EASLEY, THOMAS RASHAD. Understanding STEM Faculty Perceptions of Matters of Diversity. (Under the direction of Dr. Susan J. Bracken).

The purpose of this narrative study was to gain a rich understanding of how tenured Science Technology Engineering and Mathematics (STEM) faculty at Capital University (a research university & predominately white university) engaged in diversity during their day to day work duties. For this study, diversity is defined as more than the personal identities an individual may identify with (i.e. race, ethnicity, gender, sexuality, etc.). Diversity may also include a person’s background or cultural upbringing, how a person thinks, and how a person behaves. The overarching research question for this study was: How do STEM tenured faculty members understand and engage diversity in routine day to day duties?

Twelve tenured faculty participants representing a variety of professional STEM backgrounds (engineers, mathematicians, etc.), personal identities (race, gender, etc.), and academic positions (department heads, associate deans, etc.) participated in individual interviews (twenty four contact hours). During the interview process, the participants shared stories about their lived experiences as faculty members and also how they engaged diversity in their everyday work activities. The theoretical framework, Huston’s “faculty vitality,” was integrated with Saldana’s verbal exchange coding to provide better analysis and interpretation of faculty member’s experiences. The participants’ stories were analyzed through the framework which organized their engagement in diversity in three of the four dimensions: 1) Intellectual exchange and collaboration- the healthy sharing of ideas among colleagues; 2) Decision making processes- decisions that have an impact on the work environment and also impacts others (faculty and students); and, 3) Mentoring relationships-
helping junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al.2007).

The findings indicate that faculty of color, women faculty, and faculty that identify as GLBT framed their engagement in intellectual exchange and collaboration in diversity through their personal identities while white male faculty framed their engagement through their personal lens of their professional background and position or rank. This finding indicates that lived experience and identities inform faculty engagement in diversity issues, as well as the university type and the culture of the discipline.

In decision making processes for diversity, tenured faculty reported that they struggle with an internal battle whether they should try to fit in the academic culture or fight for others while pushing against the academic culture. Depending on faculty’s experience, faculty members decided to either address the issue of diversity or attempt to fit in the academic culture.

The final major finding is that every participant understood mentoring was important and that mentoring for diversity can be complicated. In mentoring relationships each person may not share identities, but they must desire success of the mentee, particularly if the mentee is a diversity hire.

Study recommendations and implications included: to improve intellectual exchange and collaborations for diversity, leaders at research universities and PWIs need to gather how their faculty understand diversity to inform them how to initiate diversity activities and hold faculty accountable for enhancing diversity. For decision making processes for diversity, leaders can be more intentional in making core cultural changes that cultivate a more welcoming and inclusive environment. Suggested core cultural changes may include
changing how institutions assess how faculty qualify for tenure, reconsider using
standardized exams for assessing how potential graduates enter academic programs, and have
unified processes that include how diversity is important to incoming faculty across the
institutions in departmental hiring processes. To improve mentoring relationships for
diversity, departments can be more comprehensive in coaching faculty to examine their
privilege and consider how it can be used to enhance diversity within their disciplines and
their departments.
Understanding STEM Faculty Perceptions of Matters of Diversity

by

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DEDICATION

I thank God for increasing my faith through this process. Since I started this journey I have become a more confident and focused individual. This journey also helped me to become a better friend. This dissertation is dedicated to my father (Thomas W. Easley), my mother (Marion O. Easley), and my sister (Takia R. Easley). You all stood by through this process and I thank you for your love, patience, and understanding. This dissertation is dedicated to the memory of my grandparents (Calvin and Ida Orange) for taking care of me as a child and showing me how to love the community. This dissertation is dedicated to the memory of my uncle Rev. Dr. James Orange for showing me how to fight for my community with my mind and my heart. This dissertation is also dedicated to my other uncles and cousins (Harold, Calvin Jr., Pam, Fay, Jimmy) that have passed away before being able to see me meet this day.

This dissertation is dedicated to the memory of Dr. Colleen Wiessner because she was one of my favorite professors and sisters of faith. To those from my church Poplar Springs Christian Church, thank you for your encouragement and love. To my friends past and current, I appreciate you for being in my corner throughout my life. You all have helped me to mature into a strong man that is dependable and trustworthy.
BIOGRAPHY

Thomas RaShad Easley was born in Birmingham, Alabama. He has lived in different parts of the United States including Montana, Iowa, and currently in North Carolina.

Thomas received a Bachelor of Science in Forest Science from Alabama Agricultural and Mechanical University and a Master of Science in Forest Genetics from Iowa State University.

Thomas has extensive work experience as a forester with the United States Forest Service and other non-profits where he worked as an urban forester. Thomas currently is the Director of the Community for Diversity in the College of Natural Resources (CNR) at North Carolina State University. In his role as the director, he teaches courses, advises students, and works with faculty in CNR. He serves on local and national committees that focus on diversity.

Thomas is an ordained deacon at Poplar Springs Christian Church. He also a performing hip hop artist and goes by his middle name RaShad in the entertainment industry.
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CHAPTER ONE
INTRODUCTION

Background

*African American adult educators and their African American students experience an obstinate external pressure, a “sense of always looking at one’s self through the eyes of others, of measuring one’s soul by the tape of a world that looks on in amused contempt and pity.
-W.E.B. Dubois. Quote from The souls of Black Folk*

In our world and in our nation, the topic of diversity has taken on many meanings and represents a movement in the academy. Baez (2000) states, “Diversity in the 1980s became a buzzword in the academy, representing a movement advocating the appreciation and celebration of difference - in culture, ethnicity, gender, race, and sexual orientation- and, at the same time, a critique of the dominance of the Western tradition in curricula” (p. 43). In describing the depth and complexity of what the term “Diversity” encompasses, we must recognize that it is not limited to cross racial differences, but also intra-racial differences as well (Sims, 2006). Almeida-Neveu, (2010) adds to the complex composition of this term by adding socioeconomic status, and religion, to the aforementioned ascriptions of the term diversity. There is an interesting phenomenon occurring because diversity rhetoric in fact expands the conception of diversity so that it includes a wide array of characteristics like diversity of thought, lifestyle, culture, dress, and numerous other attributes appear on a par with diversity of sex and race (Edelman, et al.2001). In the end, all of these facets of diversity bring valuable points of view which compel us to examine why acknowledgement of diversity is important to pedagogy and campus life.

At Predominately White Institutions (PWIs), in particular, there is a struggle with
diversity because there are pervasive issues regarding culture, climate, as well as recruitment and retention. (PWIs) have taken progressive positions which recognize that the inclusion of diverse ideas from a range of worldviews will ultimately foster a learning environment that appreciates and values differences; thereby mitigating and ameliorating the potential for future problems such as not appearing to be a welcoming and inclusive environment of all populations (Brayboy, 2003). Brayboy (2003) states that “white institutions of higher education view diversity as a free standing policy and that it can be implemented without necessarily changing the structure of the day to day operations at the institutions” (p. 73). For example, institutional leaders appear to assume that because they offer courses on diversity or that they hire new faculty of color that they have solved the problems of diversity; however, underlying historic systems and structures are still in place. Diversity becomes something that certain populations have to address while others can continue to be scholars and teach (Brayboy, 2003). Nonetheless, diversity still is a struggling phenomenon on University campuses as evidenced by an examination of university demographics in the population groups related to students, faculty, administration, staff, which reveals a rather homogenous and imbalanced picture. Alex-Assensoh (2003) states that “5 % of the full-time faculty happened to be African American and Asian, although 2% is Hispanic and less than 1 % is American Indian” (p. 5).

Diversity encompasses more than the identities that one person (i.e. race, ethnicity, gender, sexuality, etc.) may identify with because diversity also includes a person’s background or cultural upbringing, how a person thinks, and how a person behaves. Correll (2001) notes that cultural beliefs influence what people think (Correll, 2001). How a person
thinks can be a reflection of their culture because they have been taught what to think and in some situations they have been taught how to behave. Correll (2001) posits, “gender beliefs are cultural schemas for interpreting or making sense of the social world” (1696). Gender beliefs represent what “most people” believe or accept as true about categories of “men” and “women.” Many quantitative disciplines like engineering and mathematics are stereotyped as masculine fields (Steinke, 2005). This understanding of culture can bias judgments of competency and consequently influence how people see themselves in these types of disciplines. As a result, women are often treated by others on the basis of their gender instead of their actual performance (Correll, 2001) because some believe that men are more competent than women in engineering and mathematical fields. “Focusing on perceptions of competence is crucial to understanding since the presumption of competence legitimates inequality in achievement oriented societies such as the United States” (Correll, 2001, p. 1692). Diverse cultural lens shape how we behave and interpret what we see in the university, thus affects how people are treated and valued.

Subsequently, the culture of the university is informed by the very nature of the perceptions that shape our society. This culture is thus maintained by faculty, staff, and students but the group that has the strongest influence at the university is faculty (Moore & Pfeffer, 1980). Faculty influence academic culture because they teach the students, influence the policies, have decision making power on students and other faculty. Further, faculty are promoted into administration, which means they have decision making power and make decisions that affect others across institutions. Because faculty members have tremendous influence at the university this is focus population in this study.
Statement of the Problem

General Problem

Research Universities (very high research activity) (RU/VH) formerly known as Research Intensive/Extensive universities and Research I have arts and sciences/professions instructional programs, dominant Science, Technology, Engineering, and Mathematics (STEM) doctoral programs, large undergraduate populations, large four-year residential component (Carnegie Foundations, 2009; Lund, 2010). STEM fields are highly driven on research and they are also fields that disproportionately struggle with diversity. As evidenced, focused resources are used to increase and enhance diversity in STEM fields (COSEPUP, 2011). Recognizing that diversity is an important focus for STEM, the proposed research study will take place at a PWI research university and within STEM related disciplines.

Faculty at research universities grasp what is required to get published, conduct research that is fulfilling and valuable, and they are able to successfully connect with students via teaching practices. While faculty work to grow and learn as members of their professional community they also learn how to be innovative and contribute to healthy, creative, and collaborative work environments (Bracken, et al. 2006, p. 8). Tenured faculty at research institutions are measured on their research, grant funding, and teaching. Gappa, et al. (2007) suggests that “faculty members choose an academic career because it offers autonomy, intellectual challenges, and freedom to pursue personal interests” (p. 105). Tenured faculty value feeling that they are their own boss and determine the design and tempo of their research (Baldwin and Blackburn, 1981; Bess, 1998). Once faculty earn tenure
they have freedom to do other activities in their department without fear of challenges to employment and they have decision making power.

Given the placement of faculty in their role as purveyors of and creation of knowledge and in the governance of the academic institution, their role in higher education academic settings has the potential to advance the premise of social equality. Faculty are also situated in the midst of society’s attempts to rectify past inequities and may face challenges related to diversity. Historically, matters related to diversity arise in different ways and in different aspects of higher education. Identities like race and gender have been and still are the salient identities with the most difficulty to retain in academic settings. Evidence of this problem can be seen by the low number of people from underrepresented populations (African American, Native American, Latino-American) and women in tenured track positions, leadership positions, and upper administration at four year institutions.

Paradigms in Higher Education

_The oppressed are not marginal, are not people living “outside” society. They have always been “inside”—inside the structure which made them “being from others.” The solution is not to “integrate” them into the structure of oppression, but to transform that structure so that they can become “beings for themselves.”_

Paulo Freire. Quote from _Pedagogy of the Oppressed_

“White stream scholarship is perceived as neutral, objective, and of quality because of its normalized status (Urrieta & Mendez Benavidez, 2007, p. 234). Tolliver (2010) notes that most people in academia are trained in programs, regardless of the discipline area, that are grounded in Western European hegemony. Brookfield (2003) affirms that adult education is racialized, grounded in the principles that emerge from Western European intellectual
traditions and conceptualizations. Consequently, theory and practice for knowledge production and dissemination conflict with expectations of those whose lived experiences emerge from a different cultural and conceptual base (Tolliver, 2010). Acknowledging that diversity encompasses race alongside other identities it is very fitting for an institution that embraces diversity to also challenge its structure because it is of a Eurocentric bias.

However, that is not the case with institutions in the United States. Institutions are not adequately challenging their existing structures. Instead, they are employing strategies designed to bring diverse people into institutions without adequately addressing the institution’s culture and climate. In other words, it is often left to chance based upon the assumption that diversity issues will take care of themselves. Consequently, faculty of color and women have a disproportionate demand on them when they enter academia. In comparison white male faculty are simply expected to be good teachers and scholars, but faculty of color and women are required to serve on committees and informally address diversity issues while also performing the same list of tasks as their majority colleagues (Brayboy, 2003; Alex-Assensoh, 2003; Tolliver, 2010). Colin (1994) states “that the tenure and promotion of African American faculty tend to be based on the level of their commitment to the Eurocentric ideology in the classroom and their own research” (p. 55). Therefore, faculty of color and women may have to sacrifice a valuable part of their identity to survive in the academic environment.

In STEM disciplines, involvement in diversity is complex. One explanation about why diversity is such a difficult issue in STEM environments is because faculty of color experience challenges to retention like non-collegiality, tense climate, and a non-inclusive
culture. Uriarte, et al. (2007), says “that scientific culture strongly shapes the beliefs, behaviors, and group practices and the ways in which people interpret information and the ideas some choose to explore” (p. 72). The research that people engage in is influenced by their academic culture. “Most universities, and many research institutions value a limited range of scholarship and associated activities which include: number of publications in high-profile disciplinary journal and subsequent citations, acquisition of grants, invitations to present results at keynote session in disciplinary meetings, memberships in social networks composed of high profile scientists, service in key editorial positions, and demonstrating thriving research labs” (Uriarte, et al. 2007, p. 72). Scientific culture may also affect the composition of the workforce because collegiality plays a key role in networking for success since faculty can serve as collaborators and support for one another. Scientific values such as reward structure that reinforces the narrow scope of many disciplinary research fields and encourages competition amongst colleagues may repel individuals from getting involved, which stifles a diverse scientific workforce (Uriarte, et al., 2007; Tolliver, 2010).

In summary, research universities with STEM disciplines are highly driven on research and these same institutions disproportionately struggle with diversity. While faculty get published, conduct research and grow in their professional communities as purveyors of knowledge, this pursuit of excellence is governed by a Eurocentric paradigm on which universities operate. Therefore, faculty of color and women may have to sacrifice a valuable part of their identity to survive in this scientific academic environment thus resulting in competition among colleagues which stifles a diverse workforce and diversity not being actualized in academia.
Purpose of the Study and Research Question

Purpose of the Study

Diversity in STEM has certainly been studied and also has been well supported financially, yet many of its goals have not yet been accomplished. There is still something missing that keeps diversity on an ongoing journey. This research is not designed to identify a model for diversity. It is designed to highlight and share how faculty members who have been successful by earning tenure within the STEM disciplines understand and actively engage in diversity through their day to day work duties.

Research Question

The research question that guided this study was:

How do STEM tenured faculty members understand and engage diversity in routine day to day duties?

STEM tenured faculty members at a research university (RU) that is a Predominately White Institution (PWI) was the focus population in this study. Tenured faculty are in a protected position at their universities. Further, tenured faculty have sufficient work experience to understand and navigate academic culture (Austin & Rice, 1998). Tenured faculty understand institutional values and role expectations, particularly as they relate to the promotion and tenure process (Johnson, 2001). Lastly, tenured faculty members have influence and set the tone of academic environments (Baldwin & Chang, 2006).

There are some drawbacks to focusing only on tenured faculty. Most promotion and tenure criteria may not be inclusive of faculty involvement in diversity initiatives. Faculty derive no professional acknowledgement for their efforts invested in diversity. Faculty can sit
on committees that address diversity and also engage with diversity initiatives, but it is not what is looked upon for actual criteria to be promoted (Moody, 2004). As a result, any faculty member who commits to addressing topics related to diversity does so as a choice but not as an imperative. In other words, it does not facilitate professional promotion even though it contributes to professional growth.

**Theoretical Framework**

**Faculty socialization**

Faculty are socialized into their roles within academia by learning gradually from graduate school on into careers (Austin, 2010). Socialization according to Van Maanan (1976) is “the process by which a person learned the values, norms, and required behaviors which permit them to participate as a member of the organization” (p. 67). Bragg (1976) asserts that socialization is a process by which individuals acquire the attitudes, beliefs, values, and skills needed to participate effectively in organized social life. Austin (2009) defines socialization as the processes a person goes through to develop a sense of attitudes, knowledge, and skills to govern themselves in professional situations (p. 173). In other words, faculty learn how to be faculty members from other faculty because this learning takes place in the academic environment. Literature also says that faculty learn how to be faculty starting as graduate students and it is an ongoing process (Austin, 2009). These definitions all center from a process by which a person learns from the behaviors of other individuals and then acts upon what they see other people doing so they can be successful.

Because socialization theory is so broad, the researcher chose to narrow the theoretical framework. In order to do so, the researcher looked for ways of understanding
faculty member’s day to day work cutting across the more typical categories of research, teaching, and service. Additionally, the researcher looked for a way to conceptualize what faculty perceive is their role as well as how they behave, particularly at a point in their career (tenured) when they are assumed to be flourishing and adept at navigating an academic environment. Thus, the notion of faculty vitality was appealing as it offers a lens for examining faculty as they work intellectually and administratively, as well as independently and collaboratively.

**Faculty Vitality-The Theoretical Framework**

Engagement is how we interact with one another, how we participate in our environments and how the environment influences us. More importantly understanding how one engages day to day helps to breakdown how one usually performs and exists in their environment. Diversity is best observed by watching how faculty engage day to day because to value diversity it must be integrated as a part of everything in faculty life. In academic settings diversity can be a part of how a faculty member engages with colleagues, administers research, their interests, and how one teaches. Vitality means success and vital faculty are successful when they are engaging in learning new ideas, which increases their productivity (Baldwin, 1990).

Thus, the theoretical framework for this study is faculty vitality which is defined by the engagement of faculty in four dimensions of their work lives: intellectual exchange and collaboration with colleagues, decision-making processes, social activity, and mentoring relationships (Huston, et al., 2007, p. 495). Further, Huston, et al., (2007) suggest that faculty members either engage or dis-engage from these types of activities, and by examining
how, why and when they choose to do so, we can learn a lot about the predispositions underlying faculty environments and faculty work.

Intellectual Exchange and Collaboration.

Engagement in intellectual exchange and collaboration is the healthy sharing of ideas among colleagues (Huston, et. al, 2007). Productive faculty are defined as individuals who share a clear, common vision with colleagues (Bland et al.2002). Intra-departmental research and teaching projects, especially, combining new and traditional fields, could create more collegial relationship and more satisfied faculty members (Russell, 2010).

Decision Making Processes.

Engagement in decision making processes occurs when faculty participate in activities that impact work environments and other faculty. This kind of decision making usually happens within departments, but can also occur outside departments. Faculty members participate on graduate committees, tenure and promotion committees, search committees, and graduate admission committees; all of which impact departments as well as the climate in the work environment. Faculty members that value diversity have the opportunity to make significant changes by influencing faculty, students, and other decision makers.

Social Activities.

Engagement in social activity is anything that contributes to collegial relationships and helps to facilitate intellectual exchange and mentoring relationships that creates a sense of community (Huston, et al.2007). Social activity engagement is important because it helps people design inclusive activities. Participation in social activities helps build morale in the
workplace and increase comfort between colleagues. Social activities can include activities such as going to lunch, attending receptions and departmental trips; however, all activities are designed to improve relations in departments. Through participation in social activities faculty share information about research; however, during social activities, faculty also share information about their personal lives.

Mentoring Relationships.

Engagement in mentoring relationships is defined as relationships that help junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al., 2007, p. 516). Dixon-Reeves (2003) defines mentoring as “persons of superior rank, special achievements, and prestige that instruct, counsel, guide, and facilitate the intellectual (or career) development of persons identified as protégés or mentees” (p. 15-16). Positive work relationships improve diversity in departments because colleagues learn about one another personally and professionally. Vital work environments in academia reflect environments that are supportive and that encourage collegiality (Russell, 2010, p. 67). Mentoring is often suggested in diversity initiatives in particular as a way to shape or navigate the socialization process. Mentoring relationships improves work climate conditions because faculty receive support and guidance from colleagues.

Research Method

Qualitative research allows researchers to learn about their participants through shared accounts of experiences within particular contexts. The qualitative approach that was used is narrative inquiry. Lyons & LaBoskey (2002) claim that narrative is more than a story, a teller, or a text, but it is a likely medium to carry a message that is conveyed and learned to
capture the situated-ness, the contexts and the complexities of human action (p. 3). Simply put, a narrative is the primary way humans make sense of their world and share it in many forms like a story, history, conversation, and journal articles (Richardson, 1995). The participants’ specific STEM disciplines were not made explicit to protect the identities of the participants. More substantive discussion on qualitative research and narrative inquiry will be shared in Chapter 3.

**Significance of the Study**

This study is significant for a number of reasons. Scholars and administrators have been working and still are working on increasing and improving diversity in STEM. This study potentially provides insight into the micro or ‘taken for granted’ ways that STEM tenured faculty understand and enact diversity within their specific daily contexts. This study was administered by collecting stories and getting the perspectives on diversity from STEM tenured faculty in their work environments. Knowing that diversity is not an element that is traditionally valued in promotion and tenure, faculty that value matters of diversity shared how they engage in it during their day to day activities. Particularly, in STEM disciplines, where People of Color are still poorly represented (Brown-Glaude, 2009) and women are not highly represented in leadership positions, we need to understand what the barriers are and learn how to overcome them. In this study faculty shared how they process and decide when and how to engage in matters of diversity. The processing of each faculty participant was connected back to their salient lens (i.e. identities in diversity like race, ethnicity, gender, etc.) that informs how they understand diversity and understand their role as a faculty member enhancing diversity in their work environments. Depending on the experience of
faculty, their engagement in diversity can be personal and/or professional. Faculty’s engagement can be personal because they see their work as more than helping their profession but also helping their community or another community. Therefore, faculty take responsibility to engage in diversity but their engagement becomes the central focus to why they are in their profession; as a result, faculty work with others to enhance their careers and also to enhance diversity in their profession. On the other hand, engagement in diversity for the purpose of enhancing faculty’s profession may stimulate a different kind of response from faculty because they may see engagement as their responsibility but they may not see their engagement as central to their work. Therefore, when faculty engage in diversity they do it from a professional perspective or from the perspective of their position but from the perspective of their racial/ethnic or gender identity. This study explored how faculty framed their engagement in diversity from the perspective on their identity.

Faculty experiences were explored from their stories which were very diverse in nature because their stories covered their careers which also meant that each of the participants approached diversity from different perspectives as well as they all had different experiences throughout their careers that shaped how they understood diversity. Further, faculty participants shared how they engaged in diversity on a day to day basis from the three primary focus areas that determine faculty success which were teaching, research, and service.

This study examined STEM tenured faculty at a southeastern research university that is a PWI. Learning from faculty complemented the qualitative intent of this research by providing rich think descriptions of their experiences, and it supported faculty vitality as a
theoretical framework to understand the process of faculty learning how to engage. This research did not give a model on achieving diversity in STEM, but it did give a more holistic approach to understanding faculty engagement because it looked at the four dimensions of engagement (intellectual exchange and collaboration with colleagues, decision-making processes, social activity, and mentoring relationships). Understanding how and why STEM tenured faculty engaged in matters of diversity from the faculty’s perspective gave insight on how to better design diversity initiatives at institutions and how to develop and/or shape policies that enhance and integrate diversity in the STEM academic culture.

Chapter two is an extensive review of the relevant literatures for this topic of STEM faculty perceptions of diversity issues. It includes a deeper look at diversity in higher education and STEM, faculty socialization and faculty vitality. Chapter three gives an elaborate look at how this study was administered based on the qualitative research paradigm and the narrative inquiry. Chapter four gives depth to how faculty understand their roles in terms of engaging diversity by looking at each participant’s profile, experience with and perceptions of diversity within their departments as well as the larger research university. Chapter five presents the findings in the study through a discussion and analysis of the integration of participant’s stories, the interpretation of the researcher and relevant literature. Chapter six provides the findings in the study and explains how it can be used for practice in higher education STEM research universities as well as provides suggestions for follow up studies to build on this topic of study.
Summary

The purpose of this narrative study was to gain a rich understanding from tenured Science Technology Engineering and Mathematics (STEM) faculty on how they engage in diversity during their day to day work duties. Situating the participants’ experience within the framework of faculty vitality, 12 tenured faculty members representing a variety of professional backgrounds, personal identities, and academic ranks were interviewed to understand how they perceive and understand their role in engaging diversity.

Introduced early in this chapter was the definition of diversity and what it encompasses. It is more than race and gender, but also includes how a person thinks and behaves. A person’s culture informs these decisions of behavior and values. STEM fields are highly driven on research and they are also fields that disproportionately struggle with diversity. Thus, this research study was administered at a research university that is a Predominately White Institution (PWI) in STEM departments. Tenured faculty was the population in this study because they have freedom to do other activities in their department without fear of challenges to employment and they have decision making power. Faculty are socialized into their roles within academia by learning gradually from graduate school on into careers (Austin, 2010).

In STEM disciplines, involvement in diversity is complex. STEM disciplines have been characterized as competitive and isolating making it difficult for some to thrive in academia in these types of disciplines depending on their experience. Scientific culture may also affect the composition of the workforce because collegiality plays a key role in networking for success since faculty can serve as collaborators and support for one another.
To better understand how faculty engaged in diversity through their core day to day duties the study was framed through the lens of faculty vitality. Exploring the stories of the STEM faculty gave insight into whether their engagement in diversity was personal and/or professional. Whether faculty’s engagement in diversity was personal or professional was tied back to the salient lens that informed how faculty perceived diversity. Engagement shows how we interact with one another, how we participate in our environments and how the environment influences us. This study provides insight into the micro or ‘taken for granted’ ways that STEM tenured faculty understand and enact diversity within their specific contexts.

The next chapter is an extensive review of the relevant literatures for this topic of STEM faculty perceptions of diversity issues. It includes a deeper look at diversity in higher education and STEM, faculty socialization and faculty vitality. Chapter three gives a detailed description of how this study will be administered based on the qualitative research paradigm and the narrative inquiry. Chapter four gives depth to how faculty understand their roles in terms of engaging diversity by presenting the data-- looking at each participant’s profile, experience with and perceptions of diversity within their departments as well as the larger research university. Chapter five presents and discusses the findings in the study through a discussion and analysis of the integration of participant’s stories, the interpretation of the researcher and relevant literature. Finally, chapter six provides the findings in the study and explains how it can be used for practice in higher education STEM research universities as well as provides suggestions for follow up studies to build on this topic of study.
CHAPTER TWO

LITERATURE REVIEW

Diversity has many definitions. The different definitions of diversity add complexity to how universities achieve a healthy, diverse environment in higher education. For instance Miksch, et al., (2003) defines diversity as “the simple recognition of the existence of different group identities…it includes a variety of social groups and not just race and ethnicity alone. Social group identifications can include home language, religion, gender, sexual orientation, social class, age, and disability as well as race and ethnicity” (p.5). When universities aim to address diversity all of these identities can be challenging to satisfy because universities still have climate issues and historical systems in place. Diversity encompassing other elements such as diversity of thought, culture, dress, add value to diversity but also add challenges to achieving it because these points are often difficult to measure. At a research university where Science, Technology Engineering, and Mathematics (STEM) disciplines are dominant (Carnegie Foundation, 2009) healthy diverse environments have proven to be difficult to establish. Because faculty are the drivers of the culture at a research university it adds to the importance of understanding the engagement of faculty with matters of diversity in their day to day activities.

This literature review will combine relevant literatures that are related to the proposed research as explained in Chapter 1. To support and communicate the value of exploring diversity the researcher will explore the literature on diversity in higher education and diversity within STEM disciplines will also be explained. This chapter will explore how faculty become faculty members by looking at the stages of faculty careers and the related
theories on faculty socialization processes. Additionally, there will be an explanation of the theoretical framework (faculty vitality). The framework informs the study by offering a structure to narrow the examination of faculty work, and the perceptions or understandings of diversity which are embedded or reflected within it. This chapter will close with addressing diversity and faculty, and sharing some strategies to address diversity.

**Diversity in Higher Education and STEM**

**What is Diversity in Higher Education?**

“Diversity in the 1980s became a buzzword in the academy, representing a movement advocating the appreciation and celebration of difference—in culture, ethnicity, gender, race, and sexual orientation—and, at the same time, a critique of the dominance of the Western tradition in curricula” (Baez, 2000, p. 43). Today diversity has taken more meaning and still represents a movement in the academy. Almeida-Neveu, (2010) states that "diversity has many facets—it's related not just to race and ethnicity, but also to socioeconomic status, religion, and, of course, sexual and gender identification. Diversity is not limited to cross racial differences, but also intra-racial differences (Sims, 2006). All of those facets bring valuable points of view to pedagogy and campus life.

Because diversity is so broad it is best to explain diversity in the major thematic ways it is conceptualized. Diversity is conceptualized in the following major thematic ways: membership, recruitment and retention, affirmative action, diversity training, and institutional integration.
Conceptualizations of Diversity

Diversity as Memberships.

Diversity in higher education has been conceptualized to identities meaning memberships in groups or in other words, social identity. To be a member of a group is to identify with the group culturally, historically, and with their struggles and triumphs. Diversity as members allows us to think about groups we are in based on various identities we all possess. While some may not agree with being grouped, groups (i.e. race, gender, sexuality, ethnicity, religion, culture, nationality, disability, age, and other forms of socially recognized identity) have value in our society.

Membership based on race is the most notable in diversity. Institutions intentionally try to hire/recruit based on qualifications, while keeping in mind race and gender. Taking a critical look at race in higher education doors has opened for People of Color and women, but there is still a deficit. Deficit means that the position of People of Color in particular is at risk because many enter academic environment without the normative cultural knowledge and skills to be successful (Yosso, 2005). Brown’s (2004) social dominance theory explains group differential treatment in terms of social hierarchy based on identity. People from different cultural paradigms as discussed earlier are disadvantaged because they may not possess the cultural knowledge needed to fit in. Demographically numbers among race and ethnic groups are still unequal (National Science Foundation, 2009).

Membership based on gender has contributed to mistreatment. For example, Lewin and Duchan’s (1971) identified a trend of discrimination toward women in academia, which impacts gender diversity in academia. Another element that impacts women’s persistence in
academia is women putting their career aspirations on hold to care for family (Bronstein, 2001, pg. 186). Women also have experienced unfair treatment based on pregnancy and how it affected tenure clocks (Wolf-Wendel & Ward, 2006). Diversity is classified but not limited to race and gender. While diversity is still low this can be attributed to the organizational culture of STEM disciplines which is a response to culture in society.

Membership by age is groups that experience discrimination in academia. Old age is a category that most will become a part of which contributes to why it goes unchallenged and even unnoticed in the United States (Nelson, 2005, pg. 3). Older adults are more likely than any other age group to appear in television and film as conduits for comic relief, exploiting stereotype of physical, cognitive, and sexual ineffectiveness (Nelson, 2005, pg. 3). Also low expectation can also be put on older faculty (Bronstein, 2001). Conversely, most senior level faculty are older (50 and above) than younger colleagues. Younger age membership can also receive mistreatment. One perception of younger people is that they are too young to understand. As a person that has experienced this it becomes challenging to engage when people only see you based on your age and also from a disadvantaged racial position. This perception also affects whether or not a person is taken seriously and receiving respect in academic environments.

Membership based on sexuality or sexual orientation has been used to mistreat people. Sexual Orientation has been and still is an area of contention in higher education. Individuals that identified as gay and lesbian for years remained in the closet for safety and to avoid ostracism (D’Emilio, 1991). Times have changed when identifying as gay, lesbian or bi-sexual is socially accepted. While there are centers and movements to empower and
support the gay and lesbian community, sharing sexuality at universities can still result in mistreatment (D’Emilio, 1991). Trans (gender) is appropriately part of the gender category, but is commonly folded in with gay, lesbian, and bisexual category. This group also includes transsexuals that live some or all time as a different gender. This also includes cross-dressers and some would classify as drag kings and drag queens (Beemyn, et al. 2005). Regardless individuals with this membership still experience mistreatment.

Next, is the membership of immigration status. Immigration has been the factor that some have used to decide whether or not a person is entitled to access higher education in our society. Along with immigration status can include memberships based on language, class, and socioeconomics. While it is true there are other membership identity groups but it is important to explore these identities because universities use them to measure diversity.

Diversity as Recruitment and Retention.

Diversity is conceptualized in higher education as recruitment and retention which means that diversity is measured by who universities can attract and retain. Many resources are dedicated to diversifying campus student and faculty populations by designating scholarships, assistantships, startup packages, and other special funds to attract diverse candidates. Literature on recruitment and retention of diverse faculty (in particular) centers on minority populations (Sims, 2006) since identities are visible.

Institutions have implemented programs that strategically recruit members of targeted groups based on race and gender. For instance, institutions have early college programs that expose diverse students to campus life and gains interests of diverse students. Scholarships have been designated for diverse students in particular majors and at institutional levels.
Living communities have been developed to allow students to be among peers that share similarities in identities. For instance, the Cohort model is a method that brings students in as a group to begin a program together, proceed together through a series of developmental experiences in the context of that program and finish together (Agnew, et al. 2008). Even though first generation students are not marginalized, they have hard times transitioning to campus life. In response, campuses have orientation sessions for first generation families with the objectives of helping parents understand the importance of higher education, help first-generation students believe they can succeed and compete with other students, and familiarize students with financial aid, tutoring services and other student support services (Dahl, 2004). See it is these kinds of services that help retain students in academia.

Many initiatives have been developed to improve retention of diverse students. Schools have also gone to the model of hiring diversity coordinators and directors to show their commitment to diversity (Owen, 2009). Campuses have cultural centers that serve as a resource for diverse students by giving them a place to have programs that focus on issues of race and ethnicity. Similarly, centers have been designed for to empower and educate campus communities on Gay, Lesbian, Bisexual, Transgender community.

Mentoring programs have been established for students to get mentored by faculty. Internship programs that provide real-world experience along with a designated mentor have been established (Vega, et al. 2010). As evidenced, measures have also been taken to recruit and retain faculty of color. Faculty of color experience challenges to retention like non-collegiality, tense climate, and non-inclusive culture. The racial climate of the surrounding community can negatively affect the interest of people of color in a particular college or
university (Johnson-Weaver et al. 2010). Small numbers contribute to faculty feeling isolated and dejected (Johnson-Weaver, et al. 2010). Institutions recruit at conferences that involve a high number of future faculty of color. Some programs have developed interdisciplinary programs that give faculty joint appointments in other departments (Johnson-Weaver, et al. 2010). Search committees are pivotal to diversifying faculty because they shape the faculty—and thus the university (Fraser & Hunt, 2011, p.5).

Some of the same types of initiatives have been done for faculty of minority groups. Faculty representing minority groups are often pursued at conferences. Some institutions do target hires to get minorities. The challenge to recruitment and retention is that recruitment tactics used to entice applicants are misleading if the climate is unfavorable (McKay & Avery, 2005). Though people are recruited into institutions historical systems are in place. Also, just as the Cohort Model addresses bringing people in by groups most faculty come in low numbers or alone. Loneliness and isolation is easier to set in when faculty of color are the only representation of their group in their academic environment. Aguirre (2000) notes that minority academics and professionals often find it difficult to thrive in environments when tokenism is the stigma they carry. There are also efforts that are utilized, but do not get the same result as what is espoused to be desired. Ironically some efforts stemming from Affirmative Action have been known to benefit White women more than minority men and women (Aguirre, 2000). There are times when the intent of recruitment does not result in the desire outcome. The limitation to recruitment is it does not deal with the nature of the academic environment. Recruitment and retention does not change people’s attitudes and prejudices (Wrench, 2003).
Diversity as Affirmative Action.

“Institutions of higher education are required to develop affirmative action plans to comply with Title VII of the Civil Rights Act of 1964, which prohibits employment discrimination, and ensures that a diverse pool of applicants are employed and treated fairly during employment without regard to their race, color, religion, sex or national origin” (Sims, 2006). Affirmative action has been used in institutions of higher education to promote policies that consider race, gender, religion, sex and national origin.

Consideration of race in admissions and provision of financial aid have become common practice among institutions of higher education except where it has been banned (Epple, et al. 2008). Throughout history from the 1970s to the 1990s there were numerous court cases that challenged racial consideration in admission policies. The most recent of cases was in 2003, “Gratz vs. Bollinger, where the Supreme Court ruled, against the admission policy for undergraduates at the University of Michigan, while upholding the university’s admission policy to its law school, both policies having elements of racially based affirmative action” (Epple, et al. 2008, p. 476; Gurin, et al. 2007). The linchpin for the Michigan case was that educational benefits are produced from diverse student bodies because it promotes cross-racial understanding and breaks down stereotypes, which better prepares students for a diverse workplace and society (Epple, et al. 2008: Anonymous, 2005).

Systemically, affirmative action has opened the doors so that populations of people that would otherwise not be able to attend certain schools have an opportunity (Anonymous, 2005; Bunzel, 1992; Oh & Choi 2010). Oh & Choi (2010) suggest that a significant number of individuals, mostly White, oppose race-based affirmative action policies because their
belief is that these policies unfairly discriminate against nonracial minority students and restrict their chances in gaining admission into college (p. 163). Bonilla-Silva (2006) notes that color blind racial ideology is what feeds the belief that racial discrimination is something of the past.

Affirmative action programs are intended to ensure that job applicants from underserved racial and ethnic minority groups are given a fair review for employment (Gold, et al. 2010). Ensuring that there is a diverse participant pool on various committees is one way of giving fair opportunities at employment and entry into programs. To accomplish this, search committees can meet with diversity officers who understand university missions. Jobs can be advertised in journals and periodicals that reach minority membership groups.

Diversity as Diversity Training.

Diversity is conceptualized in diversity training meaning that diversity training provides an impetus for institutions to address matters of diversity. Diversity training is defined as a session that gives participants a better perspective on people different from themselves as well as allows for self-evaluation about personal beliefs and perception of others (Ewers, 2008). There is not much empirical research on diversity training; however, according to King et al. (2010) research consists of subjective and conceptual discussions and personal anecdotes or observations (p. 893). According to Ewers (2008) the most important part of diversity training is it reaffirms psychological changes one can make. Change is difficult for people to accept, but once a person has accepted the obligation of as an agent of change Ewers (2008) indicates that they have an obligation to engage in activities that will impact work environments.
King et al. (2010) provides some best practices for diversity training. First, always administer a needs assessment; second, training programs should take into account the context in which they are situated; third, the training workshops allow learners to achieve behavioral goals and gain knowledge (King et al. 2010, p. 894). Workshops can help faculty in particular to think about their practice as researchers, professors and colleagues. High quality diversity education should impact the following: student faculty contact, cooperation and reciprocity among students, and active learning (King, et al. 2010) and change how faculty do activities day to day (Ewers, 2008). Diversity training can help faculty in knowing oneself, increasing aware of one’s past socialization, and examining one’s beliefs, attitudes, and assumptions (Sciame-Giesecke, 2009). In addition, diversity training can help faculty analyze how they teach, broadening teaching strategies to address multiple learning styles and developing classroom norms that emphasize respect, fairness and equity (Sciame-Giesecke, 2009). Diversity training can also help faculty learn how to embrace diversity and recognize their role in changing organizational climate (Hill et al. 2011).

Diversity as Institutional Integration.

The final conceptualization of diversity in higher education is institutional integration. In this study institutional integration will be defined as integrating diversity throughout the curriculum and it will refer to student development. Research shows that engaging diversity in curricula, along with linking classroom and out of class opportunities, positively affects students’ attitudes and awareness about diversity (Sciame-Giesecke, 2009). Incorporating diversity into the pedagogy suggests expanding teaching strategies to include dialogue and active consideration of multiple cultural perspectives (Elicker, et al.2009).
According to Hurtado (2003) and Bowman (2009) students that engage in diversity coursework show greater gains in moral reasoning that improve their critical thinking skills.

**Diversity in STEM**

What is Diversity in STEM?

While sweeping forces of globalization and the growing demographic diversity of our student populations create a mandate for change, institutional mission statements, in fact, rarely reference the value of a work environment that supports diversity (Chun & Evans, 2008). Research has documented the underrepresentation of women and members of minority racial/ethnic groups in the STEM fields (Blackwell, et al. 2009). Chun & Evans (2008) quoting Drs. Prilleltensky and Gonick say that “defining characteristics of reciprocal empowerment are recognition that derives from respect; reciprocity that is two-way and empowers those who are empowering others; and sponsorship that assists women and minority faculty and staff to overcome barriers, surmount criticism, build confidence and be successful“ (p. 23). In STEM fields there is a still a struggle for that reciprocal treatment among colleagues. Xu (2007) posits that STEM culture is exclusive and lacks collegiality (p. 609) which makes it challenging for others to succeed.

In 2006, women held the same low percentage of full-time tenured track positions in STEM as they did from 1958-2004 (Hill, et al. 2011). Only 10% of these positions were held by underrepresented minorities: African-American, Native Americans, Alaskan Natives, Native Hawaiians, and other Pacific Islanders, Hispanics) (National Science Foundation 2009). Interestingly, African American STEM doctorates were more likely than any other racial/ethnic groups to be employed in non-Ph.D. granting colleges and Universities
Moreover, only 7% which equals 59,000 of the 768,000 faculty employed at four-year institution were disabled (National Science Foundation, 2009). For many years Science and Engineering (S&E) workforce has been predominantly male and overwhelmingly white and Asian (COSEPUP, 2011, p. 22). STEM fields have power in our culture, and it is the opinion of some theorists that they reflect and ultimately reinforce the levels of societal inequity (Blackwell, et al.2009). There have been increases in the number of women and international students in these fields and careers, but minority women have not fared as well as white women in the S&E workforce, but have shown greater increases in degree production (COSEPUP, 2011; Glass & Minotte, 2010). In 2006, 26 percent of employed scientists were women (69% white, 11% minority) (COSEPUP, 2011); nonetheless, in academia, 33% of tenure track faculty were women and only 10% were full professors (Glass & Minotte, 2010). Non-U.S. citizens, particularly those from China and India, account for almost all growth in STEM doctorate awards (COSEPUP, 2011, p. 39). These numbers are important to share because underrepresented minorities make up 28% of the U.S. population and only 9 percent of the S&E workforce (COSEPUP, 2011, p. 24).

Participation of underrepresented minorities in STEM is affected by trends in tuition (COSEPUP, 2011). Merit based programs contend that low-income students are disadvantaged and attend schools that have low resources to support academic excellence, (COSEPUP, 2011, p.107). Engineering and natural sciences have the smallest percentages of faculty of color (Snyder, et al.2008). In the fall of 2003, only 2.6 percent of the total faculty was Hispanic as compared to 20.1 percent Asian/Pacific Islander while Black faculty was the
highest in education at 7.8 percent (Tuitt, 2010, p. 2228). There are gender disparities in engineering, natural sciences, and business disciplines; for example, 8.5 percent of the full-time faculty in engineering in is women (Tuitt, 2010). This problem is not just in academic ranks, but starts with undergraduate education. According to Tsui (2007) underrepresented (African American, Hispanic/Latino American, and Native American) students are more likely to start off in the sciences and less likely to finish by transferring to education. Low participation of underrepresentation in STEM fields can be attributed to barriers based on cultural (social expectations), structural (historical laws and regulations that barred entry into education and employment), and institutional nature (discriminatory policies and practices) (Tsui, 2007, p. 555).

Interestingly, faculty members experience the same things that cause students to want to leave a discipline or institution. Trower (2003) says that research provides evidence on low persistence rate of faculty of color in STEM. Experiencing overt and covert racism including stereotyped and pigeonholed; isolation and exclusion and lack of collegiality, networks, and mentors; marginalized and their research is devalued; burden of tokenism and feeling like they have to be the exemplar for their race; and to be perceived as the affirmative action hire. All of these contribute to low persistence of faculty of color in. Institutional climate and culture can influence satisfaction, advancement and retention rates of underrepresented faculty bears true (Tuitt, 2010).

To counter this, financial aid programs were designed and admission policies drafted to help address this disparity. State Government financially supports advancement of diversity in STEM. Other programs like Pell grants (Need-based) and foundation fellowships
help support diversity in STEM. The federal government plays a major role in support for students in STEM programs in supporting graduate level studies. Graduate research fellowships have been supported by the National Science Foundation (NSF) ($93.36 million); integrated Graduate Education and Research Traineeships (IGERT) ($65.42 million); graduate teaching fellowships in K-12 Education, (NSF) ($50.65 million) and other programs (COSEPUP, 2011, p. 117). Diversity is seen as a resource for our society and economy because it increases the number of perspectives and the range of knowledge (COSEPUP, 2011), yet diversity in STEM is still needs improvement.

One reason that diversity in STEM is still struggling, is because minorities and women still rely on gender-segregated social and professional networks to get information about job availability which generates inequities (Glass & Minotte, 2010). Another reason diversity is struggling to be actualized in STEM is because STEM is characterized as competitive and isolating (Xu, 200b). Those that enter are coming into a culture that is not necessarily collegial and supportive (Xu, 2008). Individuals who are demographically different than others may experience discrimination more frequently than the majority populations (Blackwell, et al.2009). Minorities and women still have to battle against stereotypes about them and systems that are against them (Bavishi, et al.2010). Maher & Tetrault (2007) claim that “racism in our society today is less the product of individual prejudicial attitudes or antipathies and more the result of the taken-for-granted assumptions, norms, policies, and practices that structure our social lives” (p. 169).

To reiterate, theorists suggest that due to the status of STEM fields as powerful institutions in our culture, they reflect and reinforce levels of societal inequity (Fox, 1999).
Discrepancies in proportions of women and racial/ethnic minorities and in work experiences show the underlying issues of inequity that hold the systemic inertia in place that can harm organizations and employees (Blackwell, et al.2009). Stanley & Lincoln (2006) suggest that faculty of color face challenges even with student attitudes and faculty behaviors as well as questioning their authority and credibility in the classroom. Tuitt (2010) says that underrepresented faculty members are more likely to be scrutinized and held to higher standards which go beyond classroom boundaries and impacts growth and departmental diversity. Women in the workplace may face particular pressure from work–family imbalance; in addition, in STEM departments, discrimination, mentoring inaccessibility (Blackwell, et al.2009). All of these discrepancies exacerbate the challenges of workers from marginalized groups. Therefore it is evidenced that diversity in STEM is not just a problem because of history, but because of present systems and culture.

Culture in STEM disciplines impact who pursues the areas as a profession. For instance, men are more likely than women to be engineers and computer and mathematical scientists, and women are more likely to be in engineering related disciplines (Falkenheim & Burelli, 2012). Asians are more likely than other racial/ethnic groups to be computer and mathematics and less likely to work in non-science and engineering occupations (Falkenheim & Burelli, 2012). In science and engineering industries males have higher levels of education than their female counterparts. On the hand in education and teaching in academia women are more likely to be in this profession. Research has also shown in management in science and engineering there are differences in age groups (Falkenheim & Burelli, 2012). Women are younger than men in engineering industry managers and people from minority groups are
younger than whites, but minority groups of men are rarely top-level managers. Women are more likely to thrive in psychology and the medical sciences (National Science Foundation, 2011). Conversely, minority women earned more than half of degrees among women in comparison to white and Asian women (National Science Foundation, 2011). Industry is different than academia and the research presents that not all STEM disciplines either attract or retain the same concentration in different groups.

**Becoming a Faculty Member**

The socialization literature indicates that people are socialized into roles (Danielson, 2004). With regard to faculty socialization career stages and environmental norms impact engagement within institutions (Austin, 2010). There are other factors that act upon individuals’ processes which shape careers and lives and faculty identity development is one theory that explains this because it addresses the dynamics in how faculty view themselves in their environments (Blackburn, 1985; Zeller, et al., 2008). Faculty members are impacted by their colleagues, students, institutions and their personal lives. The lack of diversity in leadership among faculty members also affects mentoring because the expectation or interaction is based on the mentor’s experience and not inclusive of the mentee’s experience (Zellers, et al., 2008). Therefore, in this section the researcher will explore faculty based on the following: what is a faculty member is, ways that faculty learn their roles and how is a faculty member socialized.

**What is a Faculty Member?**

“Faculty improve the educational vitality of our institutions through attention to the competencies needed by individual teachers and to the institutional policies required to
promote academic excellence” (Wilkerson & Irby, 1998, p. 387). Some institutions say that faculty are a community of achievers and leaders and this diverse group of professionals with rich experience and expertise, have students that count on them to bring learning to life with lessons that drive real-world application (Tight, 2003). Rousseau and Tijoriwala (1998) posits that a psychological contract is a balanced relationship between employee and employer. Faculty enter understanding they are part of a bigger movement in their discipline. Rubeck & Witzke (1998) say that faculty members do not just teach education, but advances educational programs.

Weidman and Stein (2003) look at faculty as a scholarly profession, which is primarily focused on the advancement of knowledge. The qualifications of faculty generally vary by institutions type (research university or teaching) and discipline. Bowen and Schuster (1986) provide qualifications that make an overall qualified faculty member:

(1) superior general intelligence;

(2) sound general education: (a) ability to communicate correctly and effectively in speaking and writing (b) intellectual curiosity (c) open mindedness

(d) breadth:

intellectual and cultural interest beyond their special fields;

(3) mastery in the field: (a) knowledge of the literature, ability to interpret it, and the energy and motivation to keep up to date, (b) ability to give cogent lectures, to discuss issues, to hold reasoned opinions, to write book reviews, and to prepare essays and memoranda, (c) knowledge to be a successful practitioner;

(4) self-motivation: works hard in an environment with little direct supervision;
(5) Rapport with students: patience, ability to elicit cooperation and respect, and plausibly to serve as exemplar to some; and

(6) personage, not a nonentity (p. 26-27).

These qualifications are taxed by a rapidly changing work environment due to the rapid advances in technology which expect professors to provide students with a broad repertoire of skills (Lee, 2001). This description helps understand faculty diverse ways because they affect students, faculty counterparts, colleagues throughout disciplines, and their institutions overall. The vital role that faculty have at academic institutions is something that is learned and not something that faculty just become.

**Faculty Career Stages**

According to the literature faculty are set to have three stages: Early Career Stage, Mid-Career stage, and Late Career stage (Austin, 2010; Schuster, et. al, 1990; Bowen & Schuster, 1986; Tierney & Rhoads, 1994).

**Early-Career.**

Austin (2010) defines early faculty within the first seven years of faculty appointments or those who have not yet been awarded tenure. Schuster, et al. (1990) says at this phase new faculty are more innovative, creative, and more engaged in their work. They are unbridled by years and focus more on promotion and competence (Schuster, et al.1990; Tierney & Rhoads, 1993). During this stage “faculty find a specialization, moves up professionally, and makes a name” (Schuster, et al.1990, p. 25).

In the early career stage faculty attempt to meet others’ and their expectations between work and personal domains (Colbeck, 2006). Reybold (2008) suggest that “early
career faculty members, having little training and even less experience, are left to rely on personal standards of integrity when faced with professional dilemmas” (p. 280). It is Colbeck’s (2006) position that gender plays a role in how faculty use their time; for instance, depending on family dynamics, for women, family can impact their time at work more than men. Lewis, et al. (2007) notes that equal weight to personal and professional life is not necessarily optimal for everyone and instead people integrate work and personal lives to balance life. For this reason individuals are flexible and go between roles (Colbeck, 2006; Clark, 2000) both work and personal. When faculty are not constrained to a set time schedule and a set location they are able to be freer with their work and accomplish more in their life roles (Colbeck, 2006). Even with this understanding of how integration and flexibility make faculty life easier to manage there are still struggles for some especially in the early-career stage. These challenges seem to be particular to certain identities race and gender.

“Scholars of color in their early years on the job reported experiencing loneliness, isolation, competition, and sometimes incivility” (Trower, et al.2001, p. 5). Young scholars struggle with balancing their ideas about life in the academy with tenure and the realities of getting a job, doing meaningful work, and trying to lead a balanced life (Trower, et al.2001). Further, Trower et al. (2001) says there is no clear understanding of how the actual tenure process worked, exactly who was involved, how to compile their dossiers, or the timeframe for specific steps along the way.

For women in particular, the challenge is battling the perception that they are not doing the work, but their male counterparts are helping them (Creamer, 2006, p. 82). Ironically, women make up the majority of university, but the numbers dwindle as women
progress into full time faculty positions and lower as you move to associate to full professor (Dean, 2009). Advancing to, surviving, and thriving in academic leadership depends on personal choices almost as much as on professional strategies. For example, women set high standards for themselves; they lead from a value-based core; they seek continuous learning; formally and informally, throughout their careers; they are concerned about balance in their lives (Ummersen, 2009). Dean (2009) notes that barriers women must overcome come from the assumptions in American society concerning leadership behavior and what leaders should look like.

Tuitt (2010) says at this phase with underrepresented faculty the four areas that are important are the following:

1. **access and equity** refers to the compositional representation and success of underrepresented faculty;
2. **campus climate** considers the development of a supportive organizational climate;
3. **diversity and teaching** encompasses the experiences of underrepresented faculty in a teaching context; and
4. **growth and development** concerns the professional development of underrepresented faculty in research, scholarship, promotion and tenure (p. 226).

Other issues come with this career stage because faculty are said to feel isolated and lonely in their work environments because of a lack of collegiality (Tierney & Rhoads, 1993; Austin, 2010). New faculty also claim a lack of time for scholarly work with hectic time constraints and high amounts of stress (Tierney & Rhoads, 1994) make attaining tenure difficult.
Tenure.

Tenure process varies depending on institution types, but it is mostly based on (but not solely these criteria) institutional priorities, departmental requirements, senior colleagues assessment, teaching, service, and journal publications (Austin, 2010; Tierney & Rhoads, 1993). Sometimes requirements for tenure are unclear (Tierney & Rhoads, 1993; Austin, 2010). At this stage, academic responsibility according to Dobson (1997) is when one examines the political correctness in a university context and it leads to a review of academic freedom. Faculty are able to do what they want now that they have earned tenure. Moreover, advancement in the academy still has some inequities when it comes to gender and race. Black, Hispanic, Asian/Pacific Islander, and American Indian/Alaskan Native comprise on 16.3 percent of full time instructional faculty on a national scale and only 12.3 percent of the total full professors (Tuitt 2010, p. 228). Numbers indicate that underrepresented faculty of color and women are limited when it comes to promotion and tenure (Tuitt, 2010, p. 232). Mason, et al. (2010), mentions that while women make up half of the U.S. Ph.D.’s only 26% of the associate and full professors are women. Therefore, it is evidenced there are barriers in the academy toward advancement for women and people of color to advance to the mid-career stage.

Mid-Career.

Mid-career faculty members are those that have advanced passed the probationary period and have been awarded tenure with its promise of job security (Austin, 2010, p. 365). It is important to note “those earning tenure could be young faculty seeking their first appointment to tenure and others are more senior that have relinquished a tenured
appointment at one institution and must undergo another, usually shorter probationary period at another institution” (Bowen & Schuster, 1986, p. 45). At this level it is called mastery of work (Schuster, et al.1990) yet some carry heavy institutional service responsibilities, and are tapped for leadership roles (Austin, 2010). Mid-Career is a time for reexamination of personal values as well as professional concerns (Schuster, et al. 1990) because sometimes depending on the age of the individual they need to make some adjustments (Austin, 2010).

Baldwin and Chang (2006) call Mid-Career faculty keystone faculty because they bridge new faculty to senior faculty. They are also essential to the institutions development. Challenges occur generally during this period. “Women and underrepresented populations face barriers because of historical, cultural, and social factors that have shaped their experiences and development in American society” (Turner & Kappes, 2009). Pervasive racist and sexist attitudes continue to limit educational opportunities for women and people of color (Turner & Kappes, 2009). In particular, women still struggle to move up in academia after earning tenure. It is evident because women in all senior positions in higher education are still underrepresented (Walton & McDade, 2001).

For many faculty members this period is most productive, because leadership roles are assumed and management roles are established at their institutions (Baldwin & Chang, 2006). During this time faculty often reflect on their experience and reassess their commitments and paths through life (Baldwin, et al.2008) as they decide what’s next after leaping over a major hurdle. The absence of motivating professional goals can cause faculty to settle into a less than productive routine; however, universities are starting to require permanent faculty to take on service and leadership roles (Baldwin, et al.2008).
Mid-career faculty have common challenges of meeting heavy expectations like participating on committees (Austin, 2010). In addition, mid-career faculty are also in high demand to maintain vibrancy and enthusiasm about their work, thus ensuring a steady flow of grant funds and protecting pre-tenure colleagues (Baldwin, et al., 2008). Changes in student body and fast pace technology create more challenges for mid-career faculty to stay abreast on ways to reach students. With this current position even with challenges these individuals still have the extensive knowledge of the organizational culture and history, and are in position to shape the reality of others (Tierney & Rhoads, 1993, p. 53). During this time faculty are more involved in workshops and other programs to increase and maintain productivity to stay relevant in rapidly changing work environment (Camblin and Steger, 2000).

Late Career.

The Late Career stage is within ten or twelve years of retirement (Austin, 2010). Schuster, et al. (1990) notes that these individuals are beyond the point of maximum productivity, but their knowledge and experience enables them to make valuable contributions (p. 26). At this phase faculty can participate in workshops that focus on mentoring not just younger faculty, but also students (Tierney & Rhoads, 1993). At this point these individuals are academic leaders or scholars in their fields/disciplines and can serve the academic community by mentoring younger faculty that bring fresh perspectives and new ideas (Austin, 2010). Some faculty take sabbaticals and leaves of absence to renew themselves at this stage. Some institutions offer phased retirement opportunities, which allow faculty to change job responsibilities ending in full retirement (Austin, 2010).
Senior faculty must consider career plateau because this can happen where there is no growth or movement in content or structure (Schuster, et al.1990). Plateaus develop whenever work is routine or no longer engrossing (Schuster, et al.1990). Austin (2010) says a good way to counter this is to keep these faculty members talking with chairpersons and faculty development directors about decisions making as they approach new phases or retirement.

Now that the faculty career phases have been explored more depth has been given to what faculty will encounter once becoming faculty. Next, what is needed is to understand how faculty learn their role.

**Ways that Faculty Learn their Roles**

Faculty learning theories have changed at various periods. Ouelett (2010) provides a good overview on how faculty learned to be faculty. In the 1950s-1960s faculty had programs that focused on scholarly expertise which reflected in publication rates (Sorcinelli, et al. (2006). Later in the 1970s more attention was given to the development of research skills through exposure to theory and practice while teaching was thought to come naturally and automatically as one’s scholarship increased. From the 1970s into the 1980s teaching became the focus and more foundations started focusing on the changing state of undergraduate education (Ouelett, 2010). In the 1990s there was a shift in teaching and instructional development to include student centered pedagogical methods such as collaborative and problem solving approaches (Ouelett, 2010). Sorcinelli et al.(2006) proposed that we entered into the Age of the Networker in the 2000s where faculty are called to network with faculty and institutional leaders to respond to institutional problem and
propose constructive solutions to meet new challenges. In all of these eras learning how to be faculty was based on what was required to satisfy the criteria to be successful in that time at that institution. However, while faculty learn on the job, literature shows that their learning starts earlier.

Graduate School Experience.

Faculty first began their learning as graduate students. Processing for graduate students includes information that causes changes in their understanding of what graduate school is about, and also what it takes to be in the academy. A graduate student transitioning into graduate student life shows the following:

(1) intellectual mastery which comes through gaining competence through coursework and work settings “Can I do this?”;

(2) learn the realities of graduate student life “Do I want to be a graduate student?”;

(3) learn about the profession one is preparing to enter “Do I want to do this work?”;

(4) and integrating oneself into the department and this is where relationships with faculty, staff, and peers play a critical role “Do I belong here?” (Golde, 1998; Austin 2002, p. 57).

Other factors specific disciplines contribute to how graduate students learn because “each discipline is unique in how they legitimate research, research questions, research methods, and how to develop relationships between students and faculty” (Austin, 2002, p. 96). The cognitive and affective dimensions of the faculty role differ in the organizational structure (Weidman & Stein, 2003). The cognitive dimensions are the knowledge and skills of a role which are prevalent because they are the goals of the department while the affective
aspects are less formally expressed (Weidman & Stein, 2003, p. 644).

Graduate students can gather information on how to be a faculty member in different social and academic environments. Graduate students can learn teaching techniques by viewing faculty in the classroom or as a teaching assistant. Austin (2002) suggests that graduate students can learn departmental policies, teaching philosophies by observing faculty members’ behaviors, including how they allocate their time across responsibilities (p.104). Those responsibilities can include committee work, advising, outreach, research, and teaching.

Development of graduate students is not a linear process because they usually bring other influences with them. Graduate students may have professional experience, as well as personal influence like family or other groups (Weidman & Stein, 2003). Graduate students often negotiate their time to what is more important in academia, teaching or research and they also struggle with balancing time between personal responsibilities and academic responsibilities. Thus, a graduate student also struggles with trying to do exemplary academic work by earning top grades and passing other departmental thresholds, while trying to develop their scholarship and publish before program completion.

Faculty Mentoring.

Dixon-Reeves (2003) defines mentoring as “persons of superior rank, special achievements, and prestige instruct, counsel, guide, and facilitate the intellectual (or career) development of persons identified as protégés or mentees” (p. 15-16). Faculty socialization can be viewed as an apprenticeship model because graduate students are socialized into the profession by a mentor (Bieber, 2006). Bieber (2006) suggests in graduate students to faculty...
mentor relationship model, the graduate students will become a scholar teacher (p. 1010). Lee (2001) asserts that if a graduate student watches what their advisers do, they will become prepared faculty members. Lee’s position can also be used on the opposite end of the spectrum because graduate students can also learn what not to do in the academy.

Mentoring relationships are critical in a student’s development. Kram (1983) conceptualizes mentoring as including sponsoring, coaching, and protecting the protégé. According to Schnaiberg (2005), genuine mentoring requires a deeper relationship with a student than just advising. Both the mentor and mentee must reveal more about themselves to break the barriers that enable anxiety to rise and allow more openness between both parties. Cawyer et al. (2002) paraphrased Anderson & Shannon (1988) Toward a conceptualization of mentoring) by extending mentoring to a three part model: “

1. the mentor acting as a role model, nurturer, and caregiver;

2. five functions of mentoring are identified teaching, sponsoring, encouraging, counseling, and befriending that incorporate both career and psychosocial elements of the process; and

3. the activities in which a mentor should engage are as an observer offering feedback” (pg. 226).

Dixon-Reeves (2003) notes that mentors serve as peer counselors, advisers, role models, sponsors and coaches to their protégés (p. 16). Peer counselors share resources; an adviser is someone with mutual interests that guides the graduate student through the program; a role model is someone to model after and provides informal and formal instruction on day-to-day activities; a sponsor uses their network and influence to provide
opportunities; and a coach shares wisdom and experiences and emotional support throughout the graduate process result in the graduate student understanding what it takes to be a successful faculty members and a scholar which should manifest once they get into their organization. Since faculty development can vary at different institutions and within different disciplinary areas programs have been developed to help universities better prepare future faculty.

**Established Programs that Prepare Faculty**

While faculty socialization has been explained it is important to address how schools intentionally prepared graduate students for academia. This section will cover a couple of program designed to prepare faculty.

Preparing Future Faculty.

By the mid-1980s, several research universities had begun to initiate programs that addressed the training of graduate students to teach on campus as future faculty (Border & von Hoene, 2010). During this time, Pew Charitable Trusts funded a conference on the training of Teaching Assistants (TAs), faculty, and as leaders in the private, governmental, and nonprofit sectors (Border & von Hoene, 2010). By 1995, the counsel of Graduate Schools and the Association of American Colleges and Universities had acquired funding from the Pew Charitable Trusts to offer grants for Preparing Future Faculty (PFF) Program. PFF gave graduate students a competitive edge over non-participating graduate students because the participants were exposed to pertinent information on how to be successful in academia. Participants hear from department heads, deans and newly hired faculty about experiences in the interview process, employment strategies, and bids for tenure (Lee, 2001).
PFF exposed students to sources on how to better serve public constituencies and how to venture out of their departments (Gaff, 2002), as well as how to help graduate students successfully negotiate the job market (Adams, 1992).

Another program that was developed to help better prepare graduate students for the professoriate was the Center for the Integration of Research, Teaching, and Learning (CIRTL). This NSF funded program was designed to influence doctoral education across the country by preparing doctoral students for teaching and research. This was accomplished through partnering doctoral students with post-doctoral research and current faculty to meet future challenges of national STEM higher education (Austin, et al. 2008). CIRTL was based on three pillars: teaching-as-research, learning communities, and learning through diversity. Teaching as research involves reflective use of research methods to develop and implement teaching practices that advance learning experiences for teachers and students (Austin, et al. 2008). Learning communities bring individuals together to achieve learning goals by linking learning to life situations beyond specific programs (Austin, et al. 2008). Lastly, learning through diversity helps graduate students, post docs, and faculty learn more about the diversity of students builds on the diversity to enrich learning of all participants and enhances their use of assessment practices that encourage learning for all students (Austin, et al. 2008). Graduate students also learn from faculty members (Dixon-Reeves, 2003; Austin, et al, 2008; & Schnaiberg, 2005) by developing skillsets and mindsets as they progress in their careers.

Learning once Employed as a Faculty Member

Faculty learn after entering academia. Tierney & Bensimon (1996) claim that
organizational socialization begins when a new faculty member enters the organization (p. 633). Tierney & Bensimon (1996) notes that faculty development on the job is a rite of passage that begins with probationary membership in the department and concludes, if one is successful, with the granting of lifetime tenure or, if unsuccessful, with immediate termination. Cawyer & Friedrich, (1998) characterize entry, by limited interactions between the newcomer and organizational members and by ambiguity concerning institutional expectations.

The disparity between perceptions of socialization during the job interview and at the time work begins is not surprising (Cawyer & Friedrich, 1998, p. 242). The red carpet treatment is usually given to attract a faculty member. The real interactions begin once a new faculty enters their organization (Tierney & Bensimon, 1996, p. 633).

“It is imperative that upon arrival at their new academic institution, faculty gain knowledge of both the informal and formal guidelines regarding institutional values and role expectations, particularly as they relate to the promotion and tenure process” (Johnson, 2001, p. 637). Meeting with key people in the department is a crucial component in the socialization process indicating that informal and formal colleague support is necessary if new faculty members are to have a positive socialization experience (Johnson, 2001).

As complex as a faculty role is the needs and values of the faculty are changing at every stage of the career path (Ouelett, 2010, p. 10). How faculty handle these changes at the different phases can be better through understanding socialization.

Socialization of Faculty

Faculty learn their roles from other faculty and according to the socialization
literature, faculty’s learning starts in graduate school (Tierney & Rhoads, 1993). In graduate school faculty learn how to do research and as faculty they learn how to be collaborative with others. Faculty have so many responsibilities in their work environment, but they do not take a class in graduate school that teaches how to be a faculty member. Conversely, faculty are held to utmost scrutiny about reaching milestones that lead to promotions and success within their disciplines. Relationships are very important for faculty success because in order to be a leader a faculty member must be known in their discipline. Faculty must know who they can work with and how to build research programs that support graduate students. Various theories of socialization will be shared to explain how faculty learn their roles.

Socialization and Culture.

Socialization is heavily referenced in the literature to Van Maanan (1976) which says that socialization is the process by which a person learned the values, norms and required behaviors which permit him to participate as a member of the organization (p.67). Merton (1957) offers a different view of socialization within a society and applies it to an organization. Merton (1957) notes that culture is the sum of activities in the organization, and socialization is the process through which individuals acquire and incorporate an understanding of those activities. Bragg (1976) asserts that socialization is a process by which individuals acquire the attitudes, beliefs, values, and skills needed to participate effectively in organized social life. These definitions all center from a schema of a process by which a person learns from the behaviors of other individuals. The other interesting observation is that these definitions all approach socialization from a societal stance and is then narrowed to fit an organizational perspective. Organizations exist through the
composition of its members and members influence the organization.

According to Tierney and Rhoads (1994) organizations are social constructions (p. 1) while Wanous (1992) asserts that organizations have formal structures such as policies, rules, and decision making committees as they also have informal codes and expectations that constitute the organizational culture (Tierney & Rhoads, 1994). Tierney and Rhoads (1994) explain that organizational culture shape members’ behavior while the culture is shaped by the actors (members) (p.1). Therefore, colleges and universities are social institutions, because they have their own organizational culture (Tierney & Rhoads, 1994, p.1).

Socialization according to Merton (1957) combines an individual learning the culture of an organization while Van Maanan (1976) talks about norms and Bragg (1976) references social life. The direction of the influence in these definitions is organization or society to the individual.

On the other hand, Jones (1983) takes three things into consideration with socialization:

(1) effects of individual differences and

(2) the effect of the process between organization and individual and

(3) individuals as active participants in their own socialization experience.

This definition is more inclusive because it acknowledges that each individual is unique and that the process affects the individual, but also puts a responsibility on the individual in their own process. Successful socialization cannot occur if the individual resists norms and behaviors that are exhibited in the environment. Society can be synonymous to work environment and since this research is about faculty there is a focus on the academic higher
education environment.

Colleges and universities are socially constructed. Since this research is focused on faculty the students’ perspective will be briefly addressed. Students operate in subcultures and group associations. Clark and Trow (1966) identified four student subcultures that student’s exhibit: collegiate culture, vocational culture, academic culture, and non-conformist culture. Just like students have culture, faculty do as well and that culture (disciplines and culture) play a role in shaping faculty behavior (Austin, 2009; Tierney & Rhoads, 1994). Interestingly, while some literature talks about socialization as a one-way process, Tierney and Rhoads (1994) claim that socialization is bidirectional because just as much as the organization influences the individual the individual also causes the organization to change. Faculty play a strong role in the formal and informal life of the institution (Tierney & Rhoads, 1994).

Tierney & Rhoads (1994), discuss dimensions of organization socialization that is explains the impact that both the organization and the individual experience. Collective vs. individual look at socialization on a group of recruits contrasted with a socialization on an individual. In a collective a group is brought together who face a common set of experiences together while individual socialization is when new members process their experience in isolation (Tierney & Rhoads, 1994, p. 27). Faculty usually experience socialization as individual. According to Tierney (1996), socialization is for the recruit to learn the culture. The new faculty member needs to learn what is expected of him or her with regard to the virtually every aspect of the job (Tierney, 1997, p. 4).

Faculty socialization in academic environments.
Socialization teaches the norms it takes in order to be successful in an environment. Austin (2009) defines socialization as the processes a person goes through to develop a sense of attitudes, knowledge, and skills to govern themselves in professional situations. Gardner (1963) says that socialization is the process which individuals acquire and incorporate an understanding of cultural activities. Saks, et al. (2007) claim that socialization is how newcomers adjust to the new surroundings and learn the behaviors, attitudes and skills necessary to fulfill their roles and function effectively as a member of an organization (p.414). Using this definition then faculty members learn how their roles by working with others in their academic departments and they also learn what’s important based on the institutional goals.

Anticipatory socialization.

Two models that best help in understanding the faculty socialization process is Clark & Corcoran’s (1985a) model and Tierney and Rhoads (1994) model. Both models have one of the same phase anticipatory socialization. Clark & Corcoran (1985) define anticipatory socialization as the process “by which persons choose occupations and are recruited to them, gradually taking on values of the group to which they aspire” (p.134). Preparatory learning, choice making, value assuming and reality congruence measuring go on during this phase (Clark & Corcoran, 1985b, p. 135). Clark, Boyer, & Corcoran’s (1985) model is useful for understanding graduate students that are socialized into faculty members because at that end of their studies they are looking for places to work and to continue their professional development. Understanding the politics of the work environment and more about what it takes to be successful helps potential faculty learn how to operate in the work environment.
Anticipatory socialization according to Tierney and Rhoads serves to explain faculty socialization in graduate school as well as when faculty first enter the work environment because it takes on three functions: to help the individuals adopt the values of the group he or she wants to belong, aids him or her into the group, and eases his or her adjustment after they are established in the group (p. 23). Junior faculty in the anticipatory socialization phase must learn about teaching, research, publishing and outreach, all of which contribute to their success in their department. Teaching requires the ability to convey information to students and guarantee their mastery. Active research demonstrates that faculty members are scholars in their field and have zeal to learn more about their discipline. Successfully securing grants to support research also illustrates faculty’s scholarship. Publishing is the sign that a faculty member develops scholarship because peers find value in their work. Outreach is the ability to extend oneself outside of their department and engage in activities that contribute to community growth. All of these activities as well as leadership are considered in performance criteria (Gappa, et al., 2005).

Occupational entry & organizational socialization.

Clark & Corcoran (1984) identify the second stage of faculty socialization as occupation entry while Tierney and Rhoads (1994) identify the second stage as organizational socialization. Occupational entry and induction includes or is preceded by “formal schooling, preparation, or training for the occupation, and/or mediated entry, and/or learning while doing” (Clark & Corcoran, 1985, p. 135). Organizational socialization has two phases: initial entry and role continuance. Entry phases involves interactions that may occur during recruitment and when the faculty member first enters the organization (Tierney &
Rhoads, 1994, p. 25). The final stage role continuance is when senior faculty members as associate members and full professors have the ability to assume a variety of roles: mentor, trusted colleague, department chair, institutional leader, and disciplinary scholar (Tierney & Rhoads, 1994, p. 53).

**What We Do Not Know About Faculty and Diversity**

Recognizing that diversity is still a struggling phenomenon in STEM and also that there are racial and gender disparities in STEM disciplines, what we do not know is why do faculty engage in diversity? Further, we understand that for faculty to earn tenure, diversity is not commonly one of the factors that impacts faculty success. Here again what we do not know is why do faculty engage in diversity? Further, as mentioned earlier diversity is characterized in many ways and one of them is diversity training. With all of the different diversity models that provide information and give tutelage on how to enhance diversity in academic environments, why is it that diversity is still a struggling phenomenon in STEM?

In this study, this is why it is important to learn understand why faculty engage in diversity on day to day basis because there are many ways and many levels that faculty can help enhance diversity. The ways that faculty can help engage in diversity in a more systemic way is for them to do it in the context of what their common duties of teaching, research and service. But we still need to understand why faculty do engage because understanding why faculty engage in diversity may inform how STEM disciplines can develop initiatives to get more faculty engaged in diversity on different levels (classroom, administration, research, etc). In addition, understanding why faculty engage in diversity and how they engage in diversity also can inform how STEM discipline culture impact faculty engagement.
Understanding how faculty engage in diversity can give insight on how they understand diversity is valued in their academic environments. This is why faculty vitality is used as the theoretical framework for this study because it focuses on faculty engagement.

**Theoretical Framework**

The theoretical framework for this study is faculty vitality. Faculty vitality originates from theories on organizational behavior and developmental psychology to chart academic career stages and identify how needs differ between senior faculty and junior (Baldwin & Blackburn, 1981). This framework distinguishes vital faculty from “stuck” faculty” and offers ways for faculty to be renewed at different stages (Huston, et al.2007). Huston, et al. (2007) defines faculty vitality as engagement (or disengagement) of faculty with their environments in four dimensions of faculty life: intellectual exchange and collaboration with colleagues, decision-making processes, social activity, and mentoring relationships (p. 497). This framework is adapted for use for two reasons. First, Huston’s four dimensions offer a cross-cutting yet narrow structure with which to understand how diversity is reflected via faculty engagement in daily work. It cuts across the more normative discussions of research, teaching and service and looks at how faculty members may observe, collaborate, lead, and choose to participate or ignore what is important to them in their work, and how that reflects their perceptions and understanding of diversity. Second, it is my belief that we need to look for affirmative examples of faculty who are ‘present in the moment’ and actively engaged in their environments, and think about how their socialization into these roles includes diversity even when it is not explicitly mentioned or included as a goal or outcome.
Huston, et al. (2007) suggests that a faculty member can be outstanding in performing their duties, but not necessarily engaged in creating and sustaining a vital academic environment or career. In order to understand how diversity perceptions and behaviors are learned and reinforced in academic environments, the nature of each of these dimensