge to win the trust or win the respect of the campus community. And I would think that if I had more of an academic background, I would still have that challenge cause then the technical people and the administrative people would be saying, "well you don't know what you're doing, you're from academia"....

Alice discussed the importance of a balance in one's background related to having actual work experience and being educated:

> (I)t's also the experience and the hands-on knowledge versus the book experience. And if I were to look at hiring someone who all they have done is go to school all their life and never been in the working world, to me both business and education that's a big benefit. I think there are so many situations where if you have not lived it and just studied it, you're at a disadvantage. So I think it's hard with some of these positions to convince the academic world that is trying to hire you of that. If I were to go to the business sector again, I probably wouldn't have any problem [with trust and respect].

Alice had considered and talked with colleagues and mentors about pursuing an advanced degree: "My prior boss thought that I should go forward with [a Master's] so that the next opportunity, and I think he meant his job, that I would have an opportunity to do that, cause he didn't feel that I probably would be given the opportunity without a Master's."

Yet her faculty advisor and mentor disagreed: "what you do, you don't need that. Your experience needs to come from being in the trenches and doing your job. And going back to school and reading a book and doing a dissertation is not going to do you

any good." She heard "two different philosophies" about the importance of a degree for career advancement.

Alice discussed her perception that the lack of an advanced degree will not cause hardships for her in her current position at this institution:

> ... Because I think my work ethic and what I've done here speaks for itself. But I don't think too many people would question that. I think not having a Master's if I were to go somewhere else to another university may have an effect. I've seen that on job requirements. We've actually talked about it at the [State Technology Leadership Group] and the value of that.

Alice had received advice and feedback from mentors and faculty as to the importance of an advanced degree. She was aware of possible paths and choices available to her for career advancement by either staying at her current institution or pursuing positions elsewhere.

For Grace, currently working on her Master's degree, the cost of education in the early years of her career posed a challenge:

> ... As you know, for example, technology training for technical classes is very, very expensive, $1500 and above. And I'm talking about really technical type systems administration, those really techie type positions. And in some cases I had to charge it and then, of course, you had to pay that and having a family and all of that was pretty difficult. (A)nd in some cases those particular training courses were not reimbursable by the company.... (But) the motivation was there.... It was part of my own career development plan.

Grace placed value in having a good educational background. Even though it caused hardships for her and her family, she pursued additional education as part of her career development plan.

For the co-narrators, having a background in technical fields, computer science, or other related fields was preferred when pursuing positions in information technology.

Computer science and other technical fields and disciplines are very male dominated and have been historically. While Helen acknowledged that successful CIOs quite often have other educational backgrounds than those related to computer science, she was quite concerned about the lack of women entering the computer science field:

> Well it's terrible right now and I would say more on the student side even than on the faculty side. My husband still teaches computer science. He's very concerned about it. We talk about it quite often. There are very few women now [going into computer science], at least here at [University] and I think it's a national trend.

The choices the co-narrators made in acquiring their education, both the discipline and the level of degrees, and the choices the co-narrators made in pursuing the CIO position at their particular institutions have, to an extent, defined certain paths for additional professional advancement.

Another phenomenon that affects professional advancement for many women is the "glass ceiling" phenomenon. As women rise to higher levels of management responsibility in organizations, they often reach a level that seems to create invisible barriers to rising above it. This "glass ceiling" may prevent qualified women and minorities from achieving upper level management positions.

While not having personally experienced the glass ceiling phenomenon, Alice described experiences her friends had in reaching what they described as the glass ceiling: "[Other women in the College] ... felt that they were not being given a fair chance. (A)nd I think in most of those situations they had some type of relationships with their current supervisor that may not have been smooth all the time. And they thought that that [the glass ceiling] was probably the reason...."

Grace experienced a glass ceiling in the business world: "I think I kept reaching what they call the glass ceiling and to me that's probably why I changed jobs.... Because to get to the next level [in the business world], I had to move somewhere else...."

Helen questioned whether being told she wasn't qualified for seeking a Vice Chancellor position was related to the glass ceiling or just lack of qualifications: "Now was that a glass ceiling thing? Or was it people being honest about what my background was. I never felt it was because I was a woman and they were looking for a man for the job or anything like that. I just felt that they were more familiar with what the criteria were for the job and felt that I didn't have that experience."

Unsure of any direct effects of the "glass ceiling," the co-narrators additionally described experiences related to covert practices by organizations for which they worked. They suggested organizations often engage in covert practices when providing promotions or filling positions. Such practices suggest the existence of a "glass ceiling." Grace described such an experience she had encountered related to a professional advancement opportunity for her in the business world:

> (W)hen you're within an organization, you pretty much know how the network works and so you kind of do a lot of feelers and all of that. And you know pretty much know what people are looking for and it may not be necessarily on paper. And if I didn't have it on paper it was like you know, I'm not going to go for that. Now there was one position that I did force them to re-post because they tried to do what they call a slip-in or a slide-in or whatever and the rules said that all positions have to be posted. And they didn't post the position and it was a position that I was interested in. And so I brought it to their attention very nicely and diplomatically and they said it was an oversight, but I know it wasn't.... But they ended up interviewing me, but they had already, I knew they had already made a decision and promised this young man this Vice President position. And he was a great guy. I knew him, a friend of mine actually, but really didn't have the qualifications. So I think they thought they had made a mistake. And they

came and talked to me and said, "You know, we don't want you to leave. We want you to stay. And we will make this up to you." And about a year later, the guy left and they had another search and I interviewed and I got the Vice President position.

Grace discussed other instances during her career related to practices suggesting the "glass ceiling" phenomenon:

> (T)here have been setbacks and ups and downs. (W)ell one particular incident I can say it probably was because I was a female where a male counterpart of mine got promoted over me that didn't have nearly as much experience or whatever....
> I interviewed for a position in [a location] several years ago. And I knew they really liked me, they really liked my background and everything but I really think that they really wanted a male in that position.... (W)ell what they said was, "This is a traditionally male position." (I)t was an IT department but the department was predominately, even in this day and time, predominately male.... Now they had females but they were like secretaries and administrative assistants and those clerical type of positions....

Grace discussed additional covert actions she had observed and experienced in the corporate world:

> (S)o that's when [mid-level job at Company A] I first began to notice a discrepancy between ... the treatment of females ... and the treatment of males in management.... It was so much subtle to the point where if it was going to impact the bottom line, it wasn't allowed to happen.... (B)ut if it's just going to irritate you or frustrate you until you leave or whatever then ... those were the things happened.

Alice had also experienced covert practices in the business world suggesting the existence of a "glass ceiling:"

> (T)here was only one time where the position [a higher position she was interested in], I'll say opened up, but ... we were not given an opportunity to apply. (I)t's like they already knew who they wanted and that's who was getting the [job].... I don't remember them [advertising the position]. It's this big change all of a sudden. For some reason, I don't even know why the gentleman that was currently the manager all of a sudden took another position in the company and then this other guy was here. I have no clue how, why, that happened.

The "glass ceiling" phenomenon, whether direct or indirect through covert organizational practices, was acknowledged by the co-narrators. The co-narrators were unsure about direct experiences and incidents but also spoke about covert organizational practices suggesting the "glass ceiling."

The co-narrators experienced narrowed pathways as several obstacles were experienced. Job choices made stifled certain professional advancement opportunities. The educational backgrounds and the levels of education held by the co-narrators created narrowed pathways also leading to professional advancement obstacles. The "glass ceiling" phenomenon and covert practices by organizations suggesting "glass ceiling" trends were discussed by the co-narrators as influencing critical choices made and invisible barriers encountered in their professional advancement.

Jealousy

The co-narrators reported jealousy by others created obstacles as they progressed through various stages of professional advancement. Jealousy by others often created uncomfortable situations leading to others challenging the co-narrators' qualifications and knowledge. Helen described a male who was disappointed and jealous of her getting the CIO position:

> (T)here was one male faculty member who applied for the IT director job at the same time I did. I know he was kind of disgruntled about me getting the job and him not. And the only reason I know that is because another faculty member told me about [how] this fellow was complaining to him about me getting the job and him not getting the job. And the faculty member who told the story said, "Well I said to him, at least she knows how to write a program, [Name]." So I think he was jealous and disappointed that he didn't get the job, but it was clear to me

from the get-go that he would have been horrible at it and I was going to be good at it. So it didn't bother me too much.

Alice described jealousy from others as she moved into management positions: "I think some of it was jealousy, coming from working with them side-by-side and you share everything, you go out, you have a drink, you go to dinner, you mingle, you go to their house for a birthday party, you do all these things and then life changes when you get to those roles when you can't share as much."

Grace recalled: "there was some jealousy going on there" when her Vice President accepted some of her ideas over those of other colleagues. She added several other examples of times she had experienced jealousy, including those in higher education: "I have had men challenge me in meetings, especially when they thought that I shouldn't have the job for whatever reason and they were more qualified or their friend was more qualified. I've had people try to circumvent decisions and all of those types of things...."

Grace stated that "titles are prestigious" as they often reflect the importance of a position within an institution. Grace experienced a colleague even being jealous of her title:

> I was hired in a position at one of the institutions. And there was another person that had been there a number of years and they didn't have the same title—they weren't in my area but they didn't have the same title. So I met with them and they said, "Gee, you know, Directors are getting younger and younger every day." And so I knew then that it was an issue.... And the next thing I knew, I had a budget and a staff and everything like responsibility that came with my Directorship position. This person had maybe one of two people, administrative people, and they were called a Coordinator. Well, the person caused such a fuss that they ended up getting the title only of Director.... Because they just couldn't accept that I was a Director and I had to be in my early thirties at that time. And

they had a hard time with that. They would be retiring in a couple years and they had been there for years. So I think that was a jealousy of title, and titles in institutions are prestigious....

Grace also experienced jealousy as an obstacle when others deliberately withheld information: "At [University B], there was lots of women, and I think that jealousy thing or whatever would come up. And so, sometimes other [female] Directors would withhold information just to make you look bad.... I remember that in that environment more than I have in any environment."

Jealousy became an obstacle to the co-narrators as colleagues and associates experienced disappointment and resentment. These jealous colleagues' and associates' actions and statements created obstacles for the co-narrators as they experienced a lack of trust, decisions were challenged, workplace turmoil was created, and information was withheld.

Isolationism: "They Wouldn't Even Look at Me"

Isolationism was another obstacle experienced by the co-narrators during their career advancement. The co-narrators discussed experiencing isolationism at times when they were the only woman in a particular situation or role, when they were ignored, and when others tried to protect them. This isolationism caused the co-narrators to feel "out-of-place" and placed them in uncomfortable situations.

Alice experienced isolationism when ignored by certain disgruntled staff shortly after she became the CIO: "... (I)gnoring me if I said Hi in the hallway and it was like they wouldn't even look at me...." and isolationism as the only woman in the State Technology Leadership Group:

Before my boss [left] and he started taking me to those meetings, cause he was on the Board, not me, I was just the sidekick. I felt very, very out of place cause there were not other females there. It was all males and they had their discussions and I was just sort of off to the side.... It's changed over the last five years because more and more females are now in those positions and they come to those meetings. It's certainly not 50/50 yet ... but you know it might be 25-30%....

Alice described how the Group has changed with more females, now being "more interactive" and having a tone of more "mutual respect."

Helen similarly confirmed experiencing isolating situations: "I've been in a position a couple of times as I mentioned, where I've been the only woman somewhere.... (I)t happened less and less over the years." Helen described how she experienced "strange" feelings for being the only woman in her Division at one point:

... (W)hen I was at [College] for I think two of the three years I was there, I was the only woman faculty member in the Division. And I felt like the only woman faculty member in the Division.... The male faculty were great to me, they were nice, they were supportive, they were encouraging but I could not help but feel strange about being the only one. I think in the third year there they hired a ... temporary faculty member woman in biology.... And she and I were friends and that was very helpful to me just to have another woman in the college....

Helen described a recent isolating experience she had:

Well, I just think when you're the only one that's different; it's just inherently kind of strange. And you know I had that experience just last week. We have a committee of the campus governance that advises me and [another director]. And we were getting together for the first time this academic year and people were coming into the room and all of a sudden I looked around the room, not everyone was there yet. The meeting hadn't started. But I looked around the room and I was the only woman there. There were probably ten to twelve people there and I was the only woman. "Whoa," you know I actually said it out loud. I said, "What's going on here? I'm the only woman in the room." I thought, "oooh this is scary." Well [husband] is on the committee and he laughed and he said, "oooh yea, right?" (laughs) You know, so he knows that I'm not really that intimidated, but it was unusual and it's just an odd feeling to be the only person. I think a lot of the people of color and how it must be. I think they have that experience much more often.... And it's just hard.

Grace discussed past experiences with being "the first, the only female at a director level:"

> ... Some of the obstacles were just the fact that being in a traditionally male dominated role. (N)ow it's more accepting because there is more females in these particular roles, but years ago, I would show up to a conference and I was probably ... the first, the only female that was even at the director level. Everybody else was like a programmer analyst or a developer or something like that. Now as the years went on of course, there was more females that came into play, but I had to deal with that for a number of years.

The co-narrators addressed situations in which they were the only woman. Alice described the experience of being in male-dominated situations as being "off to the side."

Grace stated isolationism resulted from others "protecting" her from issues or situations:

> Sometimes the male counterparts appear to want to protect you from certain issues or whatever. But I look at that as preventing me from doing my job or dealing with the situation. But a lot of times they know somebody is really rough to deal with or whatever, they'll try, some of them will try, to run interference or either well it's presented as if they are running interference FOR you.... (W)hether you ask them to or not. I've had male counterparts that felt that they had to protect me for some reason.

Protective actions were also discussed by Helen. Helen talked about her mentors trying to be helpful and protective. However, their actions isolated her and prevented her from growing and expanding her own experiences and problem-solving skills:

> ... I would say that probably the men [mentors] were somewhat more likely to try to solve problems for me than offering advice about how to do it myself. I wouldn't say that was a really strong trend, but I can think of examples that would support that. The female Vice Chancellor, I remember I went to her with something and she jumped in and started telling me exactly how to solve the problem and I stopped her and I said, "You know, I didn't come here wanting you to tell me how to solve this problem, I just wanted you to listen and make some suggestions. But I want to be the one to solve this problem." And she was great, she just backed right off and said, "You're right." I'm not sure I could have said that to some of the men who were mentors to me....

Helen faced protective actions from both males and females. She experienced more comfort and acceptance in talking openly with a female mentor who attempted to protect and help her than she perceived she would have with her male mentors.

Isolationism created obstacles when the co-narrators were often the only women in a situation, were ignored by limiting conversations and interactions, or experienced others "protecting" them, causing more harm than good by limiting opportunities for growth. The co-narrators experienced isolating situations in which they felt "out of place" and disregarded, resulting from an isolating environment.

Tokenism

Tokenism was another obstacle mentioned by Alice and Grace. Tokenism created situations in which others perceived that Alice's and Grace's experience and expertise were secondary to being a woman. They described experiences related to tokenism and others' misperceptions of them as tokens, even though they did not view themselves as such.

Grace discussed experiencing tokenism in the business world as well as within higher education:

> (T)he mid-level [management] was embarking on something different. I didn't know all the differences as far as how I would be viewed as a female ... in mid-level management. But the entry level management wasn't too much of a big deal. Or I was just naïve or didn't notice. But mid-level management—I kind of got my first dose wonder[ing] if they're doing it because I'm a female....

Grace was more specific about her current position: "I got that [tokenism] reaction and even here I got that reaction as well. (T)hey were looking for another female to sit on Cabinet because they only had one female on the Cabinet."

Alice discussed how a woman's lack of success can lead to perceptions supporting tokenism:

> ... (B)ecause of the affirmative action and the equity pushes so hard a number of years back, trying to balance that out, that sometimes women in an academic setting are perceived, well you got that job because you're a woman. And they had to balance the scale. I think some of that is there. You can look at that same thing and say they're given the opportunity, it's up to them to succeed or not. You know, you can have the opportunity and [you can] not be very good at it or you can prove yourself.... The worst cases are those that were given the job because, let's say they're a woman, and then they can't do the job.... And then what do you do?... And there are certainly cases of that out there.

Alice voiced concerns about women who are given leadership opportunities and then do not succeed:

> ... Can you learn to be a leader or are you born with it? It's a one of those struggles that you try and figure out. Because it takes a certain type of person and I think sometimes people think they can lead, and then when they get there, the challenges are different than they thought, the expectations. And they struggle with it and they become someone then that they're not. (B)y trying to do that job and trying to do it like they think it should be done versus, being more of themselves in figuring out.

Grace expressed her frustration in regard to others' misperceptions that she acquired her position *only* because she was a woman. She vociferously described a conversation, while in a past position, she had with a man: "I mean, really, I was so offended. (W)hat do you mean, 'How did I get this job?' ... I said because I have this, this, this, and this. And they were like, "Oh I didn't realize you had all of that [speaking of experience and qualifications]." Grace experienced frustration as it was evident to her

that her experience and qualifications were considered secondary or not even considered

at all, due to the misperception that she got the job due to being a woman.

Alice and Grace experienced misperceptions of tokenism by others. This obstacle

concerned them since their experience and qualifications provided them with sound

professional credentials. Another concerning obstacle was that of the "good old boy"

network."

Good Old Boy Network: "Still There—Different Mask"

One of the obstacles all the co-narrators addressed was the "good old boy"

network. Each had experienced the intimidation and unwelcomeness of this network to

different degrees. While all agreed that the network's prevalence was diminishing, Grace

pointed out that it often "wears different masks."

Grace described several experiences, including some in the business world, with

the "good old boy" network. She learned over the years that trying to break such a

network is a losing battle. She confided one strategy she had learned was to "get to a

level where they don't feel threatened by you":

> I've learned a lot by having to work in cultures that have those good old boy
> networks. (I)f you come at that whole network really, really strong and hard and
> fierce, you're gonna lose.... I mean unless it's something legal. You're just
> gonna lose. I mean they've been in it longer, they've been in the company longer,
> they know everything, they know what's going on. So you're gonna lose. So you
> really have to come at that network as "gee can you explain something to me. I
> need you to help me here." Now sometimes they'll do it, but sometimes they will
> not. (B)ut more than likely it's the approach that you take. And sometimes you
> can infiltrate that network. You're never gonna be 100% [accepted]. (B)ut you
> can get to a level where they don't feel threatened by you, and they view you as
> one of the team players....

Grace discussed male sensitivity and resistance toward females in the information

technology environment: "I've ran into resistance from mostly males. Males that have

been the Director and been in IT for ten years as a Director. (A)nd I've come in and I'm

the new person on the block—she's going to change up everything and all this. And so

I've had some resistance there."

Grace expressly addressed the existence of "good old boy" networks in higher

education:

> I think it has a different mask [in higher ed]. (B)ut I definitely think it's here
> [higher ed]. And in fact I know it's here. I've heard people talk about it and they
> don't even realize that they're talking about it. I hear people say "there's four
> Deans here, they really run the school. (A)nd if you get in with them,
> everything's great.... (I)f you don't they will give you hell, essentially." So the
> good ole boy network still exists. I just don't think it's as prevalent in a lot of
> organizations as it used to be. But it's still there.

Grace recognized "good old boy" networks in her past and present professional

environments. She learned strategies to help her work within the networks even though

she still experienced less acceptance.

Alice similarly discussed experiences with the "good old boy" network. Alice

discussed the intimidation by males many women experience in college as they consider

pursuing computer science and other technical fields of study: "... (W)hen [women] get

to college they're intimidated by their male counterparts and you're afraid to try it."

Alice described different "good old boy" networks she had experienced in the higher

education environment:

> ... the old group [of male members] that used to be at [State Technology
> Leadership Group]. That was very hard and impossible to crack. But that's since
> dwindled, just because the players have changed and there are more women and

they have a say and vote on the board so they cannot ignore them. It's just not feasible for them to do so. (B)ut again I think most of those people have since retired or moved on anyway.

Alice recalled the unwelcome environment and attitude of this network:

During the meetings way back when, the women just weren't recognized, even walking into the room, whereas a man, a male "Hey how you doing Joe? What you been doing, what's new?"... And it just was not a welcoming environment. (N)ot everybody was that way but the majority. And I think part of it was most of them at that time had been there for so long, that's what they were comfortable with. They didn't know me walking in, plus I was walking in with my boss so who was I anyways, even though he was trying to prep me, prime me.... (S)o just their actions. Lunch—it was not like you were invited, "Hey come over here and sit down."

Alice painfully described the male network in her staff as she began her current position: "That was hard. Their background [was] women didn't run something like this. They didn't have the knowledge.... It's certainly not there any longer. Or at least not that I know of...." In addition, she also mentioned "a clique of mostly men" in the upper administration at her institution which has slowly diminished over the years.

Alice described people "cringing" when certain authority figures were present: "Certainly with the old administration—power dynamics, just the presence of certain people—it's just like you cringed, you know. Most things that would come out of their mouth would not be positive. It would be always looking for the negative."

She described a more recent Vice President, but still one of those people that made others "cringe" when he was around, exerting his power in a situation:

One other case about three years ago when we were starting out a very large project here at [the College] and I was to be the project manager and a male, actually a VP on the administrative side of the house, I could tell didn't feel comfortable having me run the project and be responsible for millions of dollars

and what did I know about this. And [he] basically attempted to try and get the university to hire like a consultant to help run this project....

Alice addressed elements of the "good old boy" network as women pursued education, as a part of a State Technology Group, from her staff as she began her position, and as a part of the upper administration at the institution. Over the years, the network diminished and changes occurred due to people retiring or leaving.

Helen discussed her experiences with the "good old boy" network as non-significant: "I think I've just been lucky enough to be at institutions where that has not played a major role. I've had those experiences but they have not been big deals for me." Helen spoke of her and a male colleague's experiences and discussions at one college regarding the "good old boy" network. Due to both their backgrounds being less privileged than many, both experienced feelings of the "imposter syndrome." The "imposter syndrome" typically dismisses one's successful external accomplishments, such as degrees and professional promotions, attributing success instead to strategic contacts, an individual's personality, or cultural wealth. It often leads to individuals doubting themselves and their abilities:

> I had a close friend there who was a man who was a department head of biology.... He liked to talk about the good old boys a lot. He was much more attuned to that than I was and complained about it a lot.... He and I both came out of families that were not highly educated families and sort of felt that imposter syndrome a lot. We used to talk about that.... But my department head at [College], his father had been a professor at Harvard and he went to Harvard and it was interesting to contemplate the concept of cultural capital because when you have that ... experience growing up you feel that you belong.... And there's a sense of entitlement that those of us that kind of clawed our way up out of the lower middle class don't feel.

While Helen's experiences with the "good old boy" network were non-significant for her, she still lacked of a sense of feeling privileged or powerful. She observed others from higher social classes who did not have to "claw their ways up" having this sense of privilege or power.

The co-narrators had learned to work around the "good old boy" networks or work within them, to the extent they were accepted. Still alive in the higher education environment, but not as prevalent, the "good old boy" network created obstacles for the co-narrators, other women, as well as other men. The network created experiences in which the co-narrators were intimidated and unwelcomed. While some women experience intimidating and unwelcoming environments in fields predominantly occupied by powerful males, other women experience struggles due to trying to balance personal and professional responsibilities.

Family Commitments

Family commitments, conflicts, and responsibilities often lead to obstacles for women in leadership positions as they must balance personal and professional responsibilities. The co-narrators described such obstacles as including the fact that women are still considered the primary family caretaker. Other obstacles related to family commitments were challenges created by a lack of flexibility in the workplace when one needs to be at home and mobility challenges when pursuing a new professional position. Often the spouse also needs to find a position, so finding two positions in the same location can create obstacles as organizations may be reluctant to hire one's spouse.

While Alice did not have children, she expressed understanding toward those staff who do as she described family commitments and confirmed that men are sharing in childcare more. Women leaders are accepting of that changing role:

> I have seen a few more of the younger males (say), "My kid is sick I need to go home." Whereas it's always been the woman in the past that needs to go home. Even though they're both in professional jobs. I see a little more of that being shared. And you know we're accepting of that because if it was the woman saying, "I've got to go" you wouldn't stop her.... So you're not going to stop the male.

However, Grace amazingly observed: "[men] could have a kid in the hospital or whatever, they're at work!... (B)ut that's because they have a wife to parent and all those things.... (T)hey tend to make all those [critical] meetings...." Grace faced, and has observed others facing, situations where the woman is still the primary family caretaker. She discussed the challenge for her of balancing professional and personal responsibilities:

> I think my main obstacle was trying to balance my work life and things that were going on at home with my kids and my husband. (H)e's ill but he's been ill for awhile and it's got progressively worse but, just trying to manage what's going on there and then keep on top of what's going on here.... I am now [the primary family caretaker now and when the kids were young].... (M)y husband's job was always that "I can't do it because I've got to do this...."

Grace calmly described a specific challenge that arose:

> Well it does create some challenges. For example, we had an Alumni foundation board gala. And I was all dressed and everything and then, my husband collapsed and had to go to, cause he has medical issues, had to be rushed to the emergency room. So I missed that. So it does present challenges from time to time. And it doesn't happen a lot, but occasionally.... And so those are the challenges that you know that you have to be prepared for.

Grace faced obstacles as she was expected to be the "primary caretaker for the family" while holding a professional position. She observed that this function still falls on women more than men. She stressed being prepared to meet these challenges through good upfront communication with one's superiors.

Although Helen was very supportive of and positive about changing roles and recognized the need for flexibility in the workplace, she stated that "difficult employees" may not be considered worthy of such "nice perks." Helen described a situation involving one of her staff members not being allowed to move from full-time to three-quarter time status:

> I do have one woman employee right now who has asked to go three quarter time and has been denied. And she's kind of a special exception because although she reports to me she's in a special lab that serves two strategic units and so I have to work with the two Deans in making some of these personnel decisions.... (O)ne of the deans, a male, is strongly opposed to her cutting work. Another one would probably give it to her because he kind of likes her. And I was just on the fence as well as her manager who's a man. And the reason why I'm on the fence is that she's just one of these really tough employees to manage.... She's just, you know, there are people like that.... There are difficult employees and there are wonderful employees and it's hard to want to give somebody who's a difficult employee a nice perk like that.... And there's a sense of entitlement there that kind of grates for me. I don't think I believe that—that you are entitled to have a three quarter time position....

Mobility obstacles are often created by family commitments and spouse's jobs. Helen expressed mobility concerns related to two professionals trying to find positions that fit both of them well:

> Both times when we looked, we tried to do the best we could for both of us....
> The two body problem is a problem. I mean, if I really wanted to leave, it would be difficult because of [husband], you know, we'd have to find two jobs.... And (husband) he does not have a Ph.D. in Computer Science but yet that's his field and it's not clear that he could as easily move as I could. So, yea, I think it's

somewhat of a problem, but it's not any worse for me than it is for anybody else that's part of a professional couple.

Helen spoke of her observances regarding the lack of support from the institution for spousal hires and the creation of obstacles:

> I know within the College of Science and Engineering at [the University] right now there's strong concern about women leaving the college and I've been just on the periphery of that, since my tenure is still there but I'm not real directly involved. They've been meeting with the Dean and I think the biggest issue there is not so much salary as it is spousal hires. I think I was really lucky to get a job with my spouse and both of us hired at the same place. I think many of the women who come to [the University] in science would have left and wouldn't have gotten a job if their spouse hadn't. And then they're going to go someplace where they can both have a job.... So that's an issue in our college right now.

Helen discussed the importance of spousal hires. She stated she was very lucky that both she and her spouse were able to be hired at the same location. For those not so lucky, difficult choices or experiences occur.

Family commitments regarding children were less of an obstacle for Helen and Alice, not having children, as compared to Grace, with four children. However, other family commitments and conflicts, such as a lack of flexibility and mobility, and a lack of spousal hiring created obstacles for the co-narrators or other women colleagues causing hardships as they attempted to balance their personal and professional responsibilities.

Double-Binds

The co-narrators described situations involving double-binds they had experienced with staff, colleagues, and supervisors. These situations created frustration for the co-narrators as they were tested and challenged while simply trying to effectively perform their job requirements. Alice described double-bind situations she experienced

as she tried to learn more about her staff's work by asking questions and interacting closely with them. However, some staff seemed to perceive this involvement as due to Alice's incompetence while others viewed her as a threat:

> ... (I)n this position and the position I had prior, the Director of Academic Computing, I would ask a lot of questions and be involved in a lot project planning, I think more than they were used to. Because I was trying to learn and make sure I understood. I don't like to manage an area and not understand it. I don't think that's correct or proper. And not to say that I didn't have knowledge walking into these positions, but there were certainly areas that I lacked and knew that and could admit that.... A couple of the areas I had worked in that I was going to be managing and a couple of the areas I had less experience in. So those are the areas that I probably dove into a little more and then I had people worry that I was going to change their decisions or say "No, you can't do this. Or why are you doing it this way?" When my intent was just to learn more by asking questions and making sure I understood and felt that I could make overarching decisions when it came to budget issues and projects. You know, what projects are we going to take on and for what reasons.

Grace provided another example from the business world of a double-bind experience she had when she worked hard to excel, causing the males to feel threatened:

> I did a lot of things to really change how my particular unit provided customer service and all those types of things. And we were really getting great accolades from everyone.... (A)nd one day there was a meeting. An early morning meeting. Coffee meeting—in [Bob's] office and [Bob] was another director. It was [Bob] and [Dave] and [Steve].... (A)nd I was a director too, but I was the only female.... So when I got in early, as I usually do, they said, "Hey, you know, come on down. We're having coffee. We're just chit-chatting about something." They got me in the office and they said, "Well, you're gonna have to slow down...." And I thought they were joking. "You're making us look really, really bad...." And so, you know, cause I'm usually quick-witted, I said, "You guys are just gonna have to run a little faster." And I said "Have a great day." (W)ell, that didn't set well with them.

Helen also described a situation in which she was trying to do her best as the department head of an academic department. This position was previously held by one of her mentors who, after stepping down, became a faculty member in the department.

While she tried to be accountable and responsible and treat people fairly, this former mentor wanted special treatment in his annual review. If she gave him special privileges and ratings for merit pay purposes, others would be upset. So she treated him and rated his work as she did others in the department causing him to become critical of her and angry with her:

> But when I became department head, even though it was his decision to step down, he became more and more disenchanted and it became really kind of a personal thing between us. And it always manifested itself in the annual determination merit.... And there was one year in particular when I think he had been on sabbatical ... not doing any service and not doing any teaching.... The bigger problem between us was that he took the point of view that he was on a ten month appointment and if he took two months off every summer to go and work on his house and as a consequence didn't do as much research as those of us that worked twelve months a year, that that should be okay and shouldn't be held against him. So he got very angry with me and really kind of took me to task and sent me long ranting e-mails. So I felt he was out to get me I guess.... I think he wanted me to back down and change my decision and.... And I wasn't willing to do that.

Grace reported experiences in which she felt she was being tested and perhaps set up for failure when dealing with personnel issues. She was expected to come into a new position and quickly dismiss a problem employee without having time to evaluate that employee. She would either face repercussions from the union for having fired the person so quickly or repercussions from her supervisor for not firing the person as directed:

> I was hired to really turn around IT [in one job]. I knew this and they had some really, really, serious problems. And one was their customer service. (T)his person was really, really old-school, [belonged to] the union. I had to go the documentation route on the person. Cause the person wouldn't budge, they wouldn't change, wouldn't do anything.... [He/she] was running people away, customers and everybody. (P)ersonnel issues—that particular one was a huge obstacle because they were waiting for me to turn this situation around probably

in 90 days.... (A)nd I do believe in giving people a chance. You know, I just can't write somebody up and fire them in 90 days. That's just ridiculous.... So I gave the person a year. I did get some repercussions on that, but we finally was able to change that whole area around. (B)ut I kind of got it for that one because they were literally, they thought that 90 days.... And I've been told coming in the door, if a male were usually my boss, you get rid of that person.... (A)nd, at first I didn't know how to take that. And then one time I said, because I couldn't believe it, he kept saying get rid of that person, get rid of that person, I said, "You know what, I really don't appreciate you putting a monkey on my back. If this person was a problem for ten years, you should have gotten rid of this person before I got here...."

(T)he very first time I dealt with that was in higher ed.... (W)here they had a problem employee for years.... [And they] let it go and go and go. And people try to come up with work-arounds and that's acceptable.... And when I came in I was told to get rid of her.

Another double-bind for Grace was when she was hired into a certain position to perform certain tasks and was then asked to perform other tasks that were not part of her duties. The performance of these additional tasks covered for her supervisor's lack of skills. If she had not been willing to perform these tasks, due to them not being included in her job description and expectations, she would have been considered disobedient. Grace explained:

My first job in higher ed at [University B]. I reported to a boss that was really not a frontline type of person. And he had three director reports. We were all female and all very strong females. And so whenever he had to do a presentation, he would ask me or another person to do it and eventually I ended up doing all of his presentations to the point of not only preparing them but in a lot of cases giving those presentations as well. Which was not part of my job and quite frankly I am still amazed that I was doing financial presentations, and I was over IT.... It's because he was paranoid when it came to presentations.

Double-binds created constraints and obstacles for the co-narrators as the co-narrators' efforts and well-intended actions were often perceived of differently by others.

Double-binds also created expectations by superiors that were considered unreasonable.

These no-win situations often caused worry and concern for the co-narrators.

<u>Salary Inequities</u>

Salary inequities were another obstacle mentioned by all three co-narrators.

While the co-narrators each had experienced past situations where they earned less than

men while doing the same work, all stated that in their current roles they were being

fairly and equally compensated.

Helen described an adjustment made in women's salaries in the sciences when she

was a faculty member before becoming the CIO. She and her husband were hired at the

same salary, even though she had more experience than he:

> I think after I'd been here for a year, there was a settlement in which all women
> faculty in the sciences got a raise ... equity type. And I remember at the time
> thinking, you know [Husband] and I were hired at the same salary, at the same
> time ... and my first reaction was well, this seems unfair to him. Why should I
> get a higher salary than he when we both need it?... I should have come in at a
> higher salary than he did since I was coming in with three years of experience....
> (W)e both got our degrees at pretty much the same time or we both went
> on the job market at the same time. But I took an immediately tenured track
> position for three years and he was not able to find tenured track position so he
> took a one-year visiting assistant professorship and then he went back to graduate
> school. So, I can't give a good reason for it [she and husband hired at same
> salary] other than that I didn't make an issue of it.... (A)nd the salary was so
> much higher than what I was making before that. It just seemed like I'd died and
> gone to heaven and I didn't even question it.

In looking back, Helen acknowledged that she "should have come in at a higher

salary than" her husband since she had "three years of experience." The issue of salary

inequities in the information technology field is often raised in regard to discrepancies

between technical versus non-technical positions.

In Helen's current department, she stated that the more technical staff positions are generally paid higher salaries than the less technical staff positions. She also discussed a difference in skill levels:

> I sort of see it as a marketplace scarcity issue. I think that for the most part your value in the organization and your salary are pretty directly tied to how hard it would be to replace you. And I think it's unfortunate but true, that replacing somebody that has their primary strength of customer service is probably a lot easier to do than replacing somebody whose primary skill is programming or system administration or network administration....
>
> I do have a number of women whose skill levels I feel are not as good as some of the men's are. And why is that? Well I think in part there was a relatively short period of time maybe six to eight years ago when it was pretty hard to find IT professionals that were well qualified. And as a result we decided to hire some sort of clerical level people and see if we could grow them....
> (T)hey [women staff at help desk] just don't have the same skill levels the other people do. And yet ... some of them feel angry and upset that they're not making the same kind of salaries as some of our systems administrators or people with a lot of strong technical skills.... (T)heir primary skill is customer service—they feel that they are undervalued. I know that and yet I also recognize that at least among the institutions in [city], we probably pay our help desk people as well or better than most....
>
> That's a conflict and an issue when the help desk doesn't usually make the same kind of money as system administrators.... I suppose you could call it bias that some jobs seem to carry a higher salary with them than others.... (P)robably the people at the help desk would say its unfair that people with more technical skills make more money. I don't necessarily agree with that. But maybe it's bias....

Helen explained how she tried to be fair in rewarding staff:

> ... (W)e did a salary study comparing us to some of the other organizations in town ... and our help desk people are actually paid relatively better than any of the other places in town....
>
> (T)o me part of being fair is to reward people for their skills.... I don't think all skills are equal when it comes to the IT pay scale.... It has to do somewhat with how easy are you to replace. So it's just a complicated issue for me.

Alice described past salary discrepancies she had experienced as a programmer in

the business world:

> Salary I found out was an issue. I, at that time, was not married [and] did not
> have a family. [I] worked side-by-side with males and they made much more
> money that I did.... Some of them [had more years of experience], one was the
> same as mine. One was more because of (his) age, but their experience was in a
> different technology when they came there [and] they had to learn what I was
> doing ... and they still made more money....

When Alice raised the issue of salary inequity to the company, she stated:

"(T)hat's when I was told you don't have a family and they have a family to take care of

so you don't need as much money...." She responded that she did not make an issue of it

or pursue it more: "It just made me mad."

Alice stated that salary inequity has not been an issue in her current role as the

CIO: "(W)as certainly a factor in the business world. I have not seen that here in the IT

world." She described taking her initial position at her current institution as a

programmer and stated the salary she earned then was comparable to others with similar

experience: "Certainly everything was based on experience and coming in as a new

person I was less than a more senior person that had already been here. But looking at

others hired in after me or around the same time, I'd say ... it [salary] was very similar."

Alice discussed "dropping in pay" as she took the programming position at the

institution but felt she had benefited in the long run as compared to the business world,

which was more "pigeon-holed:"

> I've actually felt like I've had more opportunities here. (Y)ou accept the fact that
> you typically don't get paid like you do in the business sector. I accepted that
> when I left that area. I dropped in pay probably by 10 grand.... (B)ut I don't feel
> like I'd be where I'm at in the business world today, comparable to where I am

today in the education world. Just the different opportunities of working with the many different people on campus. I think business you get sort of pigeon-holed a little bit more and maybe not as broad as opportunities because it's the bottom-line. You gotta do this job and you can't focus on anything else.

Alice discussed the salaries of her staff, whether male or female, who are doing the same jobs: "(I)t's pretty even from what I've seen since I've been privileged to look at those ... and know more about those. I'd say I haven't really seen any discrepancy at all."

Similarly, Grace stated she has fared well with the amount of compensation she receives in the higher education environment as compared to the males in similar higher education positions: "(A)ctually, in higher ed I've fared better. If I do an analysis, amongst administrators, male and female, in higher ed at the administrator level, I'm not sure about faculty, I've actually fared better ... in higher ed." She then compared the higher education environment with the corporate world:

> In corporate America it really is who is the best negotiator. And then I think ... [in] government I did okay there. I did okay for a female, because I was technical.... (A)nd [I was] maybe 15,000 behind the male counterparts. But the other female administrators were way behind like 20,000, 25,000 dollar difference and a lot of them had more experience [but were less technical].... And when you try to address those issues, they just kind of get brushed under the table or you just get ignored.... And I was told previously that you get what you negotiate. When I talked to a male director in human resources about the inequity, he told me that you get what you negotiate.

Grace stated that female technical staff working for her earned similar salaries as compared to male technical staff. However, that equity was not evident prior to her tenure: "Well under my directives they do. People that I hire. People that have existed before, a lot of times they do not. They're [females] like anywhere, I would say, from 3-

5,000 dollars lower. And in some cases they may have even more experience in this male

job."

Grace stated that in her experiences technical staff earns higher salaries than non-

technical staff and males more often occupy the technical positions as compared to

females. She described how she worked to change the paradigm of technical staff being

paid more than non-technical staff in one of her former positions:

> I was very successful to get the human resources director and the chief financial
> officer at [Company D] to change that. We put more weight on the soft skills
> because, the technical skills are easy to get, it's hard to get those customer
> service, those good skills that [if you don't have] drive people away—80% of the
> problems that happen in IT are not technical. They're people problems—you
> didn't do something and somebody's mad at you. And then I spend my time
> doing damage control.

Experiences with salary inequities varied for the co-narrators. While occurring in

past positions, currently they have not experienced any such inequities in their CIO roles.

The co-narrators experienced many obstacles during their professional work and

advancement. The extent to which each co-narrator experienced the obstacles varied.

The more significant obstacles resulted from: stereotypic attitudes and beliefs by others; a

lack of recognition, support and trust from others; marginalizing experiences; and

narrowed pathways they faced for professional growth and advancement. Additional

obstacles were encountered when: colleagues became jealous of the co-narrators' titles or

positions; isolationism was experienced; others perceived the co-narrators were tokens;

"good old boy" networks confronted them with intimidation and unwelcomeness; family

commitments and responsibilities had to be balanced with professional responsibilities;

double-binds occurred; and past salary inequities occurred. The co-narrators often

became irritated, frustrated, discouraged, and upset due to the constraints and struggles created by the obstacles.

The co-narrators overcame or worked around the various perceived obstacles by using certain methods. These methods allowed them to gain confidence in themselves and further their professional work and development.

Methods Utilized for Overcoming or Eliminating Obstacles

The co-narrators discussed experiences and observations involving methods used for overcoming or eliminating experiences perceived as obstacles related to working in the higher education information technology field. Several methods utilized were interrelated and seemed to each contribute equally in their assistance to the co-narrators in overcoming the perceived obstacles. Support groups, friends, and colleagues assisted the co-narrators with overcoming obstacles related to gaining recognition, support and trust from others. Another method utilized was perseverance. Perseverance, often coupled with "pep talks" and support from friends and family, helped with overcoming obstacles involving difficult situations and disgruntled staff.

Another interrelated method was connecting with credibility. This allowed Alice and Grace to build relationships, deliver results, and gain respect from others. Changing one's communication strategies, another interrelated method, provided women with more perceived power, the ability to accomplish tasks, and build positive relationships. Having a good quality educational background, varied experiences, and good skills contributed to the co-narrators' credibility, assisted with perseverance, and enhanced support offered by

family, friends and colleagues. They were better able to overcome obstacles related to credibility, trust, and respect.

The co-narrators also described enlightening experiences and realizations that assisted them with gaining support, enabling disengagement, and dealing with disruption. Such eye-opening discoveries assisted the co-narrators in their professional work and advancement. They described methods of adapting their behaviors by "massaging an ego," becoming more assertive, working hard and long, and taking on other roles in order to continue with their professional work and advancement.

Aligning decision-making with certain principles and values provided consistency in Helen and Alice's leadership roles helping them gain confidence. Helen and Grace also found that by selling their talents and expertise to key decision-makers they were able to overcome obstacles related to a lack of support and recognition. In addition, the co-narrators discussed methods they used to minimize obstacles for themselves or to minimize obstacles for others so they could gain confidence and expertise in technical fields.

Support Groups: "Huge Source of Strength"

Support groups, organizations, friends, and colleagues helped the co-narrators overcome obstacles as they pursued their professional work and advancement. They gained strength and encouragement from such groups and individuals. Helen discussed her involvement with the National Organization for Women. This organization encouraged her to trust herself and her abilities:

> It caused me to question and re-think any sense that I couldn't do things. I learned to mistrust my own lack of trust in myself. And that did help me. Because when I'd find myself kind of going down the path of "Well gosh I don't know if I can do this." I would be able to pull back from that and say, "Well wait a minute now. You're a competent person and you should recognize that that's the culture working on you in the ways that it did during those times."

Helen added that her friends were a source of strength as she has encountered obstacles and difficult struggles: "... My friends are really important to me and have been a huge source of strength.... (A)nd [we] provide support for one another...."

Helen found her friends to be helpful in changing her behavior in certain situations. She provided an example of how she and a friend practiced changing their reaction to criticism from being an immediate response expressing empathy when criticized:

> (W)e both recognized that it was common for us to [respond], if someone offered criticism or a complaint, [with] the very first thing out of our mouths would be, "I'm sorry." Now I'm a big believer in saying I'm sorry when there's a need to say I'm sorry, but I think it can be overdone. And we used to practice together. ... to try to not have that be the first thing out of your mouth.

Helen gained strength and support from friends and colleagues that assisted with her career advancement.

Grace found support for overcoming obstacles by working with colleagues in creating a "buddy system." This encouraged a sharing of knowledge. Grace described her use of the "buddy system" for accomplishing tasks: "And, if there's something really, really crucial, I always had another Director, if I had to do a presentation, I always did pair with somebody. So if I wasn't there, that person could get up and do it. So, I

don't believe in just being the only one to have all the knowledge." Grace described the

"buddy system" in more detail:

> (W)henever I have to do a presentation, I always prepare at least one or two other
> people. So that in the event that I can't make it, that person is usually on standby
> and we really kind of work, we have a buddy system going on here, not only
> within this IT, but within the university, because you know there's other vice
> presidents that have issues as well so you always have someone that's prepared to
> step in at a moment's notice....

Grace discussed her perception of how males and females accepted the "buddy system:"

> I think on the female side ... it's viewed much more as a positive because we
> pretty much understand, especially if you have family. On the male side, the
> males that are sensitive to family issues or female issues or whatever, they
> understand it. But for the most part I think a lot of males think, well you know,
> "here I go again having to cover for Grace."

Grace discussed acquiring strength through informal networking with women

colleagues. By "partnering with people that were getting the information," the women

were enabled in overcoming obstacles related to isolationism and information being

withheld from them. Due to these obstacles, many times:

> they would make the wrong decision and so we [women] ... just kind of made
> sure that we were just going to try to get together even if it was just for coffee
> once a week, just to compare notes [about what] they should know about. (W)e
> made it a point to let people know.... And so you really had to really form those
> informal networks to really make sure that you were getting the right information
> so that you could make good decisions ... otherwise, you would be making
> [uninformed] decisions and everybody [would be] sitting up thinking, "Wow is
> she incompetent."

She also discussed her combined use of the "buddy system" and networking for

staying informed when her position placed her in a remote location:

> ... (A)t University (A) I was located across town. And everybody else was
> located on the (main) Campus.... So I was removed from a lot of things that was
> going on. And I saw that as a hindrance. So I really had to rely on the buddy

system and networking to know what was going on in the informal network and make a conscious effort to get on campus and be part of whatever was going on— the team meetings, whatever, lunches....

Strength from a "buddy system" and informal networking assisted Grace in her professional work and advancement.

Alice gained strength from support groups when she struggled with obstacles related to gaining recognition, support, and trust from others as well as overcoming stereotypic behaviors. Alice stated: "Certainly I look to others, friends and family and my boss, to help me...."

One method of overcoming situations or experiences perceived as obstacles was provided by the support the co-narrators found in family and other individuals. They gained confidence and trust in their abilities. Groups and individuals provided help and were sensitive to issues the co-narrators encountered in their professional advancement and work.

Perseverance: "Don't Give Up"

Alice and Grace reported perseverance as another method used for overcoming obstacles. Alice discussed her perseverance during difficult times: "I always go back to my Dad saying, 'You can do whatever you want to do if you put your mind to it.' I really go back to that and just say, 'Be myself, you're not perfect.'" Alice's perseverance led her to tackle many difficult situations as she worked with disgruntled, untrusting staff. She told them: "I would like you to give me a chance and let me prove to you, show you what I can do. And let's talk about this again at a later date after I've had some time to figure out this job and show you what I can do and work with you...."

Grace described her perseverance as being positive yet analytical when addressing issues or obstacles: "Well you know what, we are dealt lemons we make lemonade. That's what my Mom used to say." Grace stressed she tries to "always look for the positive.... It's so easy to get bogged down in the negatives.... Look at things at every angle.... Look at things from different perspectives, and if we're looking at them together from different perspectives then at the end of the day you will come up with the best or better solution." Grace stated her "positive" attitude helped her persevere and contributed to her "positive" CIO experience:

> ... (O)verall it's been a positive experience I think because of some of the way that I chose to handle certain situations. It could have been a negative situation in, you know, my judgment or my mentality could have very well been clouded with negativism if some of my friends that are in the same business that are female had gotten out and said no more. But I tend to take things in the positive stride and just continue to work on the positive end of it.... (B)ut certainly there have been negative situations.

Grace also persevered by using self motivation to overcome obstacles to career advancement. Grace maintained a positive, determined attitude during difficult times by telling herself: "'You can do this, there's always a solution, just keep looking, don't give up.' I mean I used to do those pep talks a lot. I don't do them as much as I used to. And 'don't give up, but look for a solution. Keep trying.... I can do this. You can do this, you can do it.'" Such "pep talks" assisted Grace throughout her career.

Perseverance assisted Alice and Grace with effectively overcoming obstacles related to difficult situations and disgruntled staff. Positive, thoughtful postures were successful in advancing the career paths of Alice and Grace.

Connect With Credibility

Alice and Grace discussed the importance of connecting with credibility as another method for overcoming obstacles. Alice stated she was motivated to building relationships by proving herself to her staff: "I'm going to prove to you that I can do this. And just working many, many hours to accomplish that."

Alice thoughtfully discussed the "constant challenge" of having to prove herself, as a woman, more than a man might have had to in the position:

> I think in general the IT business sort of brings that on. It was not typically a woman's world and I know we talked a little bit about this in some of my consortiums and groups. (I)t used to be very lopsided and it's become a little more even. And so I think it's always a constant challenge to prove yourself, convince others that you are capable of knowing about the business, in all areas of IT. You know, it's many different areas that you have to look at and consider....

Alice found that proving herself built credibility and overcame obstacles related to trust and confidence. Grace similarly found that being motivated to work hard at building credibility with others allowed her to overcome obstacles:

> (M)y experience has been [that in higher ed] you have to work harder at building credibility. I feel that people sit back and watch and see what you're going to do and how you're going to handle this and all that. But I would say that in higher ed I think I've had to work harder at building credibility.... (Y)ou're not taken for face value. (N)o matter how good your resume is people still want to see that this person can really deliver what they say they're all about.

Grace was surprised that in higher education her reputation in the work world did not precede her to the position: "(In) corporate America, people have already done a lot more research on you when you walk in the door and your reputation really proceeds you.... (I)f you've done great things and you're going to similar types of companies, most people have heard something about you." By proving herself and building

credibility in the higher education field, Grace raised others' awareness of her positive

reputation and abilities.

Alice emphasized that gaining experience and having confidence in herself

provided credibility which assisted with overcoming obstacles to career advancement:

> (C)ertainly the confidence grows as you tackle new things that you've never
> experienced before or had to do. And I think then that's reflective in those that
> you lead, they see that you are capable of making decisions, that you are capable
> of handing out or giving people more authority to do what they should do also,
> versus, trying to make all the decisions internally.

Based on her experiences, Alice offered the following words of advice to others,

stressing various methods of overcoming obstacles:

> Apply yourself, believe in yourself, and trust yourself. Don't let the stereotypical
> comments and pressures affect that. And if you believe in yourself and what you
> can do, you can get through that. You also need to have support. It's hard to do it
> just yourself. You need to talk with somebody and a support system, whoever
> that might be.

Connecting with credibility assisted Alice and Grace in their professional work

and career development. They achieved accomplishments and delivered results, gaining

the respect of colleagues.

Communication Strategies

Helen and Grace discussed observing and utilizing different communication

strategies to overcome obstacles related to stereotypic communication styles. Helen

observed a friend changing her communication style by lowering her voice as she sought

a Dean position. Helen stated: "I think she did it deliberately because she felt it [lower

pitched voice] made her look more powerful and more Deanly."

Grace similarly observed changes in a female staff member when she became a network supervisor:

> ... (T)hat person took on a more masculine role when they became the supervisor of a lot of males that were network engineers.... Well, the first thing I noticed is that they went and took some type of voice classes—they changed their voice ... to be lower and not [elevate at the end of a sentence]—women tend to elevate at the end of sentences. (T)hey took a lot of speaking type classes. (T)he person didn't seem to joke around like they used to. They took on a more serious [demeanor] and there was subtle changes but they were big changes.... (T)hen the person became very hard. (M)ore of what I call a black and white. (I)t's either you do or you don't and that was to me the most obvious [change], because that person used to always try to come in the middle of the road.... (A)nd then they become very decisive, either you do this or you don't....

Grace emphasized the importance of moving forward with tasks and projects. Grace discussed adapting her communication style and behavior from that of a soft-spoken person to that of being quite outspoken in order to move staff forward with tasks and projects:

> I tell people that as soft spoken as I am, I can be just as vigilant on the other side too. And that's usually a side that I try to keep from going to and that they really don't want to see. But some people have experienced it and they went fleeing saying, "Oh my goodness." And people would end up getting shocked but you know I can actually go there. I try not to go there because mine is of motivating people to do things that they normally would not do.... You know to move forward, so I don't really like to go there but if I have to I go there and it can probably feel like a whack over the head to people.

The utilization of certain communication strategies, such as changing one's style or the pitch of one's voice, assisted with overcoming obstacles related to support and recognition from others. Utilizing good communication strategies also assisted in overbuilding relationships.

In one position that Grace described as "one of the hardest jobs" with staff who were "huge complainers," she found changing the frequency of her communications and interactions with the staff helped her build positive relationships:

((E)verybody was so busy running their own empire so to speak, cause the departments within the [location], for the most part, are set up as silos [with] department heads or CEOs of their own areas.... I had to really come up with a way to be very, very proactive in working with the department heads,14 or 15 of them. (S)o what I decided to do is to go out and overbuild the relationship. Instead of just meeting, we met at least two or three times a week—the executive team.... I had to really make an effort to get out, drop by, drive across town, if I had to, drop in, say, "Hi." I found out what somebody liked from Starbucks and brought that or just sometimes, "Hey, you know you need to get away from the office. I have your favorite food. Let's just go on a picnic somewhere...." So I really had to work harder than I ever had in my entire career on building relationships.... (A)nd it wasn't because they were mean people or anything like that, it's just that they were so focused in their own area ... and I'm the inner area that has to cross all the areas.... (A)nd they're just focusing in one area and I think that's why other CIOs were not successful there. Because they didn't know [how] to really deal with it. So I really had to keep reminding them, "If you have an issue here, let me know. I'm here to help resolve problems...." I was out there mentoring them on how I wanted them to work with me.... (A)nd that was a switch.

Grace recognized the importance of good working relationships. By overbuilding relationships, Grace was able to be "proactive" in helping her staff realize she was there to "help resolve problems" and to "mentor them." Grace's interactions and connections with her staff assisted her in building a strong, supportive staff. This reduced obstacles related to stereotypic behavior; a lack of support, recognition, and trust; and marginalization. Grace was able to enhance her career path.

The use of various communication strategies assisted with overcoming or eliminating situations or experiences perceived as obstacles. Positive results occurred

with others' perceptions of women, the accomplishment of tasks, the building of

relationships, interactions, and connections.

Education, Experience, and Skills

In an earlier theme, the co-narrators addressed how their education and

experiences provided many opportunities. They also confirmed that it enabled them to

overcome many obstacles related to credibility, trust, and respect. Helen and Grace

emphasized that a good education and good experience and skills aided them in

overcoming obstacles. Good skills included communication, soft and hard skills, and

organizational management skills.

Helen stressed the importance of a good education, good communication skills,

and proper experience as methods of overcoming obstacles. She stated it is important:

"to work on your degrees, to work on your communication skills...." She stated it is

important to take: "some computer science classes cause [the] challenge [can] be the

really technical end of things...." Being a CIO: "requires some level of technical skill

that not everybody's interested in acquiring.... I think the future CIO is going to require

a good strong combination of soft and hard skills.... I'd encourage [people] to work on

both aspects—communication, people skills, but also learn the technical side."

While Grace discussed the importance of a technical background, she had found

friends with other backgrounds were just as successful in overcoming obstacles related to

technology leadership positions:

> I think it certainly helps to have a background, a strong background in technology
> for this particular role. (B)ecause it not only helps you with ... understanding the
> internal workings of how technology and IT organizations should work and each

person's job function.... It helps you connect with your staff. However, I believe that in this position that you don't necessarily have to have a technology background. I think this is a more strategic level position and there are a lot of people, a lot of my friends that came from marketing or public relations or legal and various other backgrounds that are quite successful leading IT organizations.

Helen and Grace overcame obstacles by getting a good education, building their skills, and enhancing their professional experiences. These methods assisted their professional work as higher education information technology CIOs.

Enlightenment

The co-narrators revealed eye-opening moments that provided them with methods for overcoming obstacles. This enlightenment assisted them in taking the lack of support and recognition less personally and "liberated" them. Helen described an eye-opening moment when she realized disengagement was an effective strategy to overcome obstacles related to a disgruntled and unsupportive faculty member. She described a colleague being upset and sending her ranting emails causing her personal anguish as she attempted to deal with the situation to no avail. She finally went to the Dean and said:

> "I just don't know what to do about this." And she said to me, "You know, I think my advice to you now is to just quit reading his email." And it just never, never even occurred to me, that I could do that! I always felt like I had to read everything and respond to every point and try to be rational and try to be reasonable and try to explain what my position is, and she finally said, "You know, you've done enough of that now. You can just let this go." And so I got to the point where, I'd get an email from him, I'd probably scan the first couple sentences and say oh yea, that's another rant and I'd just file it away.... And it was really liberating.

Helen's concerted efforts at being rational and providing thorough explanations for most decisions and actions created obstacles of others' unreasonable persistence. Disengagement proved to be an effective method of overcoming such obstacles. She

reported an eye-opening lesson-learned over the years regarding her self-imposed

obligatory nature of providing rational explanations was that ... "I'm not the center of the

universe and that everything that's wrong is not my fault." Disengagement allowed her

to forego explanatory obligations.

Alice similarly discussed an eye-opening moment where disengagement

"relieved" and "relaxed" her as she took obstacles related to a lack of support less

personally:

> (A)nd what I had to realize in all of that was that everybody's not going to like me. It used to bother me that somebody didn't like me.... (B)efore you're a manager or supervisor, I never [had] really experienced that. You worked with your colleagues and you go to the bar, you go to dinner, you do stuff with them and then when you become a manager, those dynamics change. You find out, you know, you hear things and it's like what did I do? Why don't you like me? And then the struggle of okay, how do I make everybody like me? How do I please everybody? And I finally realized I can't.... [I] quit trying....
>
> I think I felt relieved and not so much pressure [after she stopped trying to make everyone happy]. I remember taking some HR leadership courses and some of them were talking about the 80% of your employees are usually on the right path, 20% give you the trouble and you spend 80% of your time on the 20% of the people and not on the 80% who deserve more. And I reached that point and said you know, this isn't worth it, I'm going to do what I do best. Give everybody the opportunity and if they're not going to come along, I'm not going to spend my time trying to make them happy. I will listen to their problems, but then I'll be honest and say well, you know part of this is maybe you're just not really happy here. Maybe you need to look for something else.... And so I think that was a turning point for me and I just felt more relieved and more relaxed at my job....

Helen and Alice stated they were "liberated" and "relieved and more relaxed"

once they realized it was not their responsibility to make everyone happy, that everyone

was not going to like them, and "that everything that's wrong is not my fault." This

enlightening discovery helped them overcome obstacles related to gaining support and

trust from others.

Grace similarly discussed addressing disengagement behaviors with others who caused disruption and unrest creating obstacles related to stereotypic and marginalizing behaviors. She calmed this disruption by "having a conversation with" them "saying, 'You know I don't appreciate this. I really would like for you to stop.'" She also discussed disengaging herself from situations determined to be minor: "But then if they don't stop, it may not be worth the time and effort. And I really try to determine what is the significant issue that I really need to address, versus an issue that's irritating, but will probably die down."

Grace similarly described being enlightened at one point in her career about how to deal with men. She wished someone had given her advice much earlier on regarding:

> How to deal with guys.... (H)ow really to deal with men especially in the workplace. About ten years into my career, maybe half-way, maybe twelve years into my career, a male, and this is what I found very profound, a male talked to me about how to deal with men in the workplace.... (A)nd how the males, men think versus how women think. And he even gave me this book, *Games My Mother Never Taught Me*. It's out of print now, but that book, it's only about 200 pages but it is profound.... And, I wish I had gotten that book much, much earlier. In fact, I wish I had gotten that book when I was in middle school.... (I)t's an interesting book.... I think that even in my personal life, as well as my career, it has a lot of insight into things that you don't normally get. You have to learn it by trial and error and I think a lot of women learn by trial and error.

Grace was able to progress in her professional advancement due to the advice she received and the learning she had done "by trial and error."

The co-narrators expressly described enlightening discoveries made during their career development and advancement. These eye-opening discoveries revealed methods of overcoming obstacles related to disgruntled staff, disapproval and disruption.

Adapted Behavior

All co-narrators mentioned adapting their behavior as a method of overcoming obstacles related to a lack of support and recognition. Their capabilities and expertise went unrecognized in the areas of decision-making and leadership capabilities. The adaptations required to overcome these obstacles included "massaging egos," using an assertive style, and working "harder and longer." Grace also described adapting her behavior "to get her job done" and to take on other roles.

A lack of support and recognition led the co-narrators to utilize several adaptations to overcome obstacles. Helen described how "massaging egos" was a necessary adaptation to overcome obstacles of a lack of support for her decision-making capabilities. For example, she discussed a situation in which she silently disagreed with the Chancellor on actions to be taken in a security incident on campus. By first assuring she would yield to the Chancellor's decision, she was able to insert her own ideas and effect change. Helen stated to her Chancellor: "Well [Chancellor], if that's what you want me to do, I want you to know that's absolutely what I will do. I will do whatever you tell me, but before we do that I think I'd like you to think about this and this and this." Helen continued to describe the situation:

> And I just spilled out all my ideas. And then, I think the fact that I led with saying I was going to do what [the Chancellor] told me to do, was the key.... And so I felt bad and good about that. I felt bad in the sense that I had to sort of buy-in to massaging [the Chancellor's] ego in order to get what I wanted, but yet I felt good because it succeeded.

Grace heatedly described a similar situation in which adapting an assertive style was advantageous. She sought support from her boss regarding a situation between

herself and another director, who her boss "was really afraid of," due to this person's

"clout and influence:"

> He tried to beat me over the head and make me do something that I knew was just
> not the right thing to do. And so he told me "well if you don't do it, she can go to
> the President." I said, "I can go to the President too." And then I told him, "Well
> if you really want me to do this and if you really, really think that this is what we
> should do I just need something in writing from you...." You know, I never did
> get anything in writing.

Grace's adaptation of an assertive style gained support from her boss and a solution to

her problem.

Alice similarly discussed adaptations she used in overcoming a lack of support

and recognition by others. While Alice spoke of being herself and her attempts to not

change who she was, she found herself adapting her behavior by working "harder and

longer" to prove that she was a capable and competent leader. She emphasized:

> My philosophy was I'm going to be me. And do what I always do, think and act
> and react and communicate with people because it's worked in the past. I've been
> successful and I didn't feel like I was treating anybody wrong or indifferent. And
> I just figured once you get to know me if that's not who you want to work for then
> that's your choice. Or if you don't like the job, let me know. So it's just a matter
> of doing what I've always done instead of changing. I certainly had conversations
> with family, with my husband, talking about the struggles and should I do
> something different. And the support was "you need to be who you are. Cause
> that's how you've succeeded so far and why would you change that, just because
> someone doesn't think you can do it or you know you shouldn't have to overstep
> your bounds to prove something." Obviously internally, I think I worked harder,
> longer, trying to get to that point sooner. But that's just me.

Grace described adapting her behavior, in general, to various others around her so

she "could get her job done. Mostly I adapted my behavior to probably their behavior, if

there wasn't anything outlandish or unethical.... Just so that I could build a team or

partner with them to the extent that I could get my job done and I could still service

them." Grace described another situation where she had to adapt her behavior and take

on the role of a "first line manager" in order to mentor her staff:

> I had to really, really adapt my style because I was at the CIO VP.... I found
> myself in a position where I was doing first line supervision ... to people that
> were directors and assistant directors and they had been promoted up because they
> were talented on the technical side, [but] had no management. So I really had to
> adapt and really begin to see things like a first line manager, somebody new in
> that position, to help mentor and coach them and that led to an incredible amount
> of work.

These adaptations assisted Grace in effectively performing duties and tasks required of

her and in mentoring her staff in order for them to effectively perform their duties and

tasks.

Grace also observed role changes in a male staff member to overcome obstacles.

She described an executive administrative assistant: "And he was really, really great.

And I noticed that he took on more feminine type roles. Because everybody else that he

worked with, his co-workers, his peers, were female.... (A)nd he became very sensitive.

(T)o the point that he would speak out against what he considered injustice and

(in)equity."

The co-narrators found necessary adaptations to move forward were "massaging

an ego," using assertive styles, or working "harder and longer" to prove oneself. Other

adaptations included those needed "to get my job done" and taking on other roles to

mentor one's staff or to fit-in. These adaptations allowed the co-narrators to continue

with their professional work and advancement.

<u>Alignment</u>

As noted earlier, the co-narrators discussed the importance of good leadership

skills in providing opportunities. Helen and Alice found obstacles could be overcome by

aligning decisions and actions to certain principles and values. Sound, "principle-based"

decision-making and value alignment provided consistency and clarity for Helen and

Alice. Grace found obstacles could be overcome by "looking at all the factors—business

and personal" before making decisions and determining solutions.

Helen described her use of principle-based decision-making strategies:

> When I first [became] IT director, the Vice Chancellor who was my mentor talked
> to me a lot about trying to look for common patterns and principles on which to
> base my decisions. And I think that the more I'm in this job and the ... more
> experience I have, [the] more I've seen more patterns similar, more similarities....
> I remember that I did something like that before, and here's how I handled it. So
> I have kind of a wealth of experiences to look back on and the fact that I've tried
> to make my decisions be principle-based means that I can more quickly match the
> current situation to past examples to the principles that I use to make decisions.

Using principle-based decision-making provided Helen with confidence in her decisions.

It also meant more timely decisions could be made since others did not need to be

consulted as often before making a decision:

> I still think that I'm pretty consultative, but ... I'm more likely to accept that I
> probably have a pretty good solution and less need to go out and ask everyone in
> the world what their opinion is about this particular issue. I don't want to say that
> I'm unwilling to listen, especially if I make a decision and somebody strongly
> disagrees with it. I'm willing to listen to them.... And I'm willing to be
> corrected. But I'm probably less likely to just look for tons and tons of input from
> people.

Alice discussed her decision-making process. She based decisions on what was best for the university and the students and faculty. This helped her overcome obstacles of a lack of credibility:

> I'm going to do what's right for the university, cause that's who I work for, that's who I'm loyal to, and that's what I believe in. So my decisions are based on making the university a better place for students and faculty. That's why we're here. And how do we do that? So I guess I stuck to that and accepted the fact that everybody won't like me.

Grace passionately discussed women making better decisions than men by considering "all the factors" related to "people coming into the work environment as persons:"

> ... I'll just use an example of an issue. It could be whatever issue comes out. If you have a group of women together talking about an issue, they're going to look at all of the factors—the business side and also maybe the personal side and I think come up with a better solution. Whereas, the males will tend to look at just the business side. Forget the personal—that's not business—forget that. I think that there's a huge disconnect because when you talk about an issue—let's say it's a personnel related issue—people come into the work environment as a person. That means that whatever was going on at home or in their personal life ... comes with them. And a lot of times, when you're dealing with those particular issues, you do have to take into account or you should at least consider, if you know what's going on, and why they're doing certain things. I guess ... most males lack that nurturing characteristic. And I think that's why I really feel that women come up with better decisions than males. Now that could be a bias within itself, but I just feel that way.

Sound, "principle-based" decision-making assisted Helen and Alice in overcoming obstacles to their professional work and advancement. It provided them with confidence and consistency in their leadership roles and their professional advancement and work. Grace elaborated on the importance of considering the whole person that

comes into the workplace when making decisions. Awareness of the "business side and personal side" of the person enabled women to "make better decisions than males."

Selling Talents and Expertise

Helen discussed exploring a different position in order to overcome obstacles in her current position. While she didn't take the new position, her actions of seeking a new position elsewhere positively changed her relationship with her current boss: "... I was unhappy and I thought I should look around.... And I didn't expect it to turn out the way it did, that it would change my relationship with my boss, but that in fact is what happened. And you know I'm great with it now!..."

Grace discussed the importance of having self confidence in selling one's talents and expertise. She found she needed to be "really good at selling my talents and what I can do." She described CIO open positions today as:

> Highly competitive, very, very good, a lot more [candidates] to choose from, as far as qualifying people, so I think they're very competitive. Of course, I think politics has a role in it as well. I think some positions are very political and it's really who you know. But you still have to be able to go through the search committee and go through what I call the vetting process.

Selling one's talents and expertise assisted Helen and Grace in overcoming obstacles related to a lack of support and recognition. This was important since CIOs need to be perceived by others as well qualified and competitive.

Minimizing Obstacles: "A Lot Has Been Learned"

All of the co-narrators mentioned not only methods they used in overcoming obstacles but also methods they used to minimize obstacles for others. Grace described

how she tried to minimize obstacles for herself when taking a new position. She stated

she talked with her new supervisor about needing flexibility due to family needs:

> (T)hat's a discussion I have with the person I'm gonna report to saying, "I need to know right away and need to have this discussion up front—there will be times, because I have four kids, that I'm gonna need some flexibility and I will call you. I will make every effort not to miss or meet deadlines, or anything that's really crucial. I can't guarantee but I'll make every effort...."

Grace prepared her supervisor to have expectations that included flexibility in order to

minimize anticipated situations that could create obstacles.

Minimizing obstacles for others allowed the co-narrators to assist with providing

successful opportunities for their staff and aided in building a strong staff underneath

them. Supporting professional development and training is one method of eliminating

obstacles for others. Grace discussed professional development specifically for her

women staff: "One of the things that I've done, and there have been several, and that is

an opportunity to attend some conferences that are specifically geared toward women...."

Grace listed several organizations she currently belonged to or was a member of in the

past. She stated that she "encouraged females to attend" or join such organizations.

Grace added: "There have been times when I've brought speakers on campus to talk

specifically to the women in IT about careers." In addition, she had "implemented career

development paths for [her] employees." Grace made many efforts to minimize obstacles

for her staff.

Obtaining certification in specific technical fields can minimize obstacles. Helen

discussed providing more training for her staff in the form of certification training:

(C)omputer science is much more focused on programming, system administration, it's much more focused on following a set of instructions, either set up or patch an operating system and... We haven't been big on that [certifications] in our department and we do send people out for training [and] out to conferences. Maybe we should do more with certifications. There's a certain sense among some of my managers in the technical areas that certifications are more expensive than what they're worth.

While training and professional development is important for staff, having

mentors can aid staff as well, just as mentors aided the co-narrators. As noted previously,

Grace's mentors assisted in providing opportunities for her career advancement. Grace

also served as a mentor to others to help them overcome obstacles related to career

advancement and involvement with technical fields:

> I believe in talking one-on-one, not only with females but I have talked a lot with females and what are you planning to do career-wise. I have those conversations.... And when they come up with something that you think you can really help with, then really try to help them. So I have helped females get out of the administrative clerical role to more technical jobs and things like that.... I've mentored or been a part of mentoring young thirteen year old girls on creating websites and things like that outside of work.... And a lot of community type things that I try to do to really help women realize that there's more out there than just clerical type work and sometimes you do have to fight and be persistent at least to get to where you want to be.

Grace stated she "really tried to help" her staff through mentoring. Alice

described a major struggle she had and stated she hoped to help those with similar

struggles as she mentored others:

> The hard part [is] learning that you can't please everyone and that it's okay for someone not to like you. I don't know how you get to that point or how you advise someone. I wish someone could have helped me through that, cause that was a big struggle for me. I was always the type I took it very personally if somebody didn't like me. (W)hat did I do wrong? What did I do to hurt them? I gotta make this right.... Well I always felt that way going through high school. (Y)ou wanted to be liked you wanted to be everybody's friend. And then in the working world, and it went on until probably a good year or two into my first

> supervisory role, in realizing this just isn't worth it. No matter how you struggle, you're always going to make someone unhappy because everyone doesn't agree on what's right or how to move forward.... It was early on in a manager role or supervisory role [when she got over this] but I guess it would have been nice to get help through that instead of the struggles I went through. And you think is this really worth it? I'm just going to quit. I'm going to get out of here. I'm going to move. I'm gonna, this isn't worth it ... and how do you get past that? And I would hope that I could pass that on to others, as I mentor other people.

Alice gained knowledge and skills from her experiences and planned to use those to mentor others.

Grace also talked about her future plans in her current position for increasing salaries for staff with soft skills or less technical skills. Soft skills typically are not as valued as hard or technical skills creating obstacles related to less salary and respect. Grace, however, finds soft skills to be as valuable as hard skills and wants to minimize such obstacles for others: "That's something that I'm planning to do [as I did] at [University A] as well. Actually I had a grievance filed by a male, which I find very interesting, saying that that was just another way to discriminate against men because women are better with their softer skills side than men are."

Minimizing obstacles for staff assisted in providing them a variety of opportunities. During this process, the co-narrators built strong staffs. Building a strong, competent staff is important and also occurs through the hiring process. Alice reported some advice she had received regarding having as strong a staff as possible:

> (O)ne of my prior supervisors had always said, "Don't be afraid to hire someone smarter than you...." Because in the long run they're going to make you look good. Not that that should be your motivation, but realizing that you don't have the capacity to know everything and you shouldn't try to do that, well you can't possibly. So if you hire people that know what they're talking about and they may know more than you do, that's okay. He said the leaders that don't hire

someone because they're afraid they're going to show them up, are the worst leaders.... They're afraid that maybe they're going to take their job or something whereas if you're a good leader you're going to use their strengths to help you in the long run and help the institution....

Grace explained how she tried to minimize obstacles for herself by having a frank discussion with her supervisor when accepting a new position. Minimizing obstacles for others involved the support of professional development and training opportunities. It also involved supporting staff's involvement with networking and membership in professional organizations. Mentoring staff helped minimize obstacles. The co-narrators also minimized obstacles for themselves by building strong, competent staffs who "know more than you do."

Neutralization. Alice and Grace discussed the minimizing of obstacles in the future. Both stressed a "neutrality" that is needed before women face fewer obstacles. Alice stated: "I don't think the perception of technical and male has gone away. Meaning, I think that's why we don't see as many females going into computer science, because [of] that perception and expectation for some reason. We have not been able to dissolve that, make it more neutral."

Alice elaborated on changes she had seen over the years: "Boy, you know it's changed over the years.... (F)irst, coming in I think the perception was there are roles [for women] but not as technical. And now I think because of the women that are in those [technical] positions, that's coming around and it's not as strong a message as it used to be."

Grace similarly discussed "a neutralization going on" where information

technology roles may eventually be equally held by women and men:

> I think society and businesses will be used to women being in those positions
> because we are the pioneers and we've been there before.... So I think there's a
> neutralization going on here—its kind of gender neutral now whereas before it
> was traditionally male. So I think that's going to help as well. Now that's
> probably 15 to 20 years out, which I think is a shame.... (B)ecause it's a process
> and the young people ... will be moving into those positions and so I think it's
> going to get a lot better....
>
>   I think that women are still relatively new in the workplace compared to
> men. And I think that a lot has been learned about the integration of women into
> the workplace. And that I think eventually things are going to get better.... And I
> think it's not going to be an issue where you have these gender type problems
> with people in technology because they're kind of blending together. I think
> everybody will be recognized for their strengths that they bring to the table.

Grace attributed her perception of this change to the encouragement schools are giving to

young people: "(A)nd so [the schools are] encouraging young people to do whatever it is

that they think they want to do. And I think that whole philosophy and change is coming

through a process that's really going to change how we work together going forward."

As "pioneers," the co-narrators clearly discussed the importance of minimizing

obstacles for others. Emphasizing the continued prevalence of "the perception of

technical and male," Alice and Grace discussed a "neutralization" assisting with

minimizing obstacles for women in technical fields. Stressing the need for and potential

of a more gender neutral workplace in the future, importance was placed on people

"being recognized for their strengths."

The co-narrators found obstacles could be overcome or minimized by accepting

the guidance of friends and colleagues during difficult times. By persevering and

connecting with credibility, the co-narrators found various communication strategies and

behavior adaptations assisted with achieving their professional work and advancement. The co-narrators utilized their education, experiences, and skills to overcome obstacles as they had eye-opening realizations. Aligning their decision-making with principles, values, and considerations for the "person," were effective methods for gaining support and trust from others. Selling their talents and expertise brought recognition from others. The co-narrators found effective methods for minimizing obstacles for themselves or others as they furthered their professional work and development. Obstacles were often created as a result of the genderedness of organizations and the jurisdiction that occurred related to the occupations within information technology.

<div align="center">Genderedness and Occupational Jurisdiction</div>

The co-narrators discussed experiences and observations related to the genderedness of higher education information technology organizations, including elements of occupational jurisdiction. The co-narrators experienced mixed success with attempts to integrate women into male-dominated information technology positions. While care was taken to recruit "strong women," retaining them proved challenging. Helen cautioned that such attempts' success may be dependent on skills: "I can think of lots of examples where you know a man has been better than a woman and a woman has been better than a man, but I can almost always point to skills [and] interests as the reason rather than the gender of the person."

Divisions in information technology organizations by positions considered more technical or less technical were gender-based. Helen stated: "IT started as a pretty male dominated organization." The co-narrators confirmed that technical positions in an

organization are generally male dominated leading to genderedness of divisions. Females were often unwelcome or needed to exert great effort to fit within the male environment.

The co-narrators discussed the perpetuation of gendered organizations. One method of perpetuation was the lack of access to or interest in technical training by women staff. Grace emphasized her experience in "environments where only certain people got to go to training all the time, usually males." Another method was due to fewer women pursuing computer science and other technical disciplines, and, a final method was a lack of "gender friendly" cultures. The co-narrators' experiences and observations provided insight into the genderedness of higher education information technology organizations.

The IT Integration Process

The co-narrators discussed the integration of women into traditionally masculine roles or male-occupied positions. Some attempts were successful while others were not. Those successful depended upon whether "the women have been able to do what the guys do," if they were "well suited to the role," if they could "prove themselves and develop respect," and if the "male manager was more open-minded, flexible, and embraced diversity." Successful integration also required social integration as they "hung around for happy hour." Once integrated, the women became "one of those go-to people."

Attempting to reduce genderedness, Alice clearly explained how she tried to encourage talented women into the more technical roles:

> We looked at their skill set and they were like on-board. They could do some of those technical things. And we could see that we could use them better in this other area instead of just supporting help desk calls and running out to an office or

keeping a lab running. And so they were approached. They certainly were not forced. We had the conversation. We said, "we think there are some opportunities here, you would be sent to training, you would have other opportunities" and they accepted that.... So it was never a "you have to do this...." We certainly encouraged them and said, "we think you have the potential and we'd like to try it." And we've always gone into those as you know if it doesn't work we'll figure something else out....

Alice discussed how the integration of women in her organization was "difficult" and a "little tough" at first:

> ... (T)he comments from the male counterparts has always been positive because the women have been able to succeed and do what the guys do. They've been accepted, but at first it was a little tough. There was one actually that wasn't accepted. She no longer works here. That was our first attempt at putting someone in that group. It just didn't work out, but I think it was her personality too. She took things way too personally, and ... it wasn't going to work because she had it in her head it wasn't going to work either....
> We transitioned a couple of them from [the] support area to [networking] thinking they would be better served themselves for growth and for the university cause they had the capability. And it has worked out well. But, boy, putting them in there to begin with, into an all male environment was difficult....

Alice characterized the women chosen to be integrated into male dominated roles as "strong women:"

> They had the technical capabilities to begin with, that's why we thought they'd be good there. And they have the personalities where they weren't going to be intimidated. They were strong women. And believed that they could do the job.... So I don't think we could have just put any woman in there and have them succeed. It was really thought about a lot and discussed.

Women successfully integrated into these positions had to earn respect:

> ... (A)ctually they have told me, "this has been great moving over here. I really enjoy it. I think there's just different opportunities for me here...." (A)nd now they're part of the group. (T)hey may or may not go to lunch with the guys, but they're accepted if they go now. But again they had to sort of prove themselves too and develop the respect.

Alice described how transitioning them into the traditional male roles was difficult because of the "gentleman clique" that formed:

> There was certainly a gentleman clique that was hard to break.... The males, not management, but the male workers were not very acceptant of it. (T)hey had their little cliques and their little lunch groups and they weren't inviting the women coming in.... (I)t was just all sort of not verbal but just your actions or lack of action in some cases.... (A)nd I to this day think part of that exists. The women still hang out with other women most of the time. You know, not all the time. (B)ut the males tend to congregate on the lunch hours and go somewhere and once in a while a woman may go, but not very often.

Alice stated that in the past: "five, six, seven years ago ... it was tougher for women to get into the hardware side of things." Then, "it was perceived" as "the boys club" and "a woman wouldn't understand the inner workings of a server, or wiring infrastructure." She discussed women being informally assessed then according to male standards. Alice described the situation today: "I certainly don't see that today cause we have women in those positions.... So it's definitely in the past and the hurdle is really getting past the boy's club and getting women who were assertive enough to prove they could do it...."

Alice's descriptions of the integration efforts in her organization were similar to Helen's examples of integration efforts. She discussed how her efforts to integrate women into male dominated positions often backfired:

> ... (W)e hired two women into network during the time I've been in, and at least one of them I had to press pretty hard for her. I would say that there was more or less an affirmative action there. Although, every time I've tried to do that it's come back to bite me..... I want to give women the opportunity and if we're sitting on the fence at all, I'm kind of in a push to hire a woman. But in both cases where I've done that, I would say that we ended up with people who were quite weak and not well suited to the role.... And that would be true of one of our women systems administrators right now.

The responses to integration by the women in Helen's organization were often very distinct. Helen described one woman staff member in a traditionally male role who "really resented having to crawl under desks and pull wires." The woman "looked for opportunities to move and we did fairly soon move her out of that into something else—programming that was maybe more traditionally done by women. I don't think we felt she was doing poorly.... Another opportunity opened up and she jumped at the chance to move." Helen also described another woman who was a telecom administrator. Crawling into and under spaces did not bother her as Helen stated:

> she ... doesn't think anything of it.... She's been very willing to do that kind of work....
>
> She would like to move up in the organization, but I think right now an obvious career path for her would be to get more involved in construction projects and planning, building wiring and work, reading blueprints, and things like that. And she doesn't seem to have much interest in that.... And she has no programming background so there isn't a clear path into the other parts of our organization.

Helen stated another woman, in a traditionally male role, has moved into an "IT manager" role. Helen revealed a conversation she had with this woman about her past role: "... (S)he said that she really liked doing that job. She thought it gave her some real insights into how the whole operation worked and she enjoyed it. But that she eventually had other things that she wanted to do. And she's a bright woman and as a manager now, you can see that she rose through the ranks." Helen stated that: "phone/net installation work ... is traditionally not done by the people with the most ability to rise in the ranks. So it's not surprising to me that she would move on to bigger and better things." She observed a pattern of women in traditional male positions moving out of

those roles after awhile: "(A)nd frequently what I see happening is that you can get somebody to take a job that's more stereotypically male, but they often are looking for opportunity to move out [of it] … after awhile." Helen had mixed success in integrating women into traditional male roles and positions.

Grace similarly experienced mixed success with reducing genderedness as she integrated women into roles and positions dominated by males. Grace described, in one of her previous positions, hiring a woman into the network group who: "had a hard time in that group because that's a traditional male group…." She explained how she:

> had a hard time getting her hired in this group, not through the company's human resources, but due to the selection panel being all men. And they wanted to favor men. And we're doing this big diversity push, and she met the criteria although she wasn't as strong an applicant as some of the male applicants. But she did meet the minimum and we were doing a big diversity push to integrate more women into every area…. So I was able to get her in.

Getting her hired became the easy part as Grace then struggled with getting her accepted and retaining her:

> But what I didn't understand, after she got in, was what it was going to take to really get her integrated into this traditional male department. And I ended up spending a lot of time with that particular male manager…. Following-up, you know, just briefly on how she was doing. And I heard, and in even talking with her, at first she wasn't allowed to go to training. They were giving her all the administrative tasks like technical writing and stuff like that…. Traditional things that male counterparts normally give to females—I would say menial work to do, I would say meaningless work to do. So I kind of got in there and basically had to mentor that particular male manager in order to help develop this young lady….

Grace explained: "In the end she did get very frustrated. She got another job somewhere else."

Grace provided another example of an integration and retention attempt that did work well. That situation worked out: "well because that particular male manager was more open-minded, more flexible, and, you know, really embracing of diversity.... He really became her mentor, protector, so to speak...." She added that she had also successfully integrated women into "management roles too."

Grace noted that issues related to integration were not necessarily due to how one was assessed, but rather related more to "day-to-day life and work. I did notice that the males would get together and go to lunch and the females would, you know, have to find someone else to lunch with. I noticed that in the early days.... (I)t was definitely, if you're a female, you don't really belong over here with us." Grace described a "blending" that had occurred more recently "where, you know, the males and females get together and go to lunch and become friends and all of this. So I have really seen a change."

The difficulties of the recruitment and retention of women into traditionally male dominated roles often caused frustration. To assist in integration, the co-narrators offered opportunities to women staff members interested in pursuing traditional male work roles and positions. Their recruiting and retaining attempts at reducing the divisions by gender within their organizations sometimes backfired. While they had mixed success with the integration efforts, the co-narrators wanted to "give women the opportunity" and reduce the genderedness of the information technology field.

Technical—Less-Technical Positions

Genderedness in information technology organizations was clearly and consistently described by the co-narrators. The co-narrators discussed the domination of technical fields by males. This dominance intimidated females, creating gendered divisions in their organization. Their experiences suggested that genderedness in organizations would continue "until women feel more comfortable" in technical roles traditionally dominated by males.

Although not described as characterizing genderedness, Helen discussed how the leadership in information technology has traditionally been dominated by males. She stated:

> ... (A)nd I was the first woman IT director, and my managers were all men. And we certainly had women on the staff, but we probably have more women on the staff now than we did. And a [woman] manager now....
>
> I think IT started as a pretty male dominated organization. I think, it's still the case that sometimes when I go to meetings of IT folks, the men will tend to be *more* knowledgeable about technical details, whereas the women will probably tend to be more like me in saying, I can find that out by checking with my staff, but I don't have that detail in my head....

Helen described her perception of males' interest in technology:

> I think a lot of men went into computing in IT because they loved computers and they spent all their spare time figuring out the details of every little thing about processors. And, they're the people that could tell you all the —what's the processor speed, what's the this and what's the that, and I never cared anything about any of that.... I think that in the early days of IT that [knowing all the technical details] was valued. I don't see it being as valued now-a-days as it used to be.

Grace frankly discussed the big divide she observed between those occupying technical and less technical fields in information technology:

Usually in IT the person that's over your infrastructure in network--usually those are male dominated positions.... (T)hat's an area that a lot of women don't like to get into and even when I was a young girl, technology didn't fascinate me at all. It was "ugh those are gadgets" and that's what a lot of young girls think of it as— gadgets and fiddling around with stuff. Guys like that kind of stuff. Girls, women that get into technology, they get into the thinking part of it, the analytical part of it. They very rarely get into the point where you've got to put a computer together.... Or you've got to go out and touch it or use a tool or something. To me, that's going to be a male dominated area until women feel more comfortable and you get more women to that area.... The area of computer security—I think that scares women as well. (A)nd that's a spin-off from the network group. I mean they're the ones that said we need more security. Although you're not necessarily applying or configuring the equipment, you still need to know how to do it.... (W)omen flock to the help desk area, the programming area and projects.... (T)hose are three main areas that you will see more women coming up in. I came up through the programming area myself, although I did get an opportunity to go into the networking side....

Grace reported fewer women in technical and senior level positions in her

organization:

(W)e have one person [woman] that got promoted to an assistant director, which reports to another director. (M)ost of them [women staff] are like entry-level programmers. We do have one programmer that is a senior level programmer but she's classified as a mid-level programmer.... So we don't have any senior level classified women.... My help desk is primarily staffed by students....

Alice stated that when she began working in her current organization "there was

quite a diverse group ... as far as population of men versus women. It's not like they had

very few women to men, it was probably pretty close to 50/50 then." The positions and

roles filled by staff indicated a self-selection process where females acquired the software

support roles and males the hardware support roles. She frankly discussed the current

number of females in less technical roles in her organization:

[In programming] ... probably 50/50 if not more [are] females. And then in the support area, it's probably pretty close to 50/50/ too.... Actually two males run the help desk.... (T)here's sort of an extension beyond that, that it's really like

the trainers—they work one-on-one with faculty. Those are mostly female. And the people that answer the phone happen to be male and know the ins and outs of a computer to answer help desk questions. (B)ut if it gets into how do you mail merge in Word, they send them to the female counterpart that knows the application.... I look at that as a group of help desk people or support people that are about 50/50. (T)heir specialties differ...

Alice described the technical roles in her organization:

Typically your telecommunications, your networking, are typically filled by male(s). And programming has sort of always been a little bit more of a mix than the other areas....

We have certainly fewer females on the network engineer team than we have in the help desk area or programming. That's certainly an area that's very lopsided....

But in the network group where you're truly setting up servers, working on operating systems, working on cabling, designing infrastructure, it's predominately male here. There's a few women and getting those women at first in there was a little difficult.

Alice shared her perception of males' interest in technology: "I think the men tend to be more what I'll call techies or geeks or they like to curl out the acronyms and ... I think women just, in general, are less threatening in their area. They don't necessarily have to talk that way."

Helen similarly discussed the number of males and females in technical roles in her organization:

I have more male systems administrators and more, at least in my unit, more women help desk people. Desktop support is more technical than help desk but less technical than network administrators and systems administrators.... (W)e do have a woman in, two women in systems administration, we have one woman in desktop and three men....

I have four managers: three men, one woman. A woman is the newest manager. So for many years I was the [CIO], a woman, and three male managers under me and then the rest of the staff. I'm glad we have a woman manager. I feel that's more equitable.

Occupational authenticity and legitimacy refers to one's work and occupational role being real, genuine, and needed. Helen reported that the technical positions tend to have more occupational authenticity and legitimacy: "I still think there's probably more men than women in this field and I think especially on the hard end [technical] which also tends to be the end that gets the most respect...."

The co-narrators confirmed that men were more prevalent in technical positions and women more prevalent in less technical positions creating genderedness. Males were described as being in "more respected" positions and "knowing the ins and outs of a computer," "liking that kind of stuff," and "curling out the acronyms." Females were described as "having less detail in their heads," being more "analytical," and "less threatening." Due to technical positions being more often occupied by males, males tended to have greater occupational jurisdiction and authority. All co-narrators acknowledged an increase in women into the technical positions would not occur until women were more accepted and had more interest in technical fields.

The acceptance of women by others into traditionally male-dominated technical positions was a key element determining whether women were successful in technical positions. Alice discussed the change over time she observed in information technology culture and gender patterns:

> I have to believe some of it's just accepting women in the workforce more, no matter what area you're in. It's just more common than it used to be. So I think it's just generally more accepted across the board--IT or some other profession. Within IT, there's still more of the technical roles although they're slowly being filled by women.... So I think that's going to be a road that takes time versus you know programmers or trainers that teach IT. I think you see more women and that's more common than in the technical networking areas.... (H)ardware versus

software, I think there's still more males [who] tend to go to the hardware side and more females to the software side.

Grace also discussed how knowledge and expertise, coupled with social interaction, contributed to the successful integration of women into traditionally male dominated roles and positions. She wittingly described this as "women getting in good with the males:"

A lot of times it's by mostly the knowledge. It's the expertise and the knowledge that that female possesses about a certain subject matter. That's one way. And another one is always hanging around for happy hour, that type of stuff too, and sometimes the socializing is pretty big too. But I think what I've seen, I would say at least in the past five years, is that females get in and fare much better with their male counterparts from a knowledge and expertise standpoint, if they can be one of those go-to people or whatever.

The co-narrators expressed mixed results with efforts to integrate women into traditionally male dominated roles and more technical positions. Success was dependent on "accepting women in the workforce more." It was also dependent on establishing jurisdiction through the demonstration of knowledge and expertise held by the women pursuing non-traditional roles and positions, as well as a willingness to socially interact with male counterparts or colleagues.

The mixed results were often due to informal boundaries generated in the workplace. Helen stated: "I think people quite naturally tend to hang-out with people they know the best and the people they know the best are often the people they [work with] most closely.... (T)here are a lot of different personalities that work here and different personality types often tend to gravitate to certain types of jobs." Alice also described groups forming creating boundaries:

> Within each unit itself there are what I'll call cliques, you know, just based on commonalities or the job you do.... (I)t's sort of like you have boundaries, not to say somebody can't go to lunch with somebody in a different unit, but I don't think it happens as often and I don't think others are invited.... I think most of it is just the job you do, the responsibility of who you have to work with, and then the commonality of the rest of the IT unit is either your customer or you are servicing them.

Grace similarly observed her staff operating within boundaries created by their

roles and positions within the organization:

> And what I find is that the help desk people will stick together and have their little lunch buddies, and the network people stick together, and the application people stick together. Now that's in this organization. I've found that in some other organizations, too. But in my previous organization, ... before I came here, while there was strong interaction within the group, there was also strong social interaction outside of the boundaries, which really helped when it came to projects and getting things done from a team perspective....

The co-narrators observed staff forming groups and establishing informal

boundaries based on their work and the common interests generated by their

responsibilities. Occupational boundaries and jurisdiction were informally established

often representing a genderedness of higher education information technology roles and

positions.

Achieving more technical knowledge and expertise was important for those

wanting to cross over from the less technical to the technical side. Using new

technologies and "playing with toys" or hardware provided new technical knowledge.

Alice described a woman staff member who used new technologies and "toys" to

establish her occupational technical expertise: "I think she does use that as a power play,

and 'Hey I know about these things cause I'm playing with them and I know more than

you do.' But I think it's because her personality is that she feels she needs to prove

herself in this role...."

While Alice described this person as having the needed technical skills and

capability, she discussed the person's need, in several aspects of her life, to establish

authenticity and legitimize her authority:

> I think it's lack of self-confidence and trying to appear knowledgeable no matter
> what the conversation is. "(Y)ea I've done that" or "I've done a form of that."
> (M)aybe trying to feel accepted. It's not that the person doesn't have the skills
> and the capability. I think it's just their own lack of self confidence.... (B)ut
> again I think this, the whole thing is just trying to prove, I can do this.... (S)he
> always has to be doing something, whether that's pursuing another degree,
> learning some software, joining some organization, doing something, it's just
> constant I have to be doing something or I'm not succeeding.... (T)here's some
> staff that it's like if they're not busy they perceive that they're not moving
> forward. When in fact they're just over busy and I think creating more problems
> for themselves instead of taking some time to relax.... But it's hard to tell
> someone that because the people who are in that pattern who do that, they don't
> think they're doing it. You know, that's just me. I don't need vacation, I don't
> need to sit back and not take a course this semester. I need to do this.... Their
> life is not balanced very well.

Alice also discussed other staff having access to and researching new

technologies:

> We have a group of individuals, and they're spread across the different units, that
> like to do research and like to play with toys. And we provide them with a lot of
> that opportunity just to see if this is something we would want to get into or
> support at a larger scale.... Not many people actually want to take on that role.
> We really don't have [a] research group. We don't have time. We're not staffed
> that way. You do it on your own. You take the initiative and say I want to try
> this out.

Alice pointed out that access is often dependent on a person's role in the organization: "I

don't see access being any different as long as their roles are the same, meaning their

responsibilities. Women aren't treated any differently than a male would be." She

discussed that "anyone in the network administrative side" in which "there are fewer women," generally has more access to certain technologies. She also stated that the technical staff perceives themselves as having more power than the less technical staff and are also perceived by others as having more power "because they have some of the keys no one else has.... They hold some people captive as to what they can and can't do."

Grace expressed similar perceptions by others regarding her "infrastructure and the network group" and "security" staff:

> It seems that network and the systems people, they're just perceived as having more power and more authority. The other group is anybody that's in computer security.... Well because security, I think people are used to a sense of security. We're really conditioned to that as part of our culture. Security has power. They override decisions and the network systems group can override things and they can make your life either really, really, nice or really, really, difficult....

Alice and Grace clearly described the technical staff as having occupational jurisdiction as they perceived themselves and others perceived them as having more power, "holding the keys" to technical use and access, having the capabilities to "hold people captive as to what they can and can't do," and having the power to "make your life either really nice or really difficult."

Gaining occupational jurisdiction and having access to technology tools or resources did not seem to concern Grace's staff. She observed that her staff was more concerned about "career development and how to get to the next step." She had found that:

> women tend to be a little bit more reluctant to use their resources, you know, the people, the lines of authority, their networks. (E)specially if there's males at the

top of the department, or you know, the food chain. Men seem to be able to tap into that very well because they relate on a lot of different levels. They can talk about sports. You know, they may go to some kind of sporting activity together. Whereas most of the time you don't see women interacting that way.... Men very rarely talk about their kids or that type of thing that women talk about in the workplace. And so the social interaction is something a little bit different and I think because of that, sometimes women feel a little reluctant to ask for what they want and men don't.

Grace observed women asking for less if men were "at the top of the food chain." This created obstacles for women related to access to training, technology tools, and growth.

Helen stated that she observed males more often having access to technologies, resulting in more technical knowledge and the perception by others of having more power, as compared to females: "I do see some of that in my own unit. I think that I view it as a relative scarcity issue. Sort of a fundamental capitalism at work thing. (A)nd I would say that in general it's harder to hire somebody that can do a good job as a systems administrator than it is to hire somebody that can do a good job at the help desk."

Helen described:

a number of women working on [her] staff whose strength is in customer service. And two of them, for instance, work at the help desk. A couple of them work in labs doing customer service with end users. I think it's probably true, for instance, that they wouldn't have access to running servers, but they don't have those skills either.... I do see difference based on skill sets....

Our systems administrators, you know, have more access to both servers and networks needed to do their jobs. Our network people tend to have a fair bit of technology around troubleshooting issues with the network and stuff like that. Our help desk people—what they really need to do their jobs is their computer and their telephone.

Helen linked access to certain technologies to staff's roles and jobs, creating occupational jurisdiction of skills and access to technologies for that position. Tied closely to one's role was the skill set one needed to be able to deal with advanced technologies.

Not only is there a big divide related to gender in technical positions, Alice

thoughtfully discussed an additional sub-divide within her organization:

> We have more problems with people, and it doesn't matter if they're male or
> female, in the position of "my job's more important than yours." I mean it's more
> just a job responsibility that they feel there's an inequity versus male versus
> female....
>> (T)he network engineers are "more important" than the system analysts,
> even though they're both on call 24x7. They both have very, very large
> responsibilities. If a program does not run right, that analyst is maybe fixing it for
> days. If a server goes down, that network engineer might be fixing it for days.
> But they see each others' (jobs) as different values. Part of the problem is that the
> programmers, probably half of our programming staff were hired in prior to Y2K
> in order to ramp up for that. Well at that time those salaries were large cause that
> was the only way you could get COBOL programmers. Network engineers were
> not paid nearly that much. Well, as each year progresses and everybody gets the
> standard whatever percentage increase these network guys are going, "Why do
> they get paid so much more than we do? Our job is just as important or more
> important." That's really part of our problem is trying to balance that out....
> (A)nd it was because of the economics of the time that this group looks like they
> make X more.... So that's probably our biggest sore spot in inequity, not
> male/female. It's position and how it became....
>> I think it gets down to salary. I'm expected to do blah, blah, blah, so I
> should earn more or I'm always on call.... I see it more in the lower ranks, not
> only in my division, but in other areas.

Alice expressed frustration with staff worrying about whose "job was more

important." She stated: "it's hard for others to value other people unless they really

understand what their job responsibilities are and most people can say they do, but I don't

think they really do know."

> Helen similarly discussed the link between salary and importance:

> I would say that there's a clear salary differential between those groups [help desk
> and network people or system administrators] of people and that does tend to um
> give the people at the lower salary levels, which are like the help desk people, uh
> the sense that they're not as important. I think that I and my management team
> try hard to recognize and reward people for their accomplishments based on the
> skill sets that they have, but we're also working in the reality of the marketplace

and you know, with a help desk person you can pretty easily hire a replacement at a similar salary. You can't very easily hire a top-notch network person for a low salary. And so there's sort of a capitalist system at work here in terms of salary and skills.

Genderedness in information technology organizations occurred in the area of technical versus less technical positions or roles. The domination of technical positions by males was clearly confirmed by the co-narrators. Also discussed was the intimidation of females by males dominating technical positions. Knowledge and experience, along with social interaction, were stated as being important to the successful integration of women into traditionally male dominated roles and positions. The need to establish authenticity and legitimacy of technical expertise by women in order to be successful was discussed. The women conveyed the need to establish the authenticity and legitimacy of how important one's job was considered to be by those in more technical positions.

Perpetuating Gendered Organizations: Have's and Have Not's

Divisions by gender were perpetuated by the presence or lack of presence of certain elements in the workplace. One method of perpetuation was allowing certain people or groups of people access to training and professional development opportunities. Having proper training legitimized one's authority, work, and expertise to others. Another method was the lack of women with technical backgrounds and expertise qualified to occupy certain positions. And, finally, perpetuation occurred due to the lack of a "gender friendly" culture within the organizations.

Grace discussed observances and experiences associated with the perpetuation of gendered organizations through access to proper training and technology tools. Only certain people in the organization had access to training opportunities:

> I've worked in environments where only certain people got to go to training all the time. And they usually were males and they were the go-to people and they were always knowledgeable. (E)verybody always pretty much held them up on a pedestal cause you know Joe knows this and Joe knows that. Joe's getting trained. He gets all the great tools. (A)nd then you had Nancy over here, that didn't get to go anywhere and she's still trying to make her computer work everyday.... (S)o it creates what I call the haves and the have-nots....
> I would say typically the haves are the males, the have-nots are the females, unless it's a female that's gotten in good or unless it's a male that nobody likes.... (A)nd I would even say that typically the group that gets most of the training are the male dominated groups, like the network people and security people, whereas the people that may be the project managers, which requires a lot of the softer skills and, a lot of women like those particular jobs, may not get the training that they need.

Aware of how training opportunities impact the perpetuation of gendered organizations, Grace discussed how she had tried to be fair in providing her staff with opportunities for training or technical tools by annually allowing a certain amount of funding for each staff person's needs:

> And I really believe in giving people an opportunity and then if I see that it's still not being administered correctly with their Directors, then I tie them to people's performance evaluations so that you have to measure or do some kind of accountability to say this person went to this training and they learned x, y, and z....

Grace observed "the guys taking more advantage of the technical" training as opposed to soft skill training:

> Anything that's going to enhance their career as far as technical expertise, getting certificates and certifications. I see a lot of that amongst the males. Women are slower, you have to encourage them. And really kind of show them that this is how this is going to benefit you if you do x, y, and z.... Sometimes they take the

> more soft skill types of classes. I guess I see more of that type of courses coming from the women's side.... Men take that if you point it out to them that they need to, otherwise they'll take the more hard skill type courses.... Or women don't take it at all. They don't take advantage of it [taking more technical training] because some of the feedback that I've gotten was that "well, you know I'm just really, really too busy. I've got all this work to do here and if I leave then whose going to do my work and I have to come back" and all those types of things. Men have the same issues but they tend to take off and go and get it done.

Grace also observed that by taking technical training and having technical knowledge, males more often had more power and legitimacy due to having technical skills.

Grace recognized the importance of providing proper training and tools to staff. Having proper training and technology tools legitimized one's authority, work, and expertise. It provided them with jurisdiction in their role. Another method of perpetuating a gendered framework in the information technology area was a lack of qualified women in the field.

All the co-narrators commented that women are pursuing computer science and other technical disciplines in fewer numbers. While Grace specifically commented: "the number of women in engineering and technology is increasing" at places like the MITs, she went on to ask, "If that's the case, then why do we still have mostly males in these positions?" Grace later answered her question as she discussed the lack of women moving up through the information technology organization:

> ... unfortunately there are few women that have actually moved up in IT. Most of them actually get, in my opinion, get very frustrated and they stay where they are. And they don't try to make any type of movement or they just get frustrated and leave and go into something else. I've seen a lot of that. At one time there was a lot of promoting of women and moving women up in technology and that was really great. But now I think we've just came full circle and we're back to, you know, women are just not going into or staying in technology like they used

to. Especially women that went to school and majored in computer science or engineering....

But what I am finding is there is a trend of women coming in at the management level and the executive management level without an IT background; like a marketing person that has been appointed to run IT as a V.P. There's a lot of that going on, which puts a whole different spin on everything.

While Grace made observations regarding fewer women in information technology, Alice also raised an important question as she discussed fewer women pursuing computer science or technical fields of study: "I think it still stems from the whole imbalance of women in IT in general. When I talk to our computer science department here, there are less women going into that field of study.... And I think it's just sort of dwindled and the challenge is how do you get that back?"

Helen similarly commented about fewer women pursuing computer science or technical fields of study. She stated sadly: "... I think it's unfortunate that more women don't go into computer science.... And I think the computer science department has hardly any women students anymore, which is really sad to me...." With fewer women entering the workforce with technical backgrounds, the gendered framework of higher education information technology organizations existed at the co-narrators' institutions. This genderedness permeated the cultures of their organizations.

Grace discussed "gender friendly" cultures, or the lack of such cultures, in information technology and higher education organizations. Grace observed perpetuating or minimizing genderedness: "...(T)here's still more men in IT. In higher ed there tend to be more males. In some departments there are no females within IT at all." She added:

(D)epending on the region you came from, the geographical location, there has never been women in those male dominated positions. So I find that that's interesting and I don't think it's because women are not available for those particular jobs, they just don't get hired into them. So, there are a lot of women with technical degrees, that are doing administrative assistant type positions or other types of positions because they can't get into their field. Whereas, a male coming out of school in certain areas can easily get into an IT role or job.

Grace recalled her experiences of working in the eastern, western, and southwestern parts of the United States:

While there was more men in my IT department, we had women in management. We had women in all levels. (W)omen that were directors and things like that....
I think that it really depends on geographic locations. And I say that because when I come here, the majority of people that work for me are males.... All the Directors are males [five directors].... (P)robably 95% of the staff are males and I think it's a conflict with ... geographical area. When you go to California or you go to some of these other places with more of a mixed culture and gender friendly, you get a pretty good mixture. Now, in some places you're still going to get slightly more men, but you get a pretty good mixture. So I really think it's where you are....

Grace stated she had adapted to different cultural "styles within different geographic locations.... Cultures are different.... (A)nd people maybe look the same, but the culture within a lot of geographic locations are different. This is a different culture for me."

Alice similarly commented that some cultures are more "gender friendly". Alice described the lack of acceptance by others of women information technology leaders as being "depend[ant] on what part of the country or where you started from. I don't think it's as positive all over. I think fortunately this area here is conservative.... I'm not sure. But I think your bigger cities, some of the other areas, people have a harder time or women have a harder time being accepted." Alice had observed friends or colleagues

"from larger cities" experiencing less "gender friendly" cultures. Alice added: "I think it is a little more accepting as you go west, way out west, and east. And Midwest is a little tougher I think and maybe slower at times too, you know to accept that."

Helen discussed her specific personal experience with the information technology field did not perpetuate genderedness: "That hasn't been my experience." She stated: "... I felt accepted by the IT staff from day one.... I think they just treated me like they were happy to have me here." She described her initial apprehension toward being accepted as a woman leader in the higher education information technology field:

> And I wondered at the time that I made the decision to move into IT what it would be like to be in a field where many of the staff were male ... and would there be issues.... And I was actually quite delighted to find that there weren't. And certainly there are always personnel issues when you're in a position of authority and management; but people in the IT field, if anything, seemed to accept a woman here better than I ever could have imagined....
> (S)ome of the strongest most competent technical men in my department are also some of my strongest supporters.... I feel really lucky about that.

Alice and Grace experienced or observed the perpetuation of gendered frameworks and cultures within higher education information technology organizations. Helen had limited experience with perpetuation. This perpetuation occurred through women experiencing less training and professional development opportunities in technical areas, fewer women pursuing computer science and other technical disciplines, and a lack of "gender friendly" cultures within the organizations.

The co-narrators experienced mixed success with integrating women into traditionally masculine roles or male-occupied positions. They discussed the occupation of technical positions more often by males and less technical positions by females.

Increasing women in more technical positions was dependent on their acceptance, knowledge, expertise, and social interaction. The perpetuation of gendered organizations was linked to fewer women seeking or having training opportunities in technical content areas, fewer women pursuing computer science or other technical degrees, and the lack of "gender friendly" cultures in higher education information technology organizations.

As the co-narrators told their stories providing uniquely situated descriptions of their journeys, the data revealed a number of themes and a variety of categories characterizing their paths. Several dualities emerged as the data analysis occurred.

Data Dualities

The data from the co-narrators' lived lives as they pursued careers in higher education information technology provided a rich body of findings. Critical concepts of duality presented themselves in which the data supported two or more different yet important themes related to two or more different research topics.

The first duality occurred with data related to the importance of the co-narrators' education, experience, and skills. As experiences related to obstacles were discussed, the co-narrators spoke about their own personal lack of education, experience, and skills or this lack in others as discussions occurred regarding professional pathways available to them. Education, experience, and skills also became an important theme from data gathered as experiences related to opportunities were discussed. The co-narrators discussed, for example, the importance of a degree in a suitable discipline, having good hard and soft skills, and experiences that proved beneficial for themselves or others. A third area in which the data related to education, experience, and skills presented itself

was as a theme related to the research topic of methods used to overcome obstacles. The co-narrators discussed obtaining degrees in certain educational disciplines and building skills and acquiring experiences that could be used to overcome obstacles or could prevent obstacles from occurring. These data supported distinct, but related categories within themes.

The second example of data duality related to the need for the co-narrators or others they observed to build credibility by proving oneself. As the co-narrators discussed experiences related to the theme lack of recognition, support, and trust from others, associated with obstacles experienced, data related to proving oneself in attempts to be more recognized, supported, or trusted emerged. Data regarding building credibility also emerged as the co-narrators discussed the opportunities they experienced to build credibility and prove themselves as they enhanced their leadership skills while working in higher education information technology. And finally, data supporting the benefits of building credibility also presented itself under the theme of the IT integration process as difficulties women faced in the building of credibility and in being accepted into technical roles were discussed as related to the research topic of genderedness. The data concerning credibility contributed to three distinct categories.

A third concept of duality presented by the data related to the co-narrators being able to acquire needed information that had been withheld. As obstacles were discussed, data related to perceptions of marginalization due to information being withheld emerged as the theme of marginalization was discussed. Data from the co-narrators regarding information acquisition also emerged as the research topic of methods utilized for

overcoming or eliminating obstacles was discussed. The method of informal networking was often used to acquire needed information. Withholding information contributed to two categories emerging in the analysis.

The final concept of duality related to gender friendly cultures as higher education information technology culture was discussed as unfriendly to women in certain parts of the country. This discussion occurred as the research topic of genderedness and occupational jurisdiction were discussed. Gender friendly cultures were also addressed as the co-narrators' overall experiences were discussed in regard to being pioneers and acceptance within their own institutional cultures. The dual utility of these data in supporting distinct categories was helpful in supporting emergent themes.

<u>Leading The Way</u>

The co-narrators entered and have remained in their CIO positions in higher education as "pioneers" in a traditionally male world. They described opportunities and positive experiences they encountered in which they were supported by staff, trusted by supervisors, and felt "good" about their experiences and the "different opportunities" provided by the field of high education information technology. Obstacles and struggles were described by the co-narrators that caused discouragement, disappointment, distress, and experiences of unwelcomeness.

Because they were "pioneers," they forged ahead finding methods of overcoming or working around the obstacles while focusing on the positive, supportive experiences. Learning from their journey, the co-narrators tried to minimize obstacles for others, men

or women, as they pursued careers in the gendered organization of higher education information technology.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Higher education information technology divisions provide valuable expertise and guidance related to the implementation and use of administrative and academic applications. The person leading such divisions, the CIO, has a great deal of responsibility and fulfills a very important role for the institution. This study investigated the elements characterizing successful women CIOs in higher education and identified elements related to career paths, the nature of higher education institutions, opportunities available, and obstacles encountered as three women CIOs developed their careers and advanced professionally to their current positions.

With approximately 21.4% of the higher education CIO positions held by women, a much smaller percentage than the percent of women working in higher education information technology (Katz et al., 2004), developing an understanding of the path taken and opportunities and obstacles encountered by women information technology leaders will assist individuals and institutions in examining this leadership gap in the traditionally male-dominated higher education and male-dominated information technology fields. Three co-narrators told the stories of their lived lives and revealed their paths and experiences in this study. The three represented a range of perspectives, educational backgrounds, and experiences.

Research Questions Revisited

Several research questions guided this study within the conceptual framework of feminist standpoint theory and gendered organization theory. The questions and

conversations gave the co-narrators voice as the researcher endeavored to determine the patterns and themes of those elements characterizing women who have achieved CIO positions in higher education institutions and to ascertain the opportunities and obstacles while aspiring to and acquiring the CIO position. The primary research question for this study was: What are the obstacles and opportunities encountered by women higher education information technology executive leaders (CIOs), from their perspectives, in the pursuit and achievement of their CIO positions? The subsequent questions were:

1. What are the lived experiences of women higher education information technology leaders?

2. Based on the perceptions of the co-narrators, does being a woman influence or affect women's careers as higher education information technology leaders?

3. Were there elements (social, political, economic, educational, or other) that the co-narrators experienced that provided opportunities enabling them to obtain the position of information technology executive leaders in higher education?

4. Were there obstacles and barriers experienced by the co-narrators during their career paths of becoming information technology executive leaders in higher education?

5. If obstacles were encountered, were there methods utilized by the co-narrators to overcome or eliminate obstacles and barriers encountered during the process of becoming an information technology executive leader in higher education?

6. Were there experiences the co-narrators had in which the organization of higher education or information technology hindered or facilitated their career path of becoming a CIO?

7. According to the experiences of the co-narrators, is a gendered framework of femininity or masculinity perpetuated in higher education organizations or higher education information technology organizations?

8. Were there observations made or experiences the co-narrators had reflecting the construction of divisions by gender in the higher education organization or information technology organizations?

9. Were there experiences the co-narrators had in which they were marginalized or perceived a patriarchal designation of power and authority?

10. Were there observations made or experiences the co-narrators had in which authority was legitimized, task boundaries determined, or authenticity of work confirmed due to access to certain artifacts or due to the sex of the person in a particular role?

Throughout the research and in-depth interview process, these questions remained relevant and continue to be relevant for seeking such information in future interviews.

<u>Results</u>

All of the co-narrators addressed experiences they had or those of others they had observed related to the research questions. Responses to the ten distinct questions congregated around five major topic areas: overall experiences as pioneers in the field,

opportunities experienced, obstacles encountered, methods of overcoming or eliminating

obstacles, and the construction of divisions by gender and occupational jurisdiction.

As pioneers in the higher education information technology field, each co-narrator

was the first woman CIO at her institution. The co-narrators agreed that they had

experienced many opportunities as they pursued their professional paths. Each co-

narrator stressed their personal strengths, support from mentors and family, and education

and experience as the more important elements assisting in providing opportunities. The

co-narrators also agreed that, to varying degrees, each had experienced obstacles. Each

co-narrator stressed stereotypic responses from staff, co-workers, or superiors; a lack of

recognition, support, and trust; and marginalization as the more important elements

contributing to the creation of obstacles they encountered.

All of the co-narrators used various methods in dealing with the obstacles

encountered. The methods most commonly used by the co-narrators to assist with

overcoming or eliminating the obstacles were gaining strength from support groups and

individuals, perseverance, and connecting to others with credibility. The existing

literature led the researcher to believe that the co-narrators would express a great deal of

concern regarding issues related to genderedness and occupational jurisdiction in higher

education information technology. While the co-narrators described several experiences

that connected to these areas, their responses revealed experiences related to

genderedness and occupational jurisdiction did not seriously impact opportunities or

exacerbate obstacles experienced. Grounding this analysis in the lived lives and

experiences of the three co-narrators provided an in-depth understanding of the

opportunities and struggles encountered and methods utilized by the women to advance
their careers and perform their professional work.

Results and Research

Pioneers

The co-narrators experienced many opportunities and overcame many hurdles as
they developed their careers and pursued professional advancement. The recognition of
and description of themselves as determined "pioneers" in the higher education
information technology field was aptly justified. White (2002) described 21st Century
pioneers in public education as those willing to engage in new leadership styles and
models. She discussed that such pioneers must be determined and possess courage to
overcome obstacles and cynics. The co-narrators in this study clearly met these criteria
and throughout the interviews reflected on their "focus and relentless determination in the
face of adversity" (p. 10) that presented itself at various times throughout their careers.

The co-narrators' feelings of acceptance and transitions from outsiders to insiders
within their institutions and within the information technology field provided them a
unique standpoint on self, society, and the genderedness of higher education information
technology. Collins (1986) described this as the "outsider within" (p. S14) as she
described Black women's roles as they became part of white families while nurturing and
raising the white children. Black women were the less powerful outsiders living within
the more powerful white insider communities and because of their role were somewhat
accepted. The co-narrators' experiences, hard work, and opportunities for professional
growth permitted them to become a part of the white male higher education technology

culture, eventually gaining acceptance as the "outsiders within." Merton (1972) described this as socialization into the life of the group and awareness of the group's realities and symbolism necessary to "decipher the unwritten grammar of conduct and the nuances of cultural idiom" (p. 15). The co-narrators' emphasis on positive experiences in their career development and professional work in higher education information technology was due in part to having made the transition from outsiders to insiders and developing an understanding of the nuances of the culture.

The co-narrators also described several experiences in which they felt they were more sensitive than males to certain elements or situations in the workplace. Examples included sensitivity toward being fair to women in the workplace, experiencing enjoyment in staff's successes, being concerned about women and staff struggling in the workplace, and understanding that staff cannot leave their personal lives at the door when coming to work. The co-narrators confirmed Collins' (1986) work regarding this sensitivity as she described outsiders within as becoming "different people, and their difference sensitizes them to patterns that may be more difficult for established ... insiders to see" (p. S29). As Helen discussed a particular staff member's struggles, she highlighted the fact that the female staff member's male manager did not take this staff member's struggles as personally as Helen did.

The co-narrators agreed that higher education information technology began with a composition of predominately male insiders. Katz et al. (2004) found that "for many [women], the pioneering years were characterized by feelings of professional isolation" (p. 37). One woman they interviewed stated: "When I started out, it was unusual for a

woman to work in this field" (p. 37). The co-narrators also described isolating experiences in which they were the only woman as occurring more in the early years of their careers. However, Helen commented that it still occurs today and described a recent experience.

They also described the higher education environment as complex and unique. Clark (1987) agreed and described the "academic profession ... [as] an odd occupation. Composed of many disciplines, ... a training ground for other professions, ... variety is its name, ... complex, and ... distributed" (pp. xxi-xxii). The "tangled web" (p. xxix) of American higher education is perhaps "secured by its traditional value and power" (Cohen, 1998, p. 458). Cohen described American higher education as being a "part of the fabric" (p. 458) of society and an expression of the American society's self. Women pioneers in all fields must become more naturally woven into that fabric for the society's self to be complete.

As pioneers in the higher education information technology field, the co-narrators experienced many opportunities and obstacles as they became accepted into the complex environment of higher education. While they were making their own path, they were also creating a path for others to learn from and perhaps follow.

Opportunities

The co-narrators agreed that their personal strengths, mentors, family support, and background and experience were the primary elements in creating opportunities as they pursued their professional work and advancement. The co-narrators emphasized experiences creating opportunities over those creating obstacles in their discussions.

Excellent leadership skills and a comfortable leadership style were self-described personal strengths the co-narrators reported that assisted in creating opportunities for professional advancement. The co-narrators' description of these as creating experiences leading to opportunities is confirmed in research addressing differences in the leadership styles of males as compared to females. In their description of style, the co-narrators defined themselves as less autocratic and more transformational, sensitive, caring, interested in building relationships and empowering others.

Rosener (1990) found in an analysis of the International Women's Forum Survey of Men and Women Leaders and in follow-up interviews with several women leaders responding to the survey that "women are much more likely than men to use transformational leadership" (p. 121) or what she terms "interactive leadership" (p. 120) that "encourages participation … shar[ing] power and information … and enhanc[ing] other people's self-worth" (p. 120). Eagly and Carli (2007) highlighted this style as one that empowers others: "The good news for women is that their somewhat less masculine ways of leading have come into greater fashion: their styles approximate the now valued model of a leader who acts as a *good-coach* or *good-teacher* rather than a traditional *command-and-control* boss" (p. 119). Dawson's (1995) study related to women in management and ethical decision-making found women "more sensitive and caring, … more creative [in] problem solving, more effective [at] relationship building, … more supportive and understanding" (p. 68) than men.

Eagly and Carli (2007) cautioned women that caring and supportiveness as leaders may be interpreted by others as maternalism: "It is this aspect of leadership style

that women most exceed men" (p. 130). For senior levels of management, this style can

be viewed as less essential and perhaps even detrimental to fostering promotions or the

acquisition of top positions by women. Fine and Buzzanell (2000) proposed a

revisioning of academic leadership to focus on the "serving" (p. 129) of others—faculty,

staff, and students. Serving others involves the elimination of obstacles, enabling people

to effectively perform their job function. Revisioning leadership as serving others begins

by critiquing the core "male-centered assumptions" (p. 145) within an approach and

allows for a blurring of boundaries "between female and male, heart and mind, and

intuition and rationality" (p. 156) leading to a more inclusive environment for women.

Alice specifically discussed serving the faculty and students at her institution. As the co-

narrators discussed elements of their leadership style related to caring and supportiveness,

each provided examples of such situations involving staff and each explained the

boundaries they try to maintain as they offer attention and support to others.

Savarese's (2006) interviews with four CIOs in higher education resulted in the

CIOs stressing the building of strategic alliances and the effective decision-making

necessary for today's CIO. The co-narrators also confirmed many of the points made by

Savarese's interviewees. For example, these CIOs underscored "win[ning] the trust of

the president and the other senior staff, … be[ing] a good listener, … be[ing] tuned in to

the culture of where you are, … and be[ing] able to communicate" (pp. 26-33). The co-

narrators' leadership styles and skill descriptions supported the need to establish

alliances.

Katz et al. (2004) found slightly over half of the higher education information technology leaders they surveyed had high transformational leadership scores. Transformational leaders "inspire, empower, and motivate staff; encourage creativity; and effectively communicate a shared mission and vision" (p. 13). The co-narrators similarly described their leadership as involving elements of empowerment, motivation, communication, caring, and inspiration.

Rosener (1990) characterized women transformational leaders as the second generation managerial leaders who break away from adhering to the "rules of conduct that spelled success for men" (p. 119). These women leaders succeed by "drawing on the skills and attitudes they developed from their shared experience as women ... and on what is unique to their socialization as women and creating a different path to the top ... succeeding because of—not in spite of—certain characteristics generally considered to be 'feminine' and inappropriate in leaders" (pp. 119-120). The co-narrators described several feminine characteristics in their leadership styles, enhanced through shared experiences, and discussed the importance of these as personal strengths that helped them achieve their leadership roles.

The co-narrators also described mentoring both men and women as a part of their leadership styles. Bower (1993) discussed the importance for women higher education administrators "to actively promote and provide mentoring of younger, less experienced women" (p. 97) in order for such women to have opportunities. "More structured and deliberate action" (p. 97) is needed since mentoring was so important.

The co-narrators also shared some elements of their leadership styles that reflected a blending of characteristics typically attributed to both male and female leaders. Alice and Helen stated they had become more decisive over the years, finding this positively affecting their leadership abilities. Grace similarly described elements of her leadership style indicating resoluteness and steadfastness. Building alliances and making smart decisions were important to the co-narrators. The co-narrators described a mix of many leadership style elements as they described their leadership approaches.

Ausejo (1993) concludes that "the existing stereotype of effective leadership has already been directly affected by the influx of women into various roles in management and administration" (p. 87). A "collaborative union" (p. 87) and integration of female values and "established male leadership traits" (p. 87) is resulting in an androgynous leadership style. Klenke (1996) similarly found a mixed leadership style emerging. After reviewing the research on gender and leadership, Klenke advised that: "we should refrain from interpreting the tendency of women to lead more democratically as either an advantage or disadvantage" (p. 147). When considering leadership style, one must understand that "a democratic leadership style may enhance leader effectiveness under some circumstances, while the autocratic style may facilitate a leader's effectiveness under a different set of circumstances" (p. 147). Ausejo cautions that opportunities for women to become effective leaders "will only result in a working environment conducive to giving women the opportunity to succeed" (p. 87).

Effective communication skills were important personal strengths of the co-narrators. The ability to effectively listen to others was important. Listening to what was

being said and what was not being said was particularly important to Alice and Grace as they discussed their personal strengths. Mediating and communicating in a non-threatening manner while being respectful of others was important. The co-narrators perceived their communication skills to be excellent and stated that they benefited by having such good skills. Birnbaum (1988) stated that good communication skills are essential for leaders in higher education and that "listening is hard, particularly for leaders who believe that the leadership role calls for them to *tell* other people what to do" (p. 222). K. A. Johnson (1993) stated: "communication skills are the key to success for women who are seeking jobs, promotions, or more recognition for their vital roles in organizations" (p. 126).

Taking initiative was another personal strength that provided the co-narrators with opportunities. Taking initiative intersected with the co-narrators' need to continue to prove themselves and be involved in a variety of projects and work. Multitasking abilities were mentioned as positive and helpful by both Helen and Grace. While the research does not confirm women or men as better multitaskers (Havel, 2008; Shellenbarger, 2003), many writings direct the improvement of multitasking skills toward women, implying that women are expected to do more multitasking than men. Tenzer (2008) coached working moms to develop multitasking skills in order to "use time wisely" and "be more efficient" in order to keep one's "head above water" (p. 1). Erickson (2008) advised administrative assistants, a position held primarily by females, to develop multi-tasking skills to "improve ... productivity" and "reduce inactive periods" so one "will always be doing something productive" (p. 6). Writings such as

these imply that if the concept of women taking initiative and proving oneself is nothing more than "busy hands" or "busy minds" male hegemonies will certainly be perpetuated.

The co-narrators discussed many personal strengths that provided experiences creating opportunities. Primary categories of their primary personal strengths were leadership skills and styles, communication skills, and initiative.

Mentors were another important opportunity available to the co-narrators as they progressed professionally and provided experiences that created opportunities. Whether the mentors were faculty, friends, supervisors, or part of an institutional mentoring program, mentors guided and assisted the co-narrators as they became leaders in higher education information technology organizations. Many successful women in information technology, including the co-narrators whose first exposure to computers occurred during college, had grown with the field since the 1980s through on-the-job experiences. Helen and Alice had background interests in mathematics that over time evolved into a computer science interest. Grace learned through on-the-job experiences as well as acquired a degree in the information systems field. Mentors assisted with knowledge and career growth as computing grew in importance and influenced the career growth of the co-narrators.

The co-narrators confirmed Turner et al.'s (2002) research regarding the value of mentors in assisting with career growth and confirmed findings that successful information technology women possessed a variety of educational backgrounds, not just a computer science background. Turner et al. found "women followed multiple academic paths to their current positions in the information technology field" (p. 6) and many were

"overwhelmingly ... influenced by a male teacher or college professor, ... or boss" (p. 10). All co-narrators spoke of male teachers, professors, and supervisors serving as mentors to them.

Pence (1995) stated that one "learn[s]... leadership through mentorships" (p. 125). For those pursuing educational administration types of positions, such as CIO, mentorship programs "provide a framework to actively seek, support, and promote under-represented groups" (p. 142). Bower (1993) stated: "the formalization of mentoring in colleges and universities must be given its real place of importance—it should receive funding like all other forms of faculty development" (p. 90). The importance of mentor support was clearly highlighted by the co-narrators.

Ramsey and McCorduck's (2005) findings related to successful women in information technology leadership included mentoring as one of the elements: "lov[ing] technology, ... believ[ing] they are doing something worthwhile, ... [making] the most of both formal and informal mentoring, ... encourag[ing] others, ... and develop[ing] personal and professional networks" (pp. 26-27). The co-narrators discussed all of these elements as important.

While mentorships are more often discussed as related to faculty moving into administrative positions, mentors can also be very valuable transfer agents of power, roles, and positions for women in staff leadership roles in educational institutions. Helen progressed through faculty positions into her role. Alice and Grace progressed more through staff-types of roles. All spoke of mentors working with them informally, as opposed to more formal mentoring programs, and most of their mentors were male.

Helen and Alice each had a mentor who provided the opportunity for them to take his

place as CIO upon leaving. Klenke (1996) stated mentoring is very important in

providing women with leadership opportunities "because mentors act as transfer agents

of organizational leadership" (p. 187). Eagly and Carli (2007) stated that "women can

gain from a strong and supportive mentoring relationship with a well-placed individual

who possesses greater legitimacy—typically a man" (p. 145).

The co-narrators did not seem to have any problems with finding or acquiring

mentors as compared to Noe's (1988) and Ragins and Cotton's (1991) findings that

women often face obstacles to obtaining mentors. Noe stated that "the number of

mentoring relationships (mentorships) available to women does not appear to be keeping

pace with the increasing number of women needing mentors" (p. 65). All co-narrators

readily mentioned mentors "latched" onto them and guided them, often before they even

realized the person was a mentor to them.

The co-narrators' experiences confirmed the value of mentoring relationships in

advising women reaching upper-level executive positions. Katz et al.'s (2004) survey of

higher education information technology professionals found "54.5 percent of women

reported having a mentor" (p. 49). Their study also found "nearly half … of respondents

who have a mentor plan to remain in a higher education career 15 years or more, while

only 37 percent of those without mentors intend to do so" (p. 49). Ausejo (1993)

discussed how fortunate women educational administrators are who have mentors. She

stated: "[t]here is no substitute for having an experienced, respected individual watching

over you, pushing you in the right direction, giving you advice and introducing you to the

right people" (p. 84). Bartol and Aspray (2006) also discussed the importance of mentors and role models to young women considering a technical field of study. They stated: "Mentors may be in a position to correct some misperceptions of women students about the nature of the IT workplace. They may also be able to help the students overcome a lack of confidence and thereby increase persistence in the field" (p. 390).

The co-narrators were very emphatic regarding the role they expected mentors to take. Helen and Alice both stressed the role of mentors to be that of advisers or coaches, not problem solvers. They wanted to be the ones who decided on the best solution to a problem. Bower (1993) described the role of a mentor to be that of "an experienced person provid[ing] guidance and support to the developing novice" (p. 92). Eagly and Carli (2007) discussed the role of mentors to be: offering "encouragement, acceptance, … friendship, … coaching and … personal support" (p. 174). For the co-narrators, mentors were primary in their career development and professional success. Without mentors, the co-narrators did not believe they would have achieved their current roles.

Family support and encouragement was another theme all co-narrators discussed as important in providing opportunities for their professional advancement. Words of encouragement and guidance as well as monetary assistance in pursuing educational goals were particularly valuable to the co-narrators. The co-narrators spoke particularly of their fathers' encouragement and words of advice. This confirmed Turner et al.'s (2002) findings related to the importance of parents and educators in encouraging females to pursue typically male-dominated roles. "The most important influences were family members and teachers. Fathers were cited most frequently … and emerged as important

… because of the active role they were portrayed as playing in their daughters' lives and decisions" (p. 9). Bower (1993) noted that some research indicates that successful females identify with their fathers early in life and then later, after entering the workforce, their male boss becomes a primary mentor to them, effectively taking over their father's role. The co-narrators all spoke of male supervisors being a primary mentor to them at some or multiple points in their careers. Shakeshaft (2006) also found that successful women educational administrators "almost always acknowledge … the importance of family support" (p. 501) with the emphasis on paternal support in those societies based upon patriarchy.

The co-narrators also positively spoke of observances they had made regarding male staff and male friends taking more of a role in sharing family responsibilities in today's culture. This role-sharing provided their wives additional career support and opportunities. The literature suggests that men are sharing more in household and childcare responsibilities and this trend is likely to increase. Ausejo (1993) wrote that "more and more professional men are taking a role in the raising of the children, and sharing in household tasks" (p. 86). Eagly and Carli (2007) stated: "Men increasingly share housework and childrearing, and there are signs that these changes toward greater equality are likely to continue" (p. 49). While women still often bear the brunt of caring for the household and children, such trends are encouraging.

Support and encouragement from family, as well as friends, assisted the co-narrators as they pursued their careers and advanced professionally. The co-narrators recognized the importance of such support and appreciated it immensely.

The co-narrators' education, knowledge, and experience became an important theme and provided them with many opportunities for professional advancement. The co-narrators each had differing educational backgrounds, knowledge, and experience levels. As stated previously, each had some level of educational background related to computer science or information systems.

For the co-narrators, as women executive information technology leaders, having a computer science degree or other technical degree enhanced their credibility. In addition, Grace and Alice both had experience in the business world. Grace highlighted how this experience assisted her in utilizing certain management strategies in her higher education CIO role as CIOs today perform less technical duties and more business executive duties. Katz et al. (2004) found senior-most information technology executives reporting the skills "most pivotal to their success ... [as] communication and strategic planning ... [along with] understanding business processes and operations" (p. 83). Brown's (2006) study found CIOs today are expected to have the following attributes: "communication skills, political savvy, information technology knowledge, strategic business knowledge, education, and reporting structure ... within one level of the CEO" (p. 53). Zastrocky and Schlier (2000) stated that for a CIO in higher education "to be accepted as a member of the executive team, the CIO must be a full-spectrum contributor to the development and management of business strategies and directions rather than a niche player in the limited band of IT" (p. 53). Of the co-narrators, Grace was the only one who was a member of the executive team or cabinet, reporting directly to the chief executive officer of the institution.

The co-narrators agreed that understanding the technical aspects and programming elements of information technology were very important for advancement. Past writings agree with this and stress the importance of a computer science degree as the means by which one developed these understandings. Callaway (1996) discussed the "trend toward the more technical CIO" (p. E1) and how "it's absolutely critical that the CIO be the ultimate guru on technology" (p. E4). Kreiser (1998) discussed the importance of "finishing [a] computer science degree first" (p. 118) before completing an MBA in pursuing a career path to CIO. In an interview Kreiser conducted with a consultant from a major IT executive recruiting firm, the consultant stated both are ideal: "A star performer who has the validation of both a computer science degree and an MBA is much more marketable for CIO consideration" (p. 118).

More recently, however, some research supports the success of information technology leaders without computer science or more technical backgrounds. Turner et al. (2002) found in their study of women in information technology that "contrary to the oft-cited pipeline analogy, a degree in computer science is clearly not a prerequisite to a career in information technology. For many successful women, interest and talent in IT emerged gradually and developed over time..." (p. 16). Bartol and Aspray (2006) cited several studies in which women "entered the IT field via 'nontraditional pathways'" with no "formal training in a computer-related field" (p. 381). Such studies generally described entry-level positions into the field. Perelman (2008) characterized the information technology department as a field where "demands are constantly shifting ... [and full of] moving targets" (p. 1). One in which "the world [has] started asking for

more than just technical people" (p. 1). Perelman stressed that what is needed in CIOs are those "who understand tech, culture and business" (p. 3). Eckle (2008) agreed as he summarized a recent Gartner Inc., study of technology recruiters and the needs of their clients. He found "the key findings point[ed] to an interest in hiring CIOs with knowledge that's much broader than what can be gained from working in IT ... [and that typical job descriptions include] "non-IT-related duties" (p. 40). While the co-narrators recommended a background in computer science or a technical field of study for CIOs, Grace emphasized the additional importance of experience in the business world and having a business-like focus on strategic issues of the institution.

As the data indicated, networking and professional organization memberships, personalized recruitment, organizational support, and affirmative action legislation also provided the co-narrators experiences leading to opportunities for professional advancement. Networking provided formal and informal contacts and the co-narrators were able to build additional credibility through professional organization involvement. Networking and professional involvements assist in building social, political, and cultural capital and provide opportunities through "emotional support, contacts, ... information [gathering], ... reduc[ing] feelings of isolation, ... and establishing positive relationships with colleagues" (Eagly & Carli, 2007, p. 173). Jones and Komives (2001) emphasized the importance of networking and professional organizations as they wrote: "Involvement in professional associations has provided women ... with significant networking, mentoring, and leadership opportunities" (p. 240). Ramsey and McCorduck (2005) found "develop[ing] personal and professional networks" (p. 27) was important

for success by women in information technology. Groysberg (2008) found women stressing the importance of "building an external network [and] maintain[ing] an external focus" (p. 75) as important to women's success. The women confirmed they received both personal and professional support through the formal and informal networks and professional organizations they belonged to.

All three were recruited to some degree as they took higher education positions. Helen and Alice moved up from within the institution to eventually take the CIO position. Alice specifically stated she thought she was originally recruited back to the institution because she "fit in" with others. Helen was encouraged to apply for the CIO role by the former person exiting the position. Such internal advancement was due to being perceived as a good "fit" within the organization. One method of gaining acceptance as a good "fit" is to "forge alliances with supportive men" (Bashaw & Nidiffer, 2001, p. 275). Both Helen and Alice had built such alliances. Grace was recruited by a friend who knew of the position. When filling positions, those in power often prefer to surround themselves with others who are similar, those who they are familiar with, and someone who does not make them uncomfortable or cause concerns. Flynn (1993) stated: "Decision makers surround themselves with leaders who are like themselves because changes in political, legislative, and economic conditions require most institutions of higher education to operate in an environment of uncertainty. When the external environment is uncertain, internal predictability takes on greater importance" (p. 116).

While Helen's and Alice's "fitting in" supports Flynn (1993), it does not support Morrison et al.'s (1995) study. They found one of the top six barriers identified by human resource manager respondents from major corporations for the lack of diversity within their organizations was: "White men already in place, keep others out because of greater comfort with their own kind" (p. 13). Helen and Grace's recruitment into their positions and Grace's recent invitations to apply for other positions which she spoke of also do not support Morrison et al.'s (1995) findings in the Glass Ceiling Benchmark Survey in which ineffective recruiting was given as a major obstacle to women's advancement.

Organizational support was another theme related to creating experiences leading to opportunities. Organizational support helped Grace as she was able to continue her education and have flexibility in her schedule as she cared for her children. Fagenson and Jackson's (1993a) review of the literature suggests that such flexible work programs and on-site daycares "result in lower employee absenteeism and job turnover and greater job satisfaction and commitment" (p. 106). Dreher's (2003) longitudinal research found that women in lower management positions were positively affected by work-life programs such as "flexible work schedules, job sharing, telecommuting, ... adoption and elder care benefits, and generous childcare benefits" (p. 547) such that increases were seen in the companies studied of women in senior management positions between the 1980s and 1999. Catalyst (2006c) also confirmed the benefits to women and men in having organizational support programs and benefits such as childcare programs, flexible leave and work schedules, telecommuting, and other programs and benefits. Ilene Lang,

President of Catalyst stated: "Businesses can increase productivity and retention in today's round-the-clock work environment by cultivating an agile, results-focused workplace, where work and life responsibilities aren't mutually exclusive" (p. 1). While Helen and Alice confirmed the benefits of such programs to many of their staff, they both expressed rather traditional, managerial concerns regarding the disruption caused in the workplace from such programs. This disruption was due to the perception of others that men or women with children were given more leniencies or perks.

While the co-narrators expressed positive perceptions of affirmative action, it did not emerge as a major theme or force in providing opportunities for them. Grace more than others expressed positive effects from affirmative action regarding educational opportunities and the recruitment of women. Helen expressed affirmative action's positive influence on both she and her spouse being offered positions at the same institution indirectly resulting from a litigating situation before her arrival at the institution. Alice did not express any specific benefits to her from affirmative action enactment. This confirmed Chliwniak's (1997) work in which she stated: "Although white women have benefited from the affirmative-action movement, they apparently do not see themselves as great beneficiaries" (p. 16). She attributed this to the fact that "as time moved forward the citizenry began to lose clarity of its intent.... [A]ffirmative-action plans began to be regarded not as corrective devices for classes of people who historically had been treated differently from others but as reasons for reverse discrimination" (p. 14).

Helen and Alice both commented on the lessening attention being given to affirmative action and diversity today as compared to the past. Their perceptions of improved gender equality resulting in lessening attention to affirmative action are supported by others' current discussions expressing a common view of gender equity no longer being a concern due to it having been achieved. Sax (2007) writes: "Today— decades after the women's movement started what became monumental gains for female students in terms of access, equity, and opportunity—the popular notion is that gender equity has been achieved" (p. B46). Harris, Morello, and Raskino (2007) termed the past twenty years of affirmative action efforts "first-generation initiatives" (p. 6) that were focused on regulatory issues, quotas and controls. They stated: "[T]he workplace did not benefit [from these initiatives and] these first-generation initiatives have not produced the desired results [of gender equality] as the discussion of real gender differences [was driven] underground.... [N]egative stereotypes and discriminatory practices remain" (pp. 5-6). Strong institutional leadership is needed to set the vision and keep the agenda of affirmative action in the forefront.

The co-narrators experienced many opportunities that benefited their careers and professional growth. They acknowledged they had been very fortunate to have had such experiences leading to opportunities.

While the literature also reported women can experience opportunities for technical careers through increased positive exposure to computers in the home and at school as young girls (Barker & Aspray, 2006; Smith, 2000; Turner et al., 2002), this was not reported by the co-narrators. This was due to the co-narrators age and the fact that

computing was not available in those early years in the schools or homes. The co-narrators addressed this lack of opportunity as they stated their first exposure was while in college. The literature also discussed formal mentoring programs as providing opportunities to individuals. The co-narrators spoke primarily of informal mentoring opportunities they experienced. Grace spoke of a formal mentoring program at one institution but she did not indicate it provided her any real benefits. Specific women's networks, such as Women in Technology International, Webgrrls, and women branches of groups such as the Association for Computing Machinery (ACM) can also assist in providing experiences that create opportunities for women and "offer career-advice articles, ... job search banks, ... briefings on technology, and online discussion forums" (Bartol & Aspray, 2006, p. 393). The co-narrators did not mention being involved in any such networks or using networks such as these in seeking positions.

The co-narrators effectively utilized the many experiences that led to opportunities for them to develop careers and expand professionally in the higher education information technology field. They were very positive and enthusiastic about telling their stories regarding the opportunities experienced. In addition to experiences leading to opportunities were also experiences leading to obstacles.

Obstacles

In addition to various opportunities for professional advancement, the co-narrators also experienced obstacles as they pursued professional advancement and growth. Major obstacles included stereotypic responses and beliefs from staff, co-workers, or superiors, a lack of recognition, support, and trust, and marginalization. All expressed frustrations

over the lack of women in information technology and the lack of encouragement, whether family support or educational support, resulting in negative stereotypes by girls toward technology. Kekelis, Ancheta, and Heber's (2005) findings indicated "that many girls have limited career options and lack the information and guidance to make informed academic and career plans. Few of the girls ... were encouraged to consider a career in technology" (p. 107). Turner et al. (2002) found many women in their study "not speak[ing] of education as a route to their decision making process"(p. 11) to enter technical fields. Others "experienced outright discouragement from teachers despite their aptitude for math and science" (p. 12).

The co-narrators expressed frustrations that the lack of early support resulted in a lack of interest from young girls and male domination in the field, confirming much of the research. Barker and Aspray (2006) reviewed the literature since 1994 regarding girls' pathways to information technology fields. They stated that "access to computers by boys and girls is much less important as a research topic today" (p. 4) due to the increased access children have to computers. They explored the underrepresentation of girls in computing and found a significant influence to be that "the largely female teacher population (especially in primary grades) is unlikely to serve as role models who demonstrate competence with computing" (p. 43). More training in the use of computers is needed for elementary teachers. They also found evidence that "boys [still] dominate the actual use of computers at school and elect to take more courses that study computers, ... girls have less positive attitudes, less confidence, less interest, and less experience with computers than do boys, ... and the home environment is more supportive of boys

than girls being interested in computing" (pp. 44-45). Because of this general

environment, computing is still considered uninviting and undesirable by many girls.

The co-narrators discussed and confirmed many stereotypic responses from others

as indicated by previous research. Hurtful, destructive, disparaging comments were made

to each of them to varying degrees, preconceived notions by others that women didn't

belong in information technology existed, fear and denial by others that a woman could

effectively lead an information technology department existed, and the co-narrators

experienced a lack of trust by others concerning their credibility as the CIO.

Shakeshaft's (2006) review of the recent literature regarding educational leadership roles

found continued "devaluation of women, … women continued to have to prove

themselves more than men, … sexist attitudes, … [and] negative attitudes and practices

toward women aspiring" (pp. 500-501) for educational leadership roles. Acker and

Webber (2006) found "there are certain values and styles commonly associated with men

that can be easily discerned in today's universities, such as competitiveness, success,

individualism, hierarchy and assertiveness" (p. 486). Sanders (2005) review of the

research indicated the culture of computing is male-dominated with the "hallmarks of the

male-computing culture [being] invisibility, exclusion, condescension, hostility, [and] an

emphasis on speed and competitiveness" (p. 309).

In addition, the acquisition of male attributes by females and stereotypes toward

age were discussed and concerns of the co-narrators. They confirmed others' findings

related to these areas. Helen discussed deliberately stating her leadership position title as

she was introduced to and met new people. Gardner et al. (1994) found evidence "that

successful leaders, regardless of sex, abide by masculine stereotypes.... Women ...
[often] advocated 'a strategy of assertiveness whereby they deliberately take the initiative
in interaction'" (p. 134). Oakley (2000) states: "The association of predominately
masculine attributes with the attributes of leadership puts women at a disadvantage" (p.
326). Thus women often respond by "either emulating masculine images or downplaying
the feminine aspects of their image" (p. 326). Helen described a friend lowering her
voice. Grace described dressing in a more masculine manner.

Stereotypic behaviors and attitudes by others created experiences for the co-
narrators that led to obstacles. The co-narrators faced many struggles and challenges as a
result of such behaviors and attitudes.

The co-narrators stressed the importance of being recognized as legitimate,
supported, and trusted by their superiors and staff. When this did not occur or it was
difficult to achieve, they perceived these experiences as creating obstacles to their
professional work and advancement. Eagly and Carli (2007) discussed the importance of
legitimizing women's roles and contributions as leaders. Women often lack the "built-in
legitimacy" (p. 157) culturally that men often possess. Bartol, Williamson, and Langa
(2006) found that for women new to the information technology workforce "who tend to
face relatively hostile climates, perceptions that the organization values their
contributions and cares about their welfare appears to be a potential plus" (p. 433) in
retaining these women in their positions. Rosser's (2004) research revealed that "college
and university midlevel leaders," (p. 317) which Helen and Alice could be described as
since they were not part of the executive decision-making body, "are the unsung

professionals of the academy—unsung because their contributions to the academic enterprise are rarely recognized, and professionals because of their commitment, training, and adherence to high standards of performance and excellence in their areas of expertise" (p. 317). Such a lack of recognition, support and trust, especially from superiors, caused the co-narrators to experience struggles in performing their work and pursuing their careers.

Marginalizing experiences caused frustration and obstacles for the co-narrators. The co-narrators described unsupportive experiences in which they had been discounted, ignored, or disrespected. Flynn's (1993) work found higher education still very uncomfortable with women in leadership positions. "We live in a system which supports a white male power structure.... This type of environment is not supportive of women who aspire to leadership roles because of the change it would require of the system" (pp. 120-121).

Another major theme the co-narrators discussed related to experiences that led to obstacles was the importance of education and experience in preventing obstacles from occurring or in overcoming obstacles. These tactics related to others' preconceived notions which resulted in channeling or routing women down certain pathways. To avoid narrowed pathways, the co-narrators discussed proving themselves and building credibility, confirming Katz et al.'s (2004) research that "women in higher education's IT community feel added pressure to prove themselves" (p. 37) to receive the same acceptance as men. Flynn (1993) concurred that women need to prepare themselves and prove themselves more on the job than men in order to be perceived as competent and

gain access to leadership roles. "When females are in leadership roles they are judged more harshly by men and women" (p. 116). Thus, "[w]omen need to perform well on the job more so than men" (p. 119).

The under-representation of women in information technology was discussed by the co-narrators and linked to the lack of appealing pathways for females at young ages and social environments which do not promote an interest amongst young girls to pursue an education and gain experience in technical fields. Wasburn and Miller (2006) confirmed that girls from elementary to high school "have reservations about the seemingly male 'computer culture' as they watch boys utilizing computers for violent computer games and what they see as technology for its own sake" (p. 61). They added: "There is little software that appeals to them. The tendency of boys to monopolize the computers is not being vigorously challenged" (p. 61). Thus, by the time girls must choose careers, they "have less experience with computers and perceive that they are behind" (p. 61) making it more likely they will avoid fields of study related to technology. Katz et al. (2004) concluded "that a potential imbalance in the future IT leader pipeline exists ... [since] nearly a quarter (24.7 percent) of those currently occupying senior-most IT positions plan to leave higher education within the next five years" (p. 61). Katz et al.'s findings also concluded that few women aspire for these top positions due to having to work long hours, only seven percent of senior-most higher education information technology leaders worked less than forty hours per week average, and "the personal commitment required to be an effective CIO, the job's distasteful political requirements, the perceived need for a doctoral degree, and a personal

preference for maintaining hands-on technical work or remaining close to the users" (p. 17). While Alice particularly mentioned working long hours, many of the other findings of Katz et al. were not confirmed by the co-narrators.

The glass ceiling phenomenon was not personally experienced by the co-narrators. They reported, however, indirect or covert practices creating experiences that led to obstacles. Grace described corporate bullying practices that led to a lack of funding often preventing her from succeeding in her professional work. She also mentioned males moving into positions when women were more qualified. Alice and Grace both reported open positions within organizations not being advertised allowing management to covertly fill the position. Oakley (2000) described overt and covert "barriers created by corporate practices ... [such as] the recruitment, retention, and promotion of males over females, especially in jobs that comprise the typical career paths of a future senior manager" (p. 322). Auster (1993) discussed the informal culture of organizations as "one of the most elusive sources of sex bias permeating everyday activities and handicapping women's long-run career success" (p. 55). The informal culture of an organization "refers to values, attitudes, beliefs, and norms cultivated" (p. 55) with the organization: "Sex bias often thrives in the informal cultures [and] ... may appear in the form of exclusion from informal gatherings where pertinent information is exchanged and decisions are made, ... exclusion from business-related social functions, not taken seriously by their male counterparts and patronized" (pp. 55-56). Such experiences have been termed the "chilly climate for women." (p. 56).

Jealousy, isolationism, and tokenism created additional experiences causing perceived obstacles by the co-narrators. The co-narrators described times when others were jealous of their position and their comments or suggestions were ignored. Katz et al. (2004) found women in higher education information technology described isolating situations. One such woman reported that she was the only woman in meetings at her university and stated: "The thing that I found most irritating was that they would not even call on me when I had a question. If they finally did, sometimes they would be a little shocked at the depth of my question" (p. 37). Hewlett, Luce, and Servon's (2008) research found one of the five primary reasons women leave science, technology, and engineering careers was "the dispiriting sense of isolation that comes when a woman is the only female on her team or at her rank" (p. 23). This may lead to job dissatisfaction and frustration resulting in women leaving their positions creating a "loss [for the company that] "is enormous [a]nd of course the pain of lost potential is particularly acute for the individuals themselves" (p. 23).

Auster (1993) discussed "younger female executives in positions of authority complained that men resented them and resisted taking orders from them" (p. 56) as they experienced isolationism and jealousy. Alice and Helen spoke of other males or male staff members resenting them as they acquired their positions. Alice and Grace discussed others' perceptions of them as tokens. One of the "structural characteristics of tokens" (Klenke, 1996, p. 176) is "numerical imbalance" (p. 176), such as being "the only woman in an all men inner circle" (Bower, 1993, p. 94). This was apparent as the co-narrators

described being the only woman in certain situations and meetings. This often created attention to their uniqueness in the role.

The co-narrators' performance was watched more carefully than their male counterparts due to their higher visibility. All three co-narrators were the first woman to fill the role of CIO at their institutions. As unique individuals in their roles, their performance served as examples of women CIOs' performance in general (Kanter, 1977; Klenke, 1996). Grace described being watched and observed by the Deans. Alice described a lack of trust in her ability to lead particular projects. Helen described older faculty critical of her performance as she was the first woman department head in computer science. Observances of being "constantly scrutinized" (Klenke, 1996, p. 176) occurred by the co-narrators. Chliwniak (1997) stated: "as is evident through research, because of the microscope under which women are scrutinized in the workplace they tend to work harder and longer than their male counterparts in similar positions" (p. 83).

Experiences related to the "good old boy network" posed some past obstacles for the co-narrators but few obstacles today. These networks led to experiences of isolationism, intimidation, and unwelcomeness for the co-narrators, and they determined important alliances. Grace made the point that the network is still present but wears a different "mask" today in higher education information technology. Klenke (1996) stated that such networks create "multiple disadvantages for women, including restricted knowledge ... difficulty in forming alliances ... and the glass ceiling effect" (p. 182). "In a 1987 survey of women by Advance Research management Consultants, 'old boy networks' ... were one of the three most cited forms of professional discrimination

against executive women" (Northcraft & Gutek, 1993, p. 224). Catalyst's (2003) study that identified factors holding women back from reaching top positions in corporate leadership in the Fortune 1000 companies still listed exclusion from informal networks as second in rank as an obstacle women encountered.

Many, as confirmed by the co-narrators, perceive the old boy network as lacking in strength as compared to the past. However, many, such as Grace, also discuss a "new" old boy network that still thrives on who you know. This "new" network is the result of "the rise of the Internet community" (Gamba & Kleiner, 2001, p. 102) and contains many of the same elements as the traditional old boy network. The "new" old boy network is embedded in the Internet industry and results from the overwhelming number of males at the top of the "dot com" companies, funded by venture capitalists who are mostly males. It thrives through the Internet by "which companies form, contacts meet, investments flow and deals happen" (p. 102). With a "lack of women in senior management positions and the control by men of the majority of funds available to the industry" (p. 102) this new network may be "younger and hippier than its predecessor" (p. 102), but still largely excludes women.

Other experiences leading to the creation of obstacles for the co-narrators related to personal family commitments or those they observed for friends and staff. Helen expressed concerns regarding mobility and not only finding a position she would be interested in but also her spouse. Katz et al. (2004) similarly found that twenty-three percent of current higher education information technology leaders had a spouse or

partner with a faculty or staff position in higher education and concerns were expressed about the spouse or partner's position limiting one's career mobility.

Grace expressed concerns associated with having a husband and children. Grace was the primary household and childcare provider and agreed with much of the research indicating those responsibilities still fall on women's shoulders. Grace spoke often of struggles faced in managing a career and family and how, when accepting a new position, she has an up-front discussion with her supervisor about the need for flexibility in her work schedule. Scott-Dixon (2004) stated that "[o]ften women have to go through a process of establishing the legitimacy of their workspace and worktime, particularly with children" (pp. 39-40). Bartol and Aspray (2006) discussed research findings indicating that "30 to 40 percent of college women felt that careers in IT fields would be incompatible with raising children [and discussed research indicating] women were likely to think that their work environments [in information technology] do not allow them to put family matters ahead of their work" (p. 402) due to the stresses and often lack of flexibility in information technology work roles.

All co-narrators also indicated that they have observed males assisting their wives more in family care today and consider this a real shift in attitudes and behaviors from past observances and experiences. Men are committing themselves more to caring for children and family and often encounter even more intolerance from others to their commitments as compared to women. Of the women listed on the Fortune 2002 list of the most powerful women in business, approximately one-third had husbands who either part-time or full-time were at home (Eagly & Carli, 2007). Eagly and Carli (2007) also

found "housework is now shared more equally than ever before, but for every hour that men work, women put in about 1.7 hours ... [and while childcare sharing is at an all time high] women still do 2.1 hours of childcare for every hour contributed by married men" (pp. 50-51).

Double-bind experiences created minor obstacles for the co-narrators. Eagly and Carli (2007) discussed prescriptions for female roles and for leadership roles. The "prescriptions for the female gender role stipulate that women be especially communal" (p. 101) by appearing helpful, warm, not overly assertive or dominant. Leadership roles "stipulate that leaders be especially agentic" (p. 101) with styles that are direct, assertive, confident, competent, and which influence others. The co-narrators discussed becoming more agentic over time as they acquired and grew in their leadership positions. This led to some minor double-binds occurring as some expected them to be more communal and others expected them to be more agentic at times.

The co-narrators' perceptions of salary equity were positive. Inequities, creating obstacles, were experienced in past positions. In their current roles as CIOs they stated several times that they were paid very well and had no concerns regarding inequities. Their statements regarding their salaries are disparate with much of the literature. Katz et al.'s (2004) study concluded that higher education information technology leaders are "probably paid less than their industry counterparts" (p. 42) with the females responding to their study "generally earn[ing] less than male respondents" (p. 43). The Campus Technology 2007 Salary Survey (2007) indicated only one-third to one-half as many women in the salary range of $100,000 to $150,000 as compared to men. Above

$150,000, women were in the minority as well. Positions in this salary range are typically CIO or leadership positions in which women are fewer in number. More women than men respondents to the survey reported salaries in the range of $60,000 or less. In the information technology industry nationwide, women still lag behind men from ten to twenty percent in salary, depending on the position (Collett, 2006). In a Gartner, Inc. study, Harris et al. (2007) predicted that if stereotypes and salary inequities are not eliminated by technology organizations adopting a new game plan: "By 2012, 40% of women in the IT workforce will detach from traditional IT career paths and will move aggressively into business, functional and R&D processes" (p. 11), creating an IT skills crisis much worse than anticipated.

The co-narrators shared many experiences related to the creation of obstacles. Although the literature described other obstacles including ineffective promotional policies (Auster, 1993), biased performance-based feedback (Ausejo, 1993), sexual harassment (Glazer-Raymo, 1999), inhospitable cultures (Harris et al., 2007), and power dynamics (Gaskell & Mullen, 2006) the co-narrators did not specifically stress any of these as obstacles. Rather they focused primarily on experiences resulting from stereotypic behaviors and beliefs; lack of recognition, support, and trust; and marginalization. At times, it was difficult for them to revisit some of the experiences and the researcher sensed these experiences reminded them of past struggles they had put behind. However, they took comfort in the fact they had overcome or eliminated the obstacles. The methods utilized for overcoming or eliminating obstacles resulting from certain experiences were many and are discussed next.

Methods Utilized for Overcoming or Eliminating Obstacles

The co-narrators used several methods for overcoming or eliminating experiences perceived as obstacles. The methods were interrelated and often used simultaneously. Strength from support groups such as professional organizations, friends, family, and informal networking with colleagues assisted the co-narrators in overcoming or eliminating experiences resulting from encountering obstacles. Access to such support mechanisms and people is confirmed in the literature suggesting such assistance aids women with overcoming isolationism and a lack of access to information created by old boy networks and marginalizing experiences.

Morrison and Von Glinow (1990) found many methods or remedies used to prevent differential treatment. Among these were "[s]upport groups ... along with the many internal women's networks and community groups for women and minorities ... [that provide] career guidance and psychological support in managing biculturalism and other tensions" (p. 205). Wasburn and Miller (2006) discussed networking as "an empowering strategy that has been successful in assisting women" (p. 66). Eagly and Carli (2007) stated: "One way that women in male-dominated fields can reduce feelings of isolation is by networking with other women... But women should also network with men, given that the more-powerful networks are usually dominated by men" (p. 173). Strength from support groups and individuals and informal networking opportunities aided the co-narrators in overcoming or eliminating obstacles.

Additional methods utilized included individual efforts of perseverance, connecting with others through credibility, and using good communication strategies.

The co-narrators also emphasized a good education assists one in overcoming obstacles as does having the proper experiences, and good general skills. Other methods included adapting one's behavior, aligning decision-making to sound principles, and having the ability to sell and promote one's talents and expertise to superiors. These individual efforts assisted the co-narrators with experiences in which they were able to overcome or eliminate obstacles encountered as they performed their professional work and pursued professional advancement. As Katz et al.'s (2004) research indicated: "Like women in so many male-dominated fields, women in higher education's IT community feel added pressure to prove themselves" (p. 37) and build credibility. Bashaw (2001) confirmed this as she cited Cott (1987): "[W]omen professionals confront similar problems: the battle for 'professional credibility' and the need 'to outperform men in their rigor and standards'" (p. 162). The co-narrators confirmed this as they worked hard, long hours and proved themselves to others to gain recognition, respect, and trust. Being credible in others' eyes helped the co-narrators, and especially Alice, deal with not only formal communication channels but informal ones as well. Alice specifically discussed staff's perceptions of her lack of credibility as they performed hurtful destructive actions, made comments, and spread rumors at her institution as she acquired the CIO position. K. A. Johnson (1993) discussed informal channels of communication, the "grape-vine" (p. 135), in which "information tends to travel much more quickly" (p. 135). Such information may be rumors which "have no basis in fact and are often destructive" (p. 135). Building credibility and proving themselves assisted the co-narrators with refuting untrue "grape-vine" communications.

Having excellent communication skills assisted the co-narrators as they overcame obstacles. While research regarding the use of communication skills as a method of overcoming obstacles is rare, K. A. Johnson (1993) stated "[c]ommunication skills are the key to success for women who are seeking jobs, promotions, or more recognition for their vital roles in organizations" (p. 126). She expanded on this by clarifying that historically the male communication style has been considered "more appropriate for leadership positions. Women need to ... employ either style [male or female] when the situation demands, ... and put forth more effort than men, if they are to achieve high levels of policy influence" (p. 138). The co-narrators utilized their communication skills to effectively address their professional work and advance their careers.

All co-narrators also discussed working for women leaders or their perceptions of other women leaders striving for power and seniority. In their experiences, these women went to the extreme in proving themselves and building credibility as they became as difficult as or more difficult to work for than males. Such women are often described as "queen bees" (Messmer, 2003, p. 2) implying they achieved their position the hard way and, in turn, they are out to make it hard on everyone else. Eagly and Carli (2007) stated: "Because women in senior management are rare, particularly in large corporations, they very often lead in much the same way as their male counterparts do" (p. 133). "Some women are extremely autocratic" (p. 134), having learned their leadership skills from oppressive male supervisors or counterparts.

The co-narrators also pursued educational and professional development opportunities to assist with credibility, perseverance, and self improvement in order to

prevent or overcome obstacles. Eagly and Carli (2007) discussed the importance for women to feel authentic in leadership roles and not accept values or exhibit behaviors that create discomfort or make one act unnaturally. Women face more complexities as leaders due to other people's perceptions that women are not as "leader-like" (p. 173) as males. Alice stressed several times the importance to her of being herself. Grace discussed being uncomfortable in several double-bind situations where she tried to dress differently or was told to fire someone without giving them a chance. Helen described an experience where she was told to implement a campus-wide program with which she did not feel comfortable. The co-narrators' perseverance and efforts to build credibility assisted them in gaining trust and establishing to others their knowledge, authority, and legitimacy in their CIO roles.

Another theme that emerged from the topic of methods utilized for overcoming or eliminating obstacles was enlightenment. All three co-narrators expressed some type of experience or series of experiences that led them to suddenly realize they needed to readjust or change their approach or action regarding certain situations. Enlightenment is described by Fields, Nash, and Hauck (1951) as provocative change "evidenced by the emergence of new patterns of thought and new areas of readjustment and investigation" (p. 433). This readjustment in how they approached certain situations allowed them to move on or not worry as much, freeing them from having particular burdens on their shoulders. Such burdens often occur for women due to women being more sensitive, caring, and concerned about building more effective trusting relationships. Dawson

(1995) found women to be "more sensitive and caring" (p. 68) than men in management positions. Enlightenment assisted the co-narrators with new approaches.

Selling one's talents and expertise to others was another method of overcoming or eliminating obstacles for the co-narrators. Helen discussed being more aggressive in communicating with her boss about what she was accomplishing. Grace mentioned the need to sell her talents and expertise better to those above her in order to move up the organizational ladder. Alice mentioned building credibility with her staff by demonstrating her knowledge and skills to them through involvement and good decision-making. Selling one's talents, knowledge, and expertise assisted with advancement and changing perceptions that women cannot be leaders. McLucas (1999) discussed how one should "put together a marketing package for potential employers" (p. S15) with which a person sells themselves to others as an advertising agency might promote a particular brand. Steen (1999) encouraged the development of a "career development strategy ... [that is] like producing a successful product" (p. S6) that markets the person's skills and expertise. This contrasts with the fact that many women are uncomfortable talking about their strengths and abilities (Eagly & Carli, 2007). Women who self-promote are often seen as "lacking feminine niceness" (p. 168) or as having less confidence. Ramsey and McCorduck (2005) found that "women desperately need training in how to promote themselves effectively, how to get over undue modesty about 'Brand Me.' At the same time, their male colleagues need training to recognize such self-promotion as appropriate to the field, and not some woman's outrageous 'aggressiveness'" (p. 13). Grace specifically mentioned she was not good at selling herself and realized she needed to

promote herself to others for her to be known within the organization and to have
advancement paths comparable to those of men.

Many of the co-narrators' methods of overcoming perceived obstacles correspond
to those used by four women CIOs recently interviewed by Brandel (2007). Three of the
women were from the corporate world and one was from higher education. Some of the
methods of overcoming obstacles they found effective were communicating well with
one's supervisor and family about any accommodations needed to deal with varying
workloads at varying times, finding a role model or mentor to work with, getting
involved with formal or informal networking groups, and becoming enlightened that one
cannot have it all (Brandel). Such enlightenment was described by Monique McKeon, of
the Chubb Corporation, in an interview with Brandel as meaning "making choices that
are true to your priorities and understanding the trade-offs" (p. 31).

The literature also discussed other methods of overcoming or eliminating
obstacles often used by women climbing the career ladder. One was performing beyond
expectations: women "often have to work harder, have more expertise, and have better
interpersonal skills than their male counterparts … they have to be exemplary" (Auster,
1993, p. 56). Another was having access to formal mentoring programs sponsored by the
organization: "organizations [are] implementing formal mentoring programs to help
women along the leadership path" (Klenke, 1996, p. 183). These methods were not
specifically cited by the co-narrators as methods used for overcoming or eliminating
obstacles. The co-narrators relied primarily on strength from support groups and

individuals, perseverance, and connecting with credibility as they worked to maximize their opportunities and minimize the obstacles and struggles.

Minimizing experiences that can create obstacles for themselves or others was also discussed by the co-narrators as a method of overcoming or eliminating obstacles. Just as the co-narrators often wished others had helped them more, their leadership styles and interpersonal skills recognized the transformational nature and potential of their staff as they worked to minimize struggles for them through professional development, career path opportunities, mentoring, recognition of staff excellence, and being fair to males and females. Rosener (1990) characterized this as a "second generation" (p. 120) of managerial women who succeed by using skills and attitudes "developed from their shared experiences as women" (p. 119) rather than trying to be successful by emulating male styles.

The co-narrators found successful methods they could use for themselves or ways in which they could assist others in overcoming or eliminating experiences that created perceived obstacles for their professional work or advancement. Many of the methods discussed confirmed those revealed in a Catalyst (2003) survey of women executives from the Fortune 1000 companies as ways to get ahead. These included: "successfully managing others, developing a style with which male managers are comfortable, having recognized expertise, and seeking out difficult or highly visible assignments" (p. 6).

Personal lives took a toll as the co-narrators found methods to be successful. As mentioned previously, women in primary leadership roles in organizations are more likely than their male peers to be single, separated, divorced, widowed, or childless.

None of the co-narrators were in their original marriage *and* had children from that marriage. Klenke (1996) found in a review of the literature that "women with a career-primary orientation ... are willing to forego marriage and/or family to reach for the top" (p. 180). Organizations often have certain expectations of staff. "A traditional organization is not tolerant of those who do not fit within the expected structure, norms, or ceremonies surrounding the institution" (Chliwniak, 1997, p. 32). Parasuraman and Greenhaus (1993) found "women managers are less likely to be married and are more likely to be childless than their male counterparts" (p. 198). Fagenson and Jackson (1993a) wrote: "[W]omen are often faced with a choice between career, marriage, and children" (p. 318) and those that do choose to have a family often have "difficulty managing their families and their careers. The problem largely emanates from careers being designed around men's life stages and men's orientations" (p. 318). Women leaders and those seeking leadership roles must prioritize goals and many times marriage and children are not part of the picture. Many sacrifices are made by women as they pursue leadership positions.

A variety of methods were used by the co-narrators to overcome or eliminate experiences perceived as creating obstacles. These methods proved effective as they overcame the experiences leading to obstacles and are currently successful in their roles as CIOs.

Genderedness and Occupational Jurisdiction

The co-narrators expressed that higher education information technology contained some elements of genderedness and occupational jurisdiction. Building upon

previous comments, the co-narrators expressed concerns that women still had a difficult time being accepted into male-dominated positions, often the technical positions, even with specific efforts the co-narrators had made to integrate more women into such positions. Male cliques, "good old boy networks," lack of acceptance, and eagerness of females to move out of the more male-dominated positions created difficulties in the integration process. Alice and Helen specifically gave examples of women integrated into male-dominated positions leaving these positions due to dissatisfaction or unhappiness. These examples connect with Lemons' and Parzinger's (2007) work that "[o]nce in the field of IT, however, the women may not find the male culture of technology as attractive.... Because men dominate IT, male values create the standard (androcentrism). Females entering this arena may be viewed as a deviation and inferior, causing dissatisfaction for IT women" (pp. 91, 96). They also found "many women in IT hold higher non-traditional gender schemas, [and] they may well pursue tasks that have traditionally been assigned to men" (p. 97). Women having greater non-traditional gender schemas may have more sensitivity toward women's rights and privileges. This research may explain some of the job dissatisfaction and frustrations such women experience resulting in their leaving the position. Jacobs (1989) also found male resistance to women co-workers resulted in women leaving the job.

All co-narrators made comments on their perceptions that males enjoy the technical work more than females do and all expressed comments about the biases in the socialization and educational processes of introducing young boys and girls to technology. Alice and Grace both discussed orienting girls toward technology in ways

that interested girls more, for example, focusing on girls' interest with fashion or their nurturing interests in fields such as nursing. As discussed earlier, several reasons for the under-representation of women in computing may be offered. Barker and Aspray (2006) found several primary reasons. One reason was that in most schools "[c]omputing courses are an elective rather than required, and girls are less likely to enroll in these preparatory courses" (p. 43). Thus, boys dominate the courses creating an additional obstacle for girls. Another reason is that elementary teachers, being primarily female, are often more "computer-challenged" (p. 44) which "reinforces among students the idea that females are not good at computing" (p. 44). They are computer-challenged in that they do not have a strong technical or computer-use background.

Barker and Aspray (2006) have also found some studies suggest that "boys dominate the actual use of computers at school … and at home" (p. 44) and begin such use at younger ages than girls. Additional literature suggests "girls have less positive attitudes, … confidence, … interest, and less experience with computers than do boys" (p. 44). Many other reasons emerged from additional studies suggesting boys are supported more by the home environment toward their interests in computing as compared to girls, accounting for less positive attitudes and less confidence by girls. Studies also suggest peer influences, popular culture, and computer games are geared more toward male's interests and support these interests more as related to computer use and careers (Barker & Aspray). The co-narrators were aware of some of the literature and perceived struggles occurring for girls today. They expressed dismay that fewer women are pursuing technology-related fields of study and work. The perpetuation of

higher education information technology as a gendered organization would continue as long as there was a lack of females going into educational fields of training related to technology.

As the need for well-trained professionals in information technology increases, many of the fastest growing occupations during the next decade are in the information technology fields. "Chronic shortfalls in the supply of excellent IT professionals have been commonplace for more than two decades" (Bartol et al., 2006, p. 421). Increasing the number of women qualified for such positions and good organizational work-life policies would alleviate some of the shortage and draw upon a rich talent pool. A rich talent pool exists in many women within organizations who often get penalized and set back in their careers when taking time to raise children (Hewlett & Luce, 2005). Hewlett and Luce found "as many as 35% of the women ... surveyed report[ed] various aspects of their organizations' cultures that effectively penalize[d] people who take advantage of work-life policies" (p. 52). And interestingly, "men encounter even more stigma" (p. 52) and penalization for taking advantage of such company policies. The co-narrators discussed their perceptions of flexible work schedules and work-life benefits provided for family commitments. Generally, their perceptions were positive.

Hewlett and Luce (2005) discussed women often taking "an off-ramp at some point on their career highway" (p. 44) as they leave work voluntarily to care for children or elderly family members. "There seems to be a key moment in women's lives—in their mid to late thirties—when most head for the door" (Hewlett et al., 2008, p. 23). Most of these women intended to return to the workplace. However, according to Hewlett and

Luce's research, "only 74% of off-ramped women who want to rejoin the ranks of the employed manage do so" (p. 46). The women face having to take part-time rather than full-time positions and a reduction in salary. Women need to carefully consider taking such actions as "[o]ff-ramps are around every curve in the road, but once a woman has taken one, on-ramps are few and far between—and extremely costly" (p. 46). Illustrating Hewlett and Luce's off-ramps and on-ramps conceptualization, Helen provided a specific example of a woman who had been working three-quarter time to be home with her children more and then later came back full time into a managerial position. Grace also discussed personal past experiences in which she was provided flexibility. Overall, however, the co-narrators had few women staff that requested and were given flexible work schedules.

The lack of a gender friendly culture was discussed as perpetuating genderedness. Grace provided several examples, having worked in more locations around the country than Alice or Helen, of parts of the country that accepted women into information technology leadership roles more readily than the more conservative Midwest. Appleton (1995) stated: "All cities are patriarchal ... [and] each city has a distinctive relationship between its political, economic, and familial systems that constructs its gender regime, its particular version of patriarchy (pp. 44, 46). Hewlett et al. (2008) found in their research that one of the five reasons for women leaving science, engineering, and technology careers was "the hostility of the workplace culture drives them out" (p. 23). A recent study by the organization Women in Technology International (WITI) found that seventy-five percent of the 2000 women respondents would encourage other women to

enter the technology field but only fifty-two percent indicated their organizations offered

a favorable, inviting climate for women (Perelman, 2007). The lack of an inviting

climate led to fewer opportunities for the women to lead projects, become more involved,

and led to their questioning if they would continue to work in such an environment. An

uninviting environment can also result from elements of occupational jurisdiction.

Elements of occupational jurisdiction hindering the use of the female talent pool

were also discussed by the co-narrators. The use of and authority over organizational

artifacts (Bechky, 2003) such as "engineering drawings ... [and] machines" (p. 748), or

in this study technical artifacts such as servers and wiring closets, symbolized the work of

the more technical staff, generally males, in each of the co-narrators' organizations. The

co-narrators discussed, for example, technical staff having access to servers, authority

over others as they had the rights to set up authentication allowing others access to

certain information systems, and access to wiring closets for completing physical

connections. Each of these technical roles required certain equipment, certain hardware

knowledge, certain software knowledge, access, tools, and keys to physical and virtual

spaces that many others did not have. Those in less technical roles had expertise in

software or application use and assisted users of such software in learning and using it on

a daily basis. The user support staff had more people skills or soft skills, as the co-

narrators discussed. The artifacts associated with the technical roles were viewed as

more difficult to acquire and established occupational boundaries elevating the staff in

these positions to more powerful roles often providing them more legitimacy.

Occupations composed of more males are often given more status and legitimacy. "[T]he composition of an occupation has a strong influence on its success in gaining jurisdiction.... [P]ower results from the race, gender, or class composition of the occupation" (Bechky, 2003, p. 722). If certifications, educational degrees, specialized hardware or software training are needed to perform the functions of the occupation, perceptions of those positions are that they are powerful. Halpern (1992) provided the example that "accountants established superiority over bookkeepers early in the 20th century" (p. 994) as those two "neighboring occupations" (p. 994) competed for legitimacy. Abbott (1981) discussed the "bases of status" (p. 820) within professions. One element that contributed to higher status determination was "specialized skill that create[d] the power" (p. 821) associated with the position.

In most cases, males filled the technical roles at the co-narrators' institutions with the exception of a few females. The gender power of the technical occupations, accompanied by power through specialized knowledge and artifact access, allowed technical staff, those with specialized hardware and software knowledge that provided others with access to information networks, the power to accept or not accept the integration efforts the co-narrators attempted of placing more women into such positions. Johnson's (2006) points in regard to technology and artifacts are significant: "[T]echnology is not just artifacts.... [but] is better conceived as a system comprised of artifacts, social practices, and systems of knowledge. On these accounts, artifacts are inseparable from the social meanings and practices associated with them" (p. 2). Johnson discussed a "co-creation thesis—gender and technology co-create one another. [If one

agrees that] technology is socially shaped; gender patterns in society can therefore be reproduced in constituting technology. At the same time, technology shapes society: if gender has been coded into a technology, that technology may reinforce gender patterns" (p. 3). Such a thesis could be applied to many elements of this research leading to simple yet enormously complex interconnections.

While the co-narrators seemed hesitant to discuss elements related to genderedness and occupational jurisdiction, elements of these were readily apparent as they discussed their organizations. The hesitancy may have been due to a lack of familiarity with such concepts or a lack of willingness on their part to admit such dynamics were occurring in their organizations.

Conclusions

Many efforts have been and are being made by organizations, special interest groups, and other agencies to increase women's interest and participation in information technology. For example, several granting agencies, such as the National Science Foundation, have made efforts to fund research and programs that promote raising young girls' awareness about careers in information technology fields. Other organizations, such as the American Association of University Women, sponsor scholarships for women pursuing study in information technology or leadership roles. Despite such efforts, several sustaining questions remain. These questions are offered for consideration in this section.

The lack of females' participation in technical fields of work has great implications: "At a time when information technology pervades our work, education,

health, entertainment, and safety, and when the U.S. Department of Labor is predicting

that more than one million IT jobs will be added to our workforce by 2014" (National

Center for Women & Information Technology [NCWIT], 2007), females will be valuable

resources who must participate in innovating and advancing information technology.

Unfortunately, the future looks bleak.

So bleak, in fact, that Gartner, Inc., one of the leading research groups in the

country, has blatantly stated:

> [G]ender diversity in IT is in crisis. The percentage of women in the IT
> workforce has dropped to around 25% and is continuing to decline. This has
> crystallized and intensified our concerns and has convinced us that changing the
> game is the only way out…. Achieving gender diversity has not and cannot be
> achieved by "getting more women into the game." Organizations must change
> the game…. To design state-of-the-art diversity into teams, opportunities and
> work processes" (Harris et al., 2007, pp. 1-3).

Whether opportunities for "getting more women into the game" will be effective

or not, the facts point out that this is not occurring. While girls in K-12 educational

institutions often have more math education than boys, "only one percent of females

taking the SATs in 2006 indicated an interest in pursuing computer and information

sciences as an intended major" (NCWIT, 2007). While women received about sixty

percent of all undergraduate degrees in 2006 at American institutions, women accounted

for only eleven percent of the bachelor's degrees in computer engineering, fifteen percent

in computer science, and were a minority in other technical fields except for chemistry,

biochemistry and biology. Women were only eighteen percent of the new tenure-track

faculty hires in computer science in the 2004/2005 academic year. In computer science

for 2007, only sixteen percent of assistant professors were women, twelve percent of

associate professors, and ten percent of full professors. Currently in the private sector, women hold fifty-six percent of the professional workforce positions in the United States, but only twenty-seven percent of professional computing-related positions. Currently fifteen percent of CIOs in Fortune 500 companies are women and five percent of CTOs (Chief Technology Officers) in those same companies are women (NCWIT, 2007). According to Bartol and Aspray's (2006) research: "It is apparent that women are choosing not to major in IT-related fields and not to enter the IT workplace in representative numbers" (p. 377). Can the male hegemonous environment of the educational system and its institutions embrace change in order to provide females with equitable opportunities, encouragement, and a less hegemonic learning space especially in the information technology field?

Some might depict this research as having a central irony: higher education—the university, a social institution known for excellence in education, fostering various forms of thought and freedom of expression, and providing critical social inquiry—lacks a critique and understanding of itself as it continues to hegemonically support the dominant patriarchal paradigms. Being a pivotal institution in society, higher education's lack of female representation in positions of power and authority has "wider and more serious resonances for issues of equity, social justice and participation in public life. Currently, higher education functions as a structure for reproducing power relations, rather than challenging them" (Morley & Walsh, 1996, p. 4).

One method aiding the reproduction is through the conspiracy of silence (Hansot & Tyack, 1981; Shakeshaft, 1987) or knowledge management (Ortiz & Marshall, 1988)

allowing society and organizations to hide or escape from facing the facts. Felice

Schwartz (1995), a founder and former president of Catalyst, stated in a speech given at a

women's conference:

> We're dead in the water if we continue playing by the rules of men; if we
> continue not to recognize that we are the most valuable underutilized resource in
> the country, ... [and] if we don't join hands and break the conspiracy of silence
> that exists—the conspiracy of silence about issues affecting women, about the
> corrosiveness of the environment in corporations and professional areas for
> women, about the extraordinary attrition of women that is a result of barriers....

The National Center for Education Statistics breaks down gender only in certain

data categories, not all (Shakeshaft, 2006). For example, "there are no national figures

documenting the number and/or proportion of women superintendents in the USA" (p.

498). The annual Almanac issue of *The Chronicle of Higher Education*, which compiles

a variety of statistics gathered from higher education institutions in the United States, first

listed Employees in Colleges and Universities by gender in the 2002-2003 issue.

Accurate records of data are very important. Incomplete information on the

representation of gender in educational institutions allows one to believe that women are

flourishing in administrative positions. Conversely, by not having data available or being

able to cite it, the task becomes much more difficult to identify and remedy the lack of

women in administrative positions (Shakeshaft, 2006). These same concerns are even

more critical for racial minorities. One must also be careful to understand how general

categories are defined. For example, "administrative" positions often include a wide

range of positions such as food service managers, lodging managers, and up to top

executives in institutions. Should higher education institutions have an enhanced degree

of accountability in terms of opportunities for women and minorities for leadership positions and national affiliations in the reporting of such?

The co-narrators are pioneering women missing in the data. They each endured many struggles and obstacles over the course of their career development and acquisition of their CIO positions. In the hegemonous American culture, they are still considered outsiders within, appearing to be accepted at their institutions. Each is devoted to supporting the use of technology for teaching and learning. The higher education environment offers many with professional skills in non-teaching areas opportunities for meaningful work, with those in such professions often motivated by and grounded in improving teaching and learning. Positions in higher education information technology are excellent examples of meaningful work and opportunities for women.

The co-narrators stated several times that they perceived the cultural climate changing in higher education information technology to be more accepting of women in technical and leadership roles. One questions if it is too late, at least in the near future, as women's interests in pursuing education and careers in the technical fields continue to decline. How can another cycle of male-domination in technical positions be avoided and more women be recruited into information technology fields changing the perceptions of careers in information technology to be more positive?

Yet while some research is starting to show that the gender gap has narrowed for women in information technology (Cohoon & Aspray, 2006), intensified efforts will be required to increase the number of women entering and remaining in technical fields of study and information technology positions. Conversations regarding women

information technology leaders need to focus on the "obstacles, pressures and trade-offs women face at every stage of their careers. Women are achieving professional successes that were possible only for men just a short time ago ... [but] at the same time, the challenges women face in the process of earning their success are very real" (Center for Creative Leadership, 2008). Challenges and opportunities may change over time.

Morrison et al. (1995) stated: "Like almost everything else, obstacles are likely to change over time, and what was seen as most critical just a couple of years ago may not be judged so important today" (p. 11). Alice and Grace discussed the need for neutralization of the information technology field in order to give women more opportunities. However, Eagly and Carli (2007) stressed: "Women should not wait to seek leadership until organizational and cultural changes have created a level playing field. Women who initially break into male-dominated roles face special challenges, but when they are successful, they can foster progressive organizational change that creates greater fairness for the women who follow in their footsteps" (p. 181). In what ways can current women higher education information technology leaders foster change for women and better assist women seeking similar leadership roles?

Perceived opportunities and obstacles exist in relation to an individual's cultural, political, and social values and background (Ramsey & McCorduck, 2005). The co-narrators in this study provided their perspective on opportunities and obstacles they had faced in achieving their CIO roles. Overall, they described their experiences as very positive as their perceptions were they were accepted into their roles with few problems. Even though they spoke of many painful experiences they had endured, they continued to

be very positive about their experiences. How can women in higher education information technology be encouraged to persevere, enhance their strengths, and expand their knowledge and experiences in order to acquire and retain leadership positions?

Professional development and networking with colleagues provided the co-narrators with experiences that led to opportunities. The co-narrators gained vital expertise in content areas that enhanced their leadership skills. Alice mentioned leadership seminars she attended that provided her with crucial guidance. Helen discussed expanding into the computer science field by attending professional development during the summers. Networking with colleagues by means of several professional organizations and state leadership groups assisted the co-narrators in building credibility and becoming involved in many initiatives. What methods could be used to allow more women in higher education information technology access to professional development, to provide encouragement to attend, and to participate in networking opportunities?

Many may read this study and wonder how the co-narrators could continue to be so positive. Many of the findings of this study confirm findings from other similar studies researching opportunities and obstacles encountered by women in other roles. The co-narrators had "survived" and had "made it." They were at the top of their higher education information technology organizations and perhaps that is why they could look back and be quite positive about their experiences. Those women not at the top may have quite different stories to tell. Being a part of the higher education environment may also have influenced their attitudes and viewpoints as it is a rather unique environment

focused on learning and academic traditions, but yet flowing with undercurrents of a corporate business environment. Such undercurrents create unpleasant political environments where people face many struggles on a daily basis and, at the end of the day, are simply thankful they survived. Should women in higher education information technology executive positions be satisfied with survival, or should they, in fact, be able to achieve a high degree of job satisfaction?

Organizational support programs assisting those with families and/or children were perceived by the co-narrators to be positive for staff. Grace stated her use of such programs provided opportunities for her career development. The literature has also shown such programs to have a positive impact on women acquiring and maintaining professional positions. How can organizations be encouraged to continue and enhance current work-life programs while developing new programs that assist both women and men with families or those in need of other types of programs, while being careful not to induce hostilities toward such?

Hard work and long hours characterized the daily path to the co-narrators' successes. Learning the ropes, becoming enlightened, and developing that "business smartness" aided the co-narrators in their roles. Each had different backgrounds and experiences that influenced the pace of their learning the many hegemonies of higher education information technology. One of the key influences was mentors.

Mentors and support from significant individuals in their lives were very important to the co-narrators. Whether assisting them with experiences that created opportunities or helping them with methods of overcoming obstacles, these people were

and still are crucial to their continued success. As pioneers, they understood the struggles a person can face and because of the value their mentors brought to their lived experiences and their career development, the co-narrators all spoke of being mentors to others and taking strides to minimize situations creating obstacles for others. What mentoring initiatives can be developed and effectively utilized to assist those pursuing non-gender congruent or other positions?

Change is needed. The American educational system and its institutions need to provide both males and females with equitable opportunities, encouragement, and a less hegemonic learning space. Higher education institutions should be more responsible for providing opportunities to women and minorities for leadership development and should be required to accurately and thoroughly report statistics related to those in leadership roles. Ways must be found to recruit women into information technology fields enhancing perceptions of careers in technical areas. Women leaders need to foster change for other women and assist other women seeking leadership roles especially in information technology fields. Women in higher education information technology need to enhance their strengths, expand their knowledge and experiences, and be encouraged to persevere as they seek and acquire leadership positions. Networking and professional development opportunities must not only be made available to women in higher education information technology but women need to understand the benefits of experiencing such opportunities. Women in higher education information technology should not be satisfied with mere survival but need to enjoy their work and experience job satisfaction. Organizations can assist women by offering more work-life programs,

encouraging and supporting staff in not only their work roles but also their family roles. And finally, mentoring initiatives and programs need to be developed and implemented to serve those seeking leadership roles as well as others.

Recommendations

Several recommendations can be offered for higher education information technology organizations as well as for individuals considering the pursuit of careers in such organizations or those already in such careers. The following initiatives may address the "sustaining questions" of this research.

Institutions

For institutions and organizations, efforts that lead to attempts to take a stance of gender neutrality are fictional, illusory actions (Glazer-Raymo, 1999). Such efforts or actions sustain rather than correct flaws in policies affecting women. While women may have a higher rate of employment than males in higher education, they have less likelihood to advance. "Women, who are largely powerless within the university [and information technology] organization, must rely on male leadership to bring about substantive changes in their situation" (p. 199). Such changes relate to "cultural, attitudinal, and structural constraints" (p. 198) encountered by both men and women.

While many have addressed the issues related to cultural constraints and hegemonies, this researcher will not attempt to provide specific recommendations related to the many aspects of familial, political, and societal hegemonies. Rather, this research provides general recommendations to reduce constraints and assist with establishing

opportunities for women in higher education information technology organizations, as based on the results of this study:

- Establish institutional mentoring programs for all staff in higher education— particularly women and women in information technology. Educate mentors so they understand their roles and, as the co-narrators suggested, realize they should not solve problems for protégés but simply advise and counsel, letting the protégé determine how best to resolve the situations. Provide incentives for mentors, such as release time from normal job duties, and create a high visibility to such programs.

- Discourage all stereotypic behavior, educating those who practice it on the harmful effects of such behavior. Provide effective, confidential channels for reporting such behavior. Provide effective in-service programs that motivate staff and others to refrain from such behaviors.

- Develop an organizational culture of inclusiveness, trust, support of others, respect for others, and lacking marginalizing experiences or situations implying tokenism toward others. Strive to place qualified women in visible positions and celebrate their successes as well as men's successes. Empower others rather than being powerful over others. Provide professional development for managers and executives on the effects of marginalizing others and how to recognize when others are being marginalized. Strategies might include role playing, simulations, and round table discussions.

- Encourage women to acquire the knowledge and skills for technical positions, publicly recognizing and legitimizing women leaders, validating their credentials and

their qualifications and skills. Recognize successes through the use of awards, announcements, nominations, public relation outlets, and community recognition.

- Provide flexible work opportunities for both men and women, recognizing differences exist in the life situations each face. Such opportunities might include part-time work roles having greater responsibilities and better salaries, flexible hours for full time jobs, and providing employees with significant family responsibilities more time to establish and prove themselves for promotional opportunities (Eagly & Carli, 2007). Educate the organization's staff regarding the purpose of flexible schedules so as to avoid discontent and dissatisfaction from those not needing such programs.

- Develop a gender friendly and family friendly organizational culture that encourages women to stay connected to their work, to pursue professional development, and to remain dedicated to the organization during the years of childrearing, elder care, and other family responsibilities for which they continue to have the majority of responsibility. Offer on-ramps and off-ramps such as flexible work schedules, childcare programs, job sharing, and absence leaves that provide a variety of options nurturing ambition and reversing the brain drain (Hewlett & Luce, 2005). Develop an understanding of the value of keeping and building upon the knowledge and expertise of women along with understanding the stress they often face of juggling so many responsibilities. Promote an organizational culture in which women thrive, not just survive.

- Develop and promote networking opportunities for women with women and women with men. Promote formal and informal communication channels that will assist

women in building relationships with others both inside and outside of the organization (Valerio, 2006). Set aside funding for travel and professional membership fees. Work with or sponsor community or professional networking organizations that may bring local individuals together.

- Provide organizational support and resources for professional development opportunities. Develop a system of accountability in which managers and supervisors would be held accountable for staff having opportunities for professional development. For example, include a trajectory component related to professional development of staff, based not only on need but also equity, in the annual performance reviews of managers and supervisors.

- Review and maintain best practices related to affirmative action programs. Encourage diversity through actions and do not diminish its importance in the work environment. Perform self-studies, making the results widely known. Take actions based on the results of such studies. Gather information and prepare annual reports inclusive of equity measures and best practices. Share data amongst similar institutions in order to learn from others best practices and innovative approaches.

- Develop effective programs to integrate women into traditionally male-dominated positions. "Ensure that diverse opinions and ideas are part of decision making, problem solving and other processes" (Harris et al., 2007, p. 14). Base such programs on interests from women, mentorships, and readiness of males for the acceptance of a diverse work group. Educate people before and during the process working with

those struggling with acceptance and those creating obstacles so that a level of readiness can be attained. Encourage visibility of such mixed work groups.

Such practices and organizational cultures need to be supported by those in the power positions at the institutions. However, these are small efforts when the real changes that are needed relate to those cultural, attitudinal, and structural changes (Glazer-Raymo, 1999) needed in society.

Individuals

Recommendations can be made for women considering the pursuit of careers in higher education information technology organizations or for those already in such careers. What will be the appearance of the future CIO? Based on this study, the future CIO will look very distinctive.

She will develop a wide-range of personal skills and strengths, including excellent communication and listening skills. She will take initiative and explore new learning and leadership opportunities. She will develop excellent leadership skills that include skills considered typical of male leadership styles as well as female leadership styles. Women leaders will find a leadership style that "fits" them, serves the organization, and is comfortable for their staff. Styles will be a mix of agentic and communal elements that complement each other while focusing on the mission of the institution yet caring about the individual. They will open doors for other women by providing mentoring opportunities and programs, helping to develop pathways that provide flexibility and opportunities. They will "look for opportunities to mentor" (Zastrocky, 2007, Slide 22)

others and work to minimize obstacles and maximize opportunities for those pursuing careers in information technology.

As opposed to being viewed as a technical person, the woman CIO will be viewed as a "business executive assuming the technical post" (Brown, 2006, p. 48). She will have knowledge of "what concerns the [president of the institution] and what major challenges the administrative team is facing" (Zastrocky & Schlier, 2000, p. 59). She will also have "an understanding of the changes that are expected in teaching and learning, ... research and community initiatives" (p. 59) and other important issues. She will be a "full-spectrum contributor" (p. 53) to the institution and will provide leadership in revisioning the institution's mission to focus on serving others. A perspective of serving becomes "transformative in that the communicative process seeks to continuously question the very frameworks or schemas that guide our lives" (Fine & Buzzanell, 2000, p. 156).

Women leaders will communicate with family members letting them know their support, encouragement, and guidance are needed as professional work and advancement are pursued. Developing their knowledge, having a good education with some computer science background, and wide-ranging experience that provides flexibility and comprehensiveness in the information technology field will be important to them. They will have developed of strong foundation in computing and familiarity with applications and tools. The future CIO will realize that "[c]areer progression in IT is rarely a simple linear movement ... [up the career ladder, but rather a progression through] lattices, in which workers advance through moving laterally to other divisions within and outside

IT" (Chapple, 2006, p. 461). Klenke (1996) states: "[L]eadership education, training, and development must be enhanced by lessons learned from experience" (p. 249). While experience is valuable for future leadership opportunities, the future woman CIO will also be cautious as "moves become lateral and 'fit' becomes a euphemism for bias ... [being careful not to get] pigeon-holed in jobs that [have] no access to the top" (Auster, 1993, p. 55).

The future CIOs will "respect people's time, priorities and families [realizing that a good] work-life balance will enhance engagement and refreshment" (Zastrocky, 2007, Slide 23) of themselves and others. They will build a strong supportive family foundation for their children offering encouragement and guidance, avoiding gender bias while developing an understanding of the hegemonies existing in society and culture. Developing an understanding of stereotypic behaviors in order to discourage such behaviors and attitudes in others will be important.

The future CIO will join professional organizations and network with other colleagues in order to gain professional development opportunities, build trust, and establish credibility with others outside of the immediate work environment. She will get involved in informal networks to help prevent isolationism. Recruiting opportunities within the organization as well as from outside the organization will be considered when planning for future promotional opportunities.

She will support, recognize, and trust those who have earned it, avoiding marginalization of individuals. The future CIO will "encourage the sharing of power and information" (National Center for Women & Information Technology, 2007, p. 18) with

others as this will be very important to the CIO for having a strong supportive staff. The future CIO will understand that "the competition for qualified IT talent will be global" (Zastrocky, 2007, Slide 19) and will value their staff.

The future CIO will be "business smart" having developed an understanding of organizations and covert practices, maintaining their awareness of hidden processes, motivations, and gatekeepers that create obstacles. Female CIOs will accept the challenges related to working in a traditional male-dominated position by being strong and ready to tackle the overt and covert obstacles that might be put in their pathway. They will be astute to not create such obstacles for others. They will adapt their behavior as needed to get past certain obstacles or gatekeepers while maintaining their values and morals. They will "influence other gatekeepers to become involved in transforming hierarchical and/or patriarchal structures and norms" (Chliwniak, 1997, p. 80).

The future CIO will persevere and work to build credibility, communicating one's strengths and staff's strengths and successes to others. She will "strengthen ongoing IT training opportunities ... and invest in professional development [along with] build[ing] opportunities to transfer knowledge from older to younger workers" (Zastrocky, 2007, Slide 22). She will be consistent and fair to others and base decisions on sound principles and values. She will work to integrate work groups and dissipate the genderedness of information technology positions while understanding the dynamics of personal interactions and occupational jurisdiction that occurs in the technical work place.

The future CIO has a difficult job ahead of her if she takes action and makes efforts to implement real change. The real changes that are needed relate to those

cultural, attitudinal, and structural changes (Glazer-Raymo, 1999) of stereotypes and institutional hegemonies. Understanding the opportunities and obstacles women higher education information technology executives encounter is a beginning step for that leader.

Suggestions for Future Research

Further research is needed to better understand women CIOs in higher education. This unique group of women has dealt with not only the male-dominated environment of higher education but also that of information technology. Giving more women in these roles a voice is necessary to better understand how higher education information technology organizations can benefit from women's abilities and knowledge while providing women career paths and opportunities. Giving more women a voice may also assist with the cultural, attitudinal, and structural changes so badly needed in society.

The three co-narrators have shared their stories and in doing so again took on the role of pioneers. Women in other roles in higher education information technology also have stories to tell of their lived lives. Future research should examine the key element of mentoring practices as well as several other areas. Suggestions for future research include:

- What is the demand for and availability of mentors to women in higher education information technology? Such results would reveal the number of women in higher education information technology seeking mentors. Such results would also reveal numbers of current mentors and potential mentors along with mentors' backgrounds

and sex. Examining current mentoring practices will facilitate the improvement of mentoring activities and assist mentors in being more effective.

- What are the benefits and limitations of having mentors with a strong background in higher education or a strong background in information technology? Such research might reveal if the needs of women are greater related to aspects of higher education or information technology and if women having had mentors found more benefits or limitations to mentors with a strong background in one of the areas versus the other.

- Have different groups (minorities, millennials, X-generation, baby-boomers) of women CIOs experienced different opportunities and obstacles and do they define them differently? Such a study might reveal how differences in the social, political, and cultural backgrounds of the different groups of women are reflected in their definitions and experiences related to opportunities and obstacles. It might also reveal differences or similarities as to methods used to maximize opportunities and minimize or overcome obstacles.

- Are there different experiences related to opportunities and obstacles encountered by women who "work their way up" in the organization versus those coming in at the top? A study of this sort would reveal the differences in opportunities and obstacles between the two paths to the CIO position.

- What causes the acceptance of women CIOs by staff? Is it simply people dying or moving or is there some point where staff resistant to women or men CIOs "cross-over" to acceptance or become enlightened that the person in the CIO role is actually performing well? What causes this? Researching these questions would reveal what

the resistance is and why it perhaps exists amongst staff. Differences might be

discovered in acceptance points of male and female CIOs. Differences might be

discovered related to what causes such acceptance and any differences between male

and female staff acceptance.

- What are the lived experiences of women in other roles in higher education

  information technology? What obstacles and opportunities have they experienced?

  Such studies could focus on different workgroups and the women within those and

  might reveal differences between the more technical and less technical workgroups,

  differences in composition of the workgroups, differences in middle management

  biases, and differences in occupation jurisdiction within or between such workgroups.

- What are the experiences of women CIOs in other types of educational institutions

  (research universities, community colleges, etc.)? Such research would expand on

  this research and lead to an understanding of opportunities and obstacles women

  CIOs have experienced in the other classifications of higher education institutions.

- What are the opportunities and obstacles men CIOs have experienced in their

  pathways to their current positions? Such research would reveal similarities and

  differences to this study's findings and lead to an understanding of differences in the

  many elements previously discussed as they are explored from a male perspective.

- How does the higher education information technology staff evaluate their CIO and

  are there differences based on the sex of the CIO? Evaluations might be facilitated

  through the human resource department using an anonymous, web-based survey tool

  accessed through a public computer lab rather than a person's desktop machine to

further ensure anonymity. The survey might allow for closed and open ended questions and responses related to the CIO's effectiveness, as well as their direct reports' effectiveness, in mentoring staff, assisting with career development, valuing hard and soft skills, and supporting work-life programs. Questions might emphasize support for women and men in technical and non-technical roles in the organization. Such a study would reveal perceptions of staff toward CIOs' leadership effectiveness. Differences might be revealed in responses toward women and men CIOs as well as in responses from women and men staff. It might also help reveal staff's willingness to assist with creating opportunities or their intent on creating obstacles for particular sexed CIOs.

- How does occupational jurisdiction affect the daily work lives of higher education information technology staff? Structuring a specific study around occupational jurisdiction investigation would reveal more detail than this study and provide more insight into artifacts, technical knowledge, and infrastructure access that establish task boundaries, legitimize the work of individuals and groups, and provide these staff with power over others.

- Why are both women and men losing interest in seeking information technology leadership roles? In a Gartner, Inc. study, Harris et al. (2007) found a "shrinking of the talent supply pipeline" (p. 11) from 1992 when 68% of men and 57% of women wanted more job or leadership responsibilities to 52% and 36% respectively in 2002. Such research would expand on current research and identify factors for the decrease in individuals' interests.

- What are the perceptions regarding experiences creating opportunities and obstacles of women higher education chief information officers within the first five years of their roles and positions as compared to ten to fifteen years into their roles and positions? Or some other longitudinal time line? Research such as this would reveal any differences over time for women CIOs. Factors related to staffs' comfort levels and supervisors' comfort levels could be compared over time. Factors related to the women CIOs' experiences and credibility with Deans and others could be compared over time, along with many other elements such as personal strengths and changes in leadership styles.

The hegemonies of our culture and its institutions are not expected to change in the near future. Many women have lent their voices toward understandings of women's roles in the American culture. This research, its interpretations, and recommendations are a part of those understandings and assist in clarifying the opportunities and obstacles women in higher education information technology experience as they pursue their professional work and career paths.

EPILOGUE

Many writers use the metaphor of looking through a prism, with its changing colors and hues, to illustrate reflections on changing aspects of one's life. As I reflect on this study, the prism metaphor is a fitting way to visualize the aspects of the co-narrators' lives and the many opportunities and obstacles they experienced in their career paths. It is also very fitting to describe my personal journey into higher education information technology leadership roles.

Over the years the prism has twirled and circled bringing different hues of color to my lived life. It seems necessary to offer a few concluding remarks to this study which closely depicts my own personal experiences in the world of higher education information technology—experiences that have had different intensities and impact, just as the intensity of color varies in a prism.

I have been a pioneer over the years, similar to the co-narrators. Not necessarily a pioneer that one might picture jumping off the horse, cutting the trees, and blazing the trail through the frontier with oomph and vigor (I'm not sure there were ever any such pioneers), but a pioneer that has quietly, steadfastly, and confidently created a trail by achieving leadership roles in male-dominated positions in information technology. Several situations characterized by uncertainty existed over the years in which I experienced difficult challenges and confronted roadblocks. Quite often I was the only woman at the table during internal meetings within the institution in which I worked as well as externally when meeting with computer vendors. I was one of the first female technology consultants to the K-12 school districts' administrative offices in the state of

Iowa. I was the first female to hold several higher education leadership positions in information technology. Indeed, many of my pioneering experiences involved new ground being broken and traditional patterns beginning to change.

Many gender stereotypes were experienced over the years in which males were seen as "a better fit" and more often thought of as "leaders" as they were considered more dominant, ambitious, technical, and more capable problem-solvers. Old boy networks have been present in all positions and several instances of resistance from specific males have occurred as my leadership roles grew and expanded. White male hegemony continues to underlie current social, political, and educational structures. Even recently an international higher education information technology professional organization I thought had become more inclusive of women in the field, one that lacks research into women leaders in higher education information technology, has recently "slapped me in the face," bringing me back to reality if you will, by rejecting my proposal to present the research findings from this study at its national conference.

Dealing with these situations has proved challenging. Mentors and family assisted with support and encouragement during these times. I wish I had the knowledge that I have now as I began my career path many, many years ago. It would have helped with understanding the covert dynamics that occurred regularly within the workplace and organizations with which I have been involved.

Many of the co-narrators' challenges were common to me as well. For example, trying to make everyone happy and realizing I couldn't, stereotypic behaviors, jealousy from males, being challenged by males, having to keep some professional distance

between oneself and friends, and balancing family and work. As the co-narrators described enlightenment, I knew exactly what they had experienced and felt some relief to know others had been through similar "aha" moments.

Growing and learning about computing as personal computing itself grew, I found many doors opening over the years from taking this early initiative and growing with the field. Many opportunities were experienced, similar to the co-narrators. Mentors were present and assisted with opening doors that expanded experiences and expertise. My husband was very supportive and encouraging. My leadership style was people-oriented, participative, and emergent. Such a style has worked well throughout the years and staff seemed to thrive and grow under such a style. My personal strengths were strong and sound guiding me through tough times and into new adventures. These elements, coupled with a love for higher education and technology, presented many experiences leading to opportunities that allowed me to grow professionally.

Conducting this research was comforting to me as it was the first time I had heard other women in leadership positions in information technology discuss their personal struggles and methods of overcoming them. If anything is to come of this research, I would hope that other women reading this study will realize they are not alone or isolated as they experience many opportunities and many obstacles. It is my hope that as the reader goes forward with his or her career in higher education information technology or their career in higher education in general, the reader will learn from the experiences and lives of the co-narrators potential methods one can use to overcome obstacles and potential methods for creating and taking advantage of experiences that provide

opportunities for career development and professional advancement in the field. I also hope that the reader develops an awareness of the hegemonies that occur in societal institutions and individual interactions.

While one can look back on one's life and visualize the different aspects and experiences as represented through metaphors such as the prism—as it turns bringing varying reflections and hues—the paths created by experiencing opportunities and obstacles, the how and why we choose or perhaps more often do not choose certain directions, causes the many facets of our lives to vary, intertwine, and have commonalities. Those commonalities join us, yet separate us, with interesting and perplexing tints and shades of color. By providing women with voice, others can develop an appreciation and understanding of the tints and shades that the nature of executive level higher education information technology leadership brings to one's life. These intersections and interconnections contribute to an understanding of the identities of information technology leaders in higher education.

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APPENDIX A

RESEARCHER INTERPRETATION AND SELF-REFLECTION LOG EXAMPLE

Researcher Interpretation and Self-Reflection Log Example

Completed After First Interview With Helen—Recorded on Drive Home

Follow-up Notes and Researcher Thoughts:

How did the interview go? Was the interviewee talkative, cooperative, nervous, well-dressed/scruffy, worried, etc? Body language?

Where did the interview take place? Were there lots of interruptions? Was it a good setting? Was it busy/quiet? Were there many other people around?

Other feelings about the interview? Did it open up new avenues of interest? New questions? New ideas?

Did periods of silence indicate anything special?

What were the main issues or themes that struck me from this contact?

New questions raised for me?

Helen was the first participant to agree to being included in my research. She was quite intrigued by this line of research and seemed to want to tell her story. The interview took place in her home, which was an older home, part of a historic district of the [City], close to the University. She did not seem to want to engage in small talk at the beginning or end of the interview. My impression was that she wanted to keep it somewhat formal and perhaps be in control of the process. She also gave me a copy of her vitae.

It was a good interview, went for two hours. I met her at her home; she introduced me to her husband who was there. He was rather odd in that he would not look at me when I was addressing him, he would look at the floor. Mumbled when responding back, still looking at the floor. He left to run some errands and things like

that. She offered me some water or lemonade or tea and I told her I'd have a glass of water and then I had taken some cookies, so put those out on the plate and she took one of those. And we sat in the living room on some very nice comfortable soft couches and chairs and had our interview there. The dishwasher was running in the background so that might have interfered with my recording some but we will see how that goes. She was very pleasant to talk to, very willing to answer questions, she gave a lot of thought to the questions that I was asking and seemed to have quite a few good insights. Overall, I felt like the interview went very well. We seemed to be able to have a conversation and it wasn't real structured or choppy, I didn't feel.

She was very relaxed; she was dressed casually for the day, very comfortably. She did not seem worried or nervous. She did mention confidentiality at one point to make sure that things were kept according to the consent form that she signed and the interview did not have any interruptions other than her husband coming back home at about the end of our two-hour time period, so that worked out very well. It was a very nice setting there, no phone calls, nobody else around, and no one to bother us. As far as avenues of interest it didn't particularly open up any new avenues of interest to me. She didn't really say anything real unique that I guess I have not heard before. She was very positive, fewer obstacles or hardly any that she identified, which surprised me a little bit and she apologized a few times for not having more sort of terrible things to tell me. The themes that struck me during this contact were that she has had a position that basically she started from the top down. She was a faculty member, was then worked into the head of the IT department, she said people were very accepting of her, didn't sound like she

had had too many struggles, except for the one time she felt the Chancellor was not supporting her and so she looked for a position elsewhere and then discovered that she actually had it pretty good in her current position. And by then her supervisor realized that she was looking and seemed to give her more attention and more feedback which is what she was wanting. I'm not sure of any new questions at the moment. I'll have to listen to the interview again and see if any new questions have come about as a result of this. She did not have children so there were some struggles there she had not experienced, but I will listen to it again and see where we go.

I could also ask Helen the next time if she thought that someone who came into the position through the ranks of the IT organization would have more struggles and barriers than she has seen, too. As opposed to just coming in right at the top level, from a faculty position, and what she might envision those struggles and barriers to be. Maybe go into that some more.

I could ask Helen about her role now as CIO and when she is in groups of other CIOs where it would perhaps be mostly male—what are the power dynamics that are occurring and what does she see happening there? Also does she see any of those same dynamics with her three male directors and one female director, when they perhaps get together as a group? And have her talk about that. I could also pursue her thoughts about her mentors and if she perceived that they were helping to protect her in some way or keeping her from experiencing certain barriers that she might have seen others experiencing that did not have mentors.

APPENDIX B

FIRST INTERVIEW WORKSHEET EXAMPLE

First Interview Worksheet Example

Name: <u>Alice</u>
Interview 1   Date: Oct. 12, 2007

Introduction:
Introduce Self
My topic and purpose.
Confidentiality will apply.

Kinds of Questions to use:

Introducing questions—Please tell me about when you; Have you ever; Why did you go
                                              to?
Follow-up questions—Could you say some more about; What do you mean by; Yeeees?
Probing questions—following up what has been said through direct questioning.
          What do you mean?
          I'm not sure that I am following you.
          Would you explain that?
          What did you say then?
          What were you thinking at the time?
          Give me an example.
          Tell me about it.
          Take me through the experience.
Specifying questions—What did you do then; How did X react to what you said?
Direct questions—Do you find; Are you happy:
Indirect questions—What do most people here think of the ways management; following-
                                up with: Is that the way you feel too?
Structuring questions—I would now like to move on to a different topic.
Silence—pausing to signal you are giving interviewee reflection time before answering
Interpreting questions—Do you mean that your leadership role has had to change from
                                one of .. to a more ...; Is it fair to say that what you are
                                suggesting is that you don't mind being ... ?

Participants' Demographics:

Educational background

Employment background and career path (story of how you've arrived at where you
currently are in your career)

Length of time in current position

Use of technology during this time

Family Composition

Questions:

Primary Research Question: What are the obstacles and opportunities encountered by women higher education information technology executive leaders (CIOs) in achieving their current positions?

(Think about "What about this is puzzling me?")

ASK GENERAL QUESTIONS BEFORE MOVING TO SUBQUESTIONS. DO NOT LEAD THEM.

1. (In thinking back about your years in IT and HE) How would you describe and characterize your overall experience as a woman working in higher education as the leader of the information technology division?

   a. Were there **up and down** periods?
   b. Why have certain perceptions?
   c. Why do you characterize experience this way?
   d. Are there factors that cause you to characterize it this way?
   e. What have been some of **the struggles** you've faced?

2. (Thinking about your perceptions and experiences) Based on your perceptions and experiences, did being a woman influence or affect your achievement of your position as a higher education information technology leader? If so, in what ways?
   a. Positive ways – Negative ways?
   b. See actions or implications people have or made that make you think that because you were a woman it affected you getting the position?
   c. Subtle actions
   d. Were you ever the **first woman** in position?
   e. Were you ever not hired because a woman?—What makes you think being a woman prevented this?

3. Were there elements or situations that you experienced that provided **opportunities** enabling you to obtain the position of an information technology executive leader in higher education? If so, what were they?

   Ask above general question and then go into specifics.

a. Elements: social (mentors, networking, support figures); political (laws, regulations); economic (wealth—of institution—creating positions, economy changes/driven); educational (degree, background, field of study); or other) Individual strengths; leadership style

b. Organizational support—working from home, telecommuting, childcare, flex leave

c. Role models, mentors, sponsors

4. Did you experience **obstacles** (road blocks) and barriers during your career path of becoming an information technology executive leader in higher education? If so, what were the obstacles and barriers?

Ask above general question and then go into specifics.

a. How did encountering these obstacles make you feel?
b. How did you react?
c. How did others react to you?
d. Did you perceive the obstacle as being something put in front of you as a test of you?
e. Do you think the field of IT has increased the barriers? Or decreased the barriers? Why?
f. What about HE? Do you think the combination of IT and HE creates any particular barriers as compared to IT in the corporate world? Why?

FOR REFERENCE:
Organizational:
     lack of training/career development
     lack of effective promotion policies or programs
     lack of or biased performance-based feedback—male standards,
          terminology
     unequal compensation practices
     tokenism
     isolation.

Behavioral and Cultural obstacles:
     behavioral double-binds (speech, dress, competency) (tried and came back
          to bite you as was perceived by supervisors or colleagues in
          opposite manner)—faced higher standards but rewarded with
          less—no-win situations
     stereotypes regarding you as a woman
     communication styles
     mobility & family commitments
     good old boy networks

role models, sponsors, mentors; power dynamics.

5. What methods did you use to overcome or eliminate the obstacles and barriers you encountered? Wait....

   a. Did you adapt speech, mannerisms to fit in more? How?
   b. More acceptance if more like them?
   c. Were there things you told yourself, phrases, thoughts, that got you past or through the obstacle?

6. Were there experiences you had in which the organization of higher education or information technology hindered or facilitated your career path of becoming a CIO? If so, can you describe the experiences?

Deal with each separately

   a. (Were there experiences you had where you felt the organization of HE or IT hindered or facilitated your career path?)
   b. Are there experiences you feel the HE environment has helped you have that you might not otherwise have had? Or hindered? IT organization as well.
   c. Perceptions within each of these organizations toward women that hinder or facilitate?
   d. Social networks within each?
   e. Women's organizations or groups a part of?

TIE QUESTION 7 and 8 TOGETHER

7. Are there experiences you've had in higher education that led you to think that a gendered framework – a framework where advantage or disadvantage— exploitation or control—are present in terms of a distinction between male and female, masculine and feminine? (reinforced to you that a **gendered framework** of femininity or masculinity is perpetuated in higher education organizations or higher education information technology organizations?) If so, can you describe the experiences?

Ask again for IT.

FOR REFERENCE:

a gendered framework—leads to an organization in which "advantage and disadvantage, exploitation and control, action and emotion, meaning and identity, are patterned through and in terms of a distinction between male and female, masculine and feminine" (p. 85).

Gender—socially constructed schema for categorizing individuals based on biological differences and stresses normative definitions of masculinity/femininity.

    a. Have you had experiences in HE where some type of advantage or disadvantage was given to someone because they were either male or female?

    b. Same for IT.

    c. How did you react? What did you do?

    d. Are there positions you can identify in HE and IT that seem to be more masculine or feminine situation/issue? Who occupies these positions? How is someone from the opposite sex in the position treated—how do they conform to that role?

8. Have you ever observed or experienced situations that reflect the **construction of divisions by gender** in the higher education organization or information technology organizations? If so, can you describe the situations?

    a. Divisions that seem to occur because it is seen as a more masculine job or feminine job?

    b. What have been your observations regarding women in masculine roles/ men in feminine roles? Have you observed or experienced certain roles being more masculine/feminine in the HE organization? Have you observed or experienced certain roles being more masculine/feminine in the IT organization?

    c. Do these people take on characteristics, behaviors that are masculine or feminine to fit with the job?

    d. Control of or jurisdiction over technology or other areas by males as those are seen as masculine role.

    e. Are there Management decisions you've experienced that perpetuate gender divisions?

    f. Are there organizational practices that perpetuate gender divisions?

FOR REFERENCE:

First, "the construction of divisions along lines of gender" (p. 85) produces divisions of proper behaviors, labor, power, physical locations, and divisions within the family and the state. Managerial decisions often instigate gender divisions (Cohn, 1985) and they are maintained through organizational practices (Acker, 1993). Citing Cockburn's (1983, 1985) work, Acker (1993) conveys that even when reorganizations occur in organizations, gender divisions are maintained. The introduction of new technologies in an organization often results in reorganization, but the gendered division of labor is generally maintained leaving the control of or jurisdiction over the technology in the control of men.

9. Have you had any experiences in which you were marginalized or perceived a patriarchal (male) designation of power and authority? If so, can you describe the experiences?—Felt your work was devalued?

Marginalized—put in a less-advantaged or under-advantaged position; not given information, tools, training, etc. as others get; not heard or listened to, silenced

10. Have you made any observations or had experiences in which authority was legitimized, task boundaries determined, or authenticity of work confirmed or disconfirmed due to access to certain artifacts or due to the sex of the person in a particular role?
    a. What has been your experience in regard to people's authority, their tasks, the importance of the work they do being considered more legitimate, more genuine, more valid, due to their access to certain technologies or technical tools?
    b. How does this relate to the sex of the person? Or the masculine/feminine role?

For women today who are thinking about entering the higher ed IT field and perhaps becoming a CIO someday, how do you think their road will be different than what yours was? Will they need to be able to do different things? Will their obstacles/opportunities be different?

If you had a daughter entering this field, what advice would you give her? How about a son?

Is there any advice in looking back, you wish someone had given you?

Do you have anything else you would like to add today?

Ask interviewee if they have any questions.

APPENDIX C

SECOND ROUND INTERVIEW QUESTIONS EXAMPLE

(

Second Round Interview Questions Example
(Four Pages of Fifteen)

Alice Second Round Interview Questions	Confirmed?	Notes
Overall Experience as a Woman Higher Ed IT Leader		
*Last time we met you mentioned your experience as a woman in the HE IT environment has been very **positive and supportive**—which surprised you coming from a rather unsupportive business environment.*		
Who supports you the most? Those above you (supervisors) or those below you (staff)? Do you think this supportive environment is something rather unique to HE? In talking and interacting with your colleagues who are women IT leaders, what do you find their attitude to be?		
*You also mentioned you had taken a pay cut coming into HE, but yet you felt you had more **opportunities**, and you said you didn't feel like you would be where you are today in higher education—meaning your leadership position, if you had stayed in the business world. And you also mentioned that you felt the overarching mission of HE and the fact that you provide support for students, faculty, and staff, leads to a passion for your job, makes your **work more meaningful**, versus working for a company where the bottom line or simply the product is the most important thing. This coupled with the fact you get to keep your finger in the programming area which is an area you enjoy plus the fact that you mentioned you get to review, research, and implement more technologies than you would in the business sector.*		
Does it take a special type of person to value HE for these reasons?		
Achievement of Position Influenced by Being a Woman		
Has the University had a goal of becoming more diverse? Do you think this influenced you getting recruited initially and now the position you have?		

*When we met last time, you mentioned that you weren't certain if **Affirmative Action** initiatives and laws had anything to do with your getting this position. You mentioned that there's been some talk about you being set up to succeed and given the opportunities. But yet, you made the point that you can be given opportunities but you still have to follow through and prove yourself.*

Do you think you've had to prove yourself to people more than a man would?

Opportunities Experienced

*When we met previously, you mentioned several opportunities you've experienced. One of those was that you were **recruited by colleagues** for your positions in HE—for the programming, the Academic manager, and the Director of IT.*

*You also mentioned you took a **drop in salary** when you entered HE as a programmer.*

Was your salary in HE as you took the programming job comparable to males with similar experiences in HE?

*You also mentioned you were recruited because they felt you could **communicate in a non-threatening way** with users, specifically faculty, even though you had no experience working with faculty, and manage a staff that earned the **respect and trust** of faculty in supporting them. And you were **good at following-through on things and getting the work done.***

Do you think the people recruiting you were encouraging you to apply because they knew you and thought you would fit in? You wouldn't upset or change them or their situation? You were one of them?

*Another area of opportunities discussed last time was **education, training, professional development** and the fact that the University has been very supportive in these areas.*

Have there been any programs or professional development you've taken that was specifically for helping you develop your leadership skills? Examples? Other than some community seminars mentioned last time that you had taken, can

you give me any additional examples of training or professional development you've taken advantage of?	
*Last time we discussed many of your **strengths**. You mentioned you have good **communication** skills, in that you understand the technology but yet are able to talk to someone simply and not threaten them.*	
Can you give me some examples of such situations you've dealt with? Do you think females have better communication skills in this area than males?	
*You also mentioned feeling you are **well rounded** in your skills. That you do not know everything and that you rely on your staff to know many of the more technical aspects.*	
Do your Directors mind you relying on them for details or do they embrace that?	
*You also mentioned you have **confidence** in yourself, take **initiative**, are **respectful** of people, and are **self-motivated**.*	
Have you had supervisors in the past who are not respectful of you? Examples?	
*As far as self motivation you mentioned **self struggles** and working long hours to prove yourself, partly due to peer pressure.*	
Can you give me some examples of the peer pressure?	
*We discussed your **mentors** and you mentioned a coach in high school, your father, your advisor from [the University], and the Dean and Vice Provost of Academic Services.*	
What were some of the obstacles your mentors helped you get past? How would things have been different for you if you had not had mentors? Why do you think the Dean and VP was grooming you and not someone else?	
You mentioned trying new things and having the strength to say I know I can do this and moving forward—many times from encouragement from your mentors.	
Are there times when you have moved forward with things and they weren't perfect and it came back to bite you? Examples?	
*When we discussed opportunities due to **affirmative action**, you mentioned when you came into your management position here (which one? Leader or academic mgr?) there were no other women—that it was male dominated. You mentioned*	

some problems with a couple of the Directors in IT.	
How were you received by those above you at the institution? Examples?	
*You mentioned your **leadership style** was one of listening, accepting ideas, admitting when you're wrong, flexibility, approachability, giving credit to others when due, being supportive, and staying out of the limelight. Yet you can be direct, forceful, and demanding when needed.*	
Can you give me some examples of times when you need to be direct and demanding?	
How has your leadership style changed over the years?	
*You stated you had been to a few women **conferences** in town, participate and **network** in Educause, are on a number of listservs and participate in the [Group] network in [State].*	
Do you notice any particular dynamics going on in the group between the men and women? Covert messages or actions? Who sits where? Verbal discussion dynamics such as who talks more or less?	
*You mentioned that **economic times** has provided some opportunities for hiring more staff—not necessarily women or men, but the best candidate that fits within [the University's] mission and values.*	
What elements are necessary to fit within Grand Valley's mission and values? Who determined the mission and values?	
*You mentioned you had **family support** from your parents and previous husband as you progressed in your career. You mentioned a little bit of competition between your previous husband and yourself as you were both in professional positions.*	
Would you mind giving some examples of what that competition entailed?	
*We discussed that **organizational support** from the university in areas such as childcare, flexible schedules and telecommuting are available. You view this, for your organization, as a temporary type of opportunity, not something permanent.*	

APPENDIX D

THIRD INTERVIEW QUESTIONS

Third Interview Questions

For Helen:

(1) When we talked previously, you mentioned "observing women who take stereotypically male positions looking for opportunities to move out of that role eventually."

Could you talk a little more about those situations?
Why you think they make that decision?
Was it because of, for example, that they were assessed according to male standards and considered doing poorly or intimidation by other males in similar positions or other women harassing them?
What type of positions do they move into? Higher, comparable, or lower level positions?

(2) Can you describe any differences you've seen between males or females in IT organizations and the access they have to certain technology tools, certain people, or lines of authority?

(3) Are there certain roles, positions, or behaviors in IT that seem to increase people's importance and power? And what territories or boundaries do you see occurring in IT—in the way people interact or work together?

(4) What percent of your current ITS organization is men and what percent women?

For Grace:

(1) Did you ever attempt to integrate women into traditional male IT roles?
Could you talk about these attempts?
How did it work out?
What did you do to secure a successful integration?

(2) Can you describe any differences you've seen between males or females in IT organizations and the access they have to certain technology tools, certain people, or lines of authority?

(3) Are there certain roles, positions, or behaviors in IT that seem to increase people's importance and power? And what territories or boundaries do you see occurring in IT—in the way people interact or work together?

(4) What percent of your current ITS organization is men and what percent women?

For Alice:

(1) Can you describe any differences you've seen between males or females in IT organizations and the access they have to certain technology tools, certain people, or lines of authority?

(2) Are there certain roles, positions, or behaviors in IT that seem to increase people's importance and power? And what territories or boundaries do you see occurring in IT—in the way people interact or work together?

(3) When we talked previously, you mentioned some women taking roles or positions that typically are male-dominated. Some women were not successful. Could you talk a little bit more about those women.

Was it because of, for example, that they were assessed according to male standards and considered doing poorly or intimidation by other males in similar positions or other women harassing them?

(4) What percent of your current organization is men and what percent women?

APPENDIX E

INITIAL CODING FROM TRANSCRIPT EXAMPLE

Initial Coding From Transcript Example

(two pages from Helen's first interview)
(bold text would have been highlighted on paper and boxed text written out to the side)

I: Um, hmm. Okay. And it sounds like you were the first women, or maybe not. Were

you **the first woman as the computer science chair?**

H: Yes.

I: at **the University as well as in the IT leadership role?**

H: Yes

> Demographics: First woman computer science chair and IT leader at institution.

I: Okay. Um, I'd like to move into talking about the opportunities, and you've already

mentioned quite a few of the opportunities that you've felt you've had that helped you

obtain your position that you have right now. But going into those a little more in

depth. First of all, uh, opportunities that we might term social, such as mentors or

role models or sponsors. Did you have any opportunities because you had a mentor

or role model or sponsor? And how do you think that helped you achieve your

position or achieve your growth to be able to get to that position?

H: Again, I think I've been really lucky that way. I uh, even right from

high school I've had a **high school math teach who was extremely**

> Male high school teacher was a mentor

um, supportive of me, recognized my abilities early on, uh, encouraged me at

every turn. In fact, I just visited with him not too long ago and it was just really fun

to see him

I: um, hmm

H: again after all these years. Umm, when I was an undergraduate **I had a strong bond with several faculty--almost all of my mentors have been men.**

I: um, hmm

> Undergrad mentors were almost all male

H: Um, but I'll mention one woman in a minute.

I: Was that **mostly because there were men in those positions** or?

H: **Yes,** although you know when I was an undergraduate there were women on the faculty.

I: um, hmm

> Mostly men faculty, some women, did not connect with advisor

H: Um, my **advisor was a woman and she just wasn't somebody that I resonated with.**

I: um, hmm

> Interests distinct from advisor.

H: Ah, and maybe because I **gravitated more to the harder aspects of mathematics that she was a math ed person and** I was under that she centered on math education and I was more interested in algebra and all those kinds of things and so, I um, I had **there were some women faculty that I liked a lot when I was in graduate school but my dissertation advisor who remains a very close personal friend is a man.**

> Dissertation advisor male.

I: um hmm.

H: I would say my sort of secondary, **second and third mentors during my graduate school days were men and um, and even in my career at [institution] most everyone that's been a mentor to me has been a man** with the exception of um, the **dean in my second and third years of this department, I mean**

> Male mentors in grad school and at current Univ as she pursued

APPENDIX F

INITIAL CODING WITH POSSIBLE FOLLOW-UP QUESTIONS EXAMPLE

Initial Coding With Possible Follow-up Questions Example
(Four Pages of Thirty-three)

(Alice)
Initial Coding
Interview 1

Quote	Code (based on her perception)	Second Round Follow-up Questions
		Preface with: Last time we talked.. When we previously met, you mentioned… What did you mean by…; I wasn't sure I was following you when you said … Would you explain; Take me thru the exper; Can you give me an example…; What were you thinking at the time….
It was a man-centered company. Women were there typically to do the administrative work … push the pencils, click the letters out and what-not. And actually I was the first woman in that IT department. And so, there weren't challenges that I would say were day-to-day like the people--my colleagues were fine. (Challenges were with) management (and) their perception as far as advancement. The opportunities I found out as I went down that road were not really there. They were there for men. P. 3	Females lacked opportunities for advancement due to mgmt being male centric.	Did you ask about advancement? And what were you told? Did other women join the company and realize this as well?
Salary I found out was an issue (in a programming position). I at that time was not married (and) did not have a family. (I) worked side-by-side with males that did. And they made much more money that I did….. Some of them (had more years of experience), one was the same as mine. One was more because of their age but their experience was in a different technology when they came there (and) they had to learn what I was doing … and they still made more money. pp. 3-4	Salary inequities existed between men and women for similar positions.	Did you ever raise this as an issue? What were you told?

Can you give me some more examples of situations you faced within that company that made you feel isolated or marginalized?	Do you think a lot of this was due to the fact that this was a private company versus public?	Was your salary comparable to the males at the institution? Were there specific elements they used to entice you to finally come here?
Marginalization, isolation even though she knew more about the systems than her manager.	Environment remained male controlled as company switched from private to public.	Opportunity—was recruited to work for current institution as a programmer
I had a manager that I first reported to that ... within a month I probably knew more than he did about the systems.... This was at that time a private company. ...Like I said very male oriented, male driven, not that everybody felt that way, but the management did and it was very difficult to go anywhere or to be heard within that structure. P. 4	... I was certainly not real happy there, but I was at a stage where I was sort of waiting to see what would happen because things were actually changing at that point, the company was soon to go public. They had brought in an outside consulting agency to review what we were doing and to make recommendations for change. And with that we were moving from the traditional mainframe to client server base. (B)ut at that time I still didn't see anything happening in an advancement position. It was still being pretty much controlled. P. 5	And I was approached by colleagues that when I went to school here that I actually worked for .... that were still here. And they said, "We have an open position. Why don't you think about coming over." And I said naaa. "Well just come talk to us." So I came and I talked to a couple of people. One that I had worked for as a student here. And one that I would be working for if I were to take the position.... I actually turned it down twice. And they kept coming back and on the third time, I said, you know, something's going on here. I'm going to take a drop in pay, but I think that this is the right move because I think there will be different opportunities, cause I'm not getting anywhere

over here.... And so I decided to do that.... (and) it turned out awesome! P. 6		
I enjoy programming. To this day I enjoy the challenge and the excitement of trouble-shooting something and figuring out and making things efficient. I still enjoy that and I actually don't do that programming but I have the opportunity to be involved in a lot of projects and sort of on the front-end of the design. It's not that I sit there and tell them how to do it, but the global concepts of what we want – I still kind of keep my fingers in because I really enjoy that part of it. P. 7	Opportunity—current position allows her to still be involved with programming planning, something she enjoys	Do you think this helps you as an IT leader—expand your knowledge and create a partnership with your staff?
I was approached … because of the work I was doing on large projects, on how I could communicate with users and follow-through on things and get the work done. And so they wanted me to come in and manage people and work with faculty. Cause we had a small group at that time and it's always a fine line of IT people helping the faculty and gaining the respect and gaining you know a certain level of camaraderie and trust. So they brought me in to help bridge that gap and to be able to work with people. You know, understand the technology but yet to be able to talk to someone and not make them feel threatened or feel that they don't know what they're talking about …and just to help in that area. So it was a scary jump. I had no background in that. P. 7	Opportunity: recruited for a higher level position at the institution Strengths: communication, reliable, people skills	In what ways did you gain the respect of faculty? Can you give me some examples of situations and what you did?
I think it's been very positive, very supportive. Which was a surprise to me coming from what I had known. I really haven't had many negative experiences. P. 8	Higher ed experience has been very positive and supportive, quite different than previous environment	What do you think about HE causes this culture of support?

Do you think any of this is related to you being a women in the role of IT leader?	Faculty attitudes foster a difficult environment at times.	... (C)ertainly ... with faculty at times, the knowledge or their pecking order, if you will, sometimes plays a part (in creating some negativity). But it's not that they treat you bad, it's just different sometimes. P. 8
Does your voice get heard when you request more resources? Are you listened to?	Struggles/Challenges: institutional growth outpaces the growth in resources available to meet needs of faculty and students.	And so some of the struggles and challenges have been in that area (institution growing a large amount) and trying to meet the needs of the faculty who are trying to meet the needs of the students. So ... in my different positions here, that's been most of the challenges and struggles, is trying to meet those needs quickly, with the resources that you have at that time. Because they (the resources) always grow much slower than the faculty and the student population grows. P. 9
Can you give me some examples of the blows dealt to you?	Struggle: from other members of IT staff not wanting to see her succeed	(Other struggles are) internal IT struggles. Coming through the ranks, I've certainly taken my blows sometimes directly and sometimes indirectly from members of the staff that maybe didn't want to see someone else succeed or thought that they should succeed. P. 9
What kept you going and positive during these times.	Obstacle: people telling her they didn't want her to get the CIO position	I've had ... some people tell me to my face, "I don't want you in this position." (S)ome I heard behind my back through others. So those were some internal struggles that I had to decide do I want to do this or not—to move forward. P. 9

APPENDIX G

OBSTACLES MATRICES EXAMPLE

Draft Obstacles Matrix

Obstacles Experienced √√ (Categories & Subcategories)	Helen Int. 1	Helen Int. 2	Alice Int. 1	Alice Int. 2	Grace Int. 1	Grace Int. 2	Count
Good Ole Boy Network	X		X	X	X		3
Male Seniority and Power					X	X	1
Female Seniority and Power						X	1
Males Feel Threatened by Female					X		1
Intimidation by Males			X	X			1
Isolationism	X	X	X	X	X		3
Lack of Support and Recognition from Superiors	X	X				X	2
Lack of Support and Trust from Staff or others			X	X			1
Jealousy		X	X	X	X	X	3
Disrespect				X		X	2
Promotional Limitations		X	X	X	X		3
Educational Background	X		X	X			2
Cost of Education						X	1
Affirmative Action Lessening Effectiveness		X					1
Naivety					X		1
Caring Attitude						X	1
Politics						X	1
Salary Inequities	X	X	X	X	X		3
Stereotypes	X	X	X		X		3
Faculty/Academic Attitudes	X	X	X				2
Lack of Trust by Academicians				X			1

Lack of Credibility	X	X				2
Cultural Beliefs	X					1
Socialization Process		X				1
Less Technical Skills in Women					X	1
Others' Dislike of and Lack of Skills in Technology					X	1
Technology Unfriendly or Uninteresting to Girls				X	X	2
Age					X	1
Tokenism	X	X	X			3
Misperceptions by Others of Why women Get Jobs	X	X				2
Mentors Unhelpful		X				1
Lack of Leadership Skills			X			1
Communication Skills and Style	X		X			2
Lacks Ability to Sell Self		X				1
Family Commitments	X		X			2
Mobility		X				1
Hurtful Comments or Actions	X		X			2
Double binds	X		X			2
No-Win Situations		X				1
People Out to Get you		X				1
Set-up for Failure--Tested				X		1
Supervisors Lack Skills				X		1
Institutional Obstacles						
Organization Covert Actions		X		X		2
Corporate Bullying or other Bullying		X		X		1
Lack of Resources for IT Division			X			1
Lack of Spousal Hires	X					1
Male Dominated Field			X		X	2

Miscellaneous			
Failing Exam	X		1
Lack of Flex Time	X		1
Double binds (not an obstacle)	X	X	1
Performance Review (not an obstacle)	X	X	2

Final Obstacles Matrix

Obstacles Experienced (Categories & Subcategories)

	Helen	Alice	Grace	Count
Stereotypes	X	X	X	3
Early Experiences Effects	X	X		
Hurtful, Disparaging Comments	X	X		
Preconceived Notions	X			
Fear and Denial		X	X	
Lack of Trust Due to Credibility Issues		X	X	
Acquisition of Male Attributes	X		X	
Age	X			
Lack of Recognition, Support, and Trust	X	X	X	3
Lack of Support and Recognition from Superiors	X		X	
Lack of Support and Recognition from Staff		X		
Males more Direct, Females more Indirect		X		
Marginalization	X	X	X	3
Contributions Unrecognized			X	
Professional Input Ignored, Discounted, Credited to Others		X	X	
Disrespected		X	X	
Information Deliberately Withheld	X	X	X	
Corporate Bullying			X	
Narrowed Pathways and Glass Ceilings	X	X	X	3
Path Not Leading to Presidency	X			

	3			3			3			3
Lack of Educational Background Stymies One	X		X			X			X	
Lack of Advanced Degree Stymies One	X		X			X			X	
Cost of Education Presents Obstacle			X						X	
Glass Ceiling Experience of Friends			X							
Glass Ceiling Experience Personally						X			X	
Covert Practices of Organizations			X			X			X	

Jealousy — 3
Jealous of the Position	X		X			X			X	
Jealous of Attention, Competency	X		X			X			X	
Jealous of Title	X					X			X	
Information Withheld	X					X			X	

Isolationism — 3
Only Woman in Situation	X		X			X			X	
Ignored	X		X			X				
Others Protective	X					X			X	

Tokenism — 3
Because I'm a woman	X		X			X			X	
Misperceptions by Others of Why women Get Jobs			X			X			X	
Lack of Leadership Skills			X			X			X	

Good Ole Boy Network — 3
Intimidation by Males	X		X			X			X	
Unwelcomeness	X		X			X			X	
Exists in Current Staff			X			X			X	
Exists in Higher Ed Administration			X			X			X	

Family Commitments	1	2	3
Women Have Greater Role in Family Care	X	X	X
Challenges Due to Lack of Flexibility	X		X
Mobility	X		
Spousal Hires	X		

Double binds	1	2	3
Trying To Learn--Seen as Incompetent or Changing Things	X	X	X
Dress--seen as too Masculine		X	
Working Hard/Males Threatened	X		X
No-Win Situations	X		X
Set-up for Failure--Tested			X

Salary Inequities	1	2	3
Salary Adjustment	X		X
More Technical Positions Paid More	X		
Male/Female Paid Equally for Same Work		X	X
Male/Female Not Paid Equally for Same Work		X	X
Faired Well With Salary in Current Role	X	X	X
Best Negotiator Gets More			X
Soft Skilled People Paid More than Hard Skilled			X

APPENDIX H

MEMBER CHECK COVER LETTER

Member Check Cover Letter

May 1, 2008

Inside Address

Dear Grace:

Thank you for being one of the participants in my doctoral dissertation research. It has been a pleasure to work with you on this endeavor. One final involvement is needed from you as I complete the data analysis.

Enclosed is a draft copy of my data analysis chapter. Since my research is a qualitative inquiry, I have utilized the qualitative analysis approach of constant comparative method. This methodology involved taking each of your interviews, transcribing them word-for-word, identifying quotes and statements, coding by meaning, re-reading, reconfirming key quotes and statements, re-coding, and eventually identifying categories and subcategories that your quotes and statements distinguished. Amongst all three participants, this process was the same and eventually all quotes and statements were pulled together and common themes emerged.

I am now asking that you read through this chapter, focusing on your statements, and provide me with verification that your statements are represented accurately or feedback regarding specific alternative interpretations that you may have or anything that you would prefer be deleted. I am also asking that you read through the brief biography enclosed and either confirm its accuracy or provide corrections. It is a very important part of the research process that you read this document and confirm that you have been represented accurately or provide feedback on areas of concern. You may wish to make editorial or general comments directly on the document and return to me in the enclosed envelope or you may wish to send me your comments via email. Either way is acceptable. I also offer the option of a personal contact—if you would like for me to call you, I certainly can, or if you would like to call me at 319-273-6268, feel free to do so.

Please respond back to me by May 23, 2008. Again, either mail the document with comments back to me or email me, marilyn.drury@uni.edu, your comments and thoughts. I do realize this is asking for more of your time, but I am hoping you will find it as interesting and fascinating as I have. Thank you so much for being willing to take the time and effort to assist me with this important area of study.

Sincerely,

Marilyn Drury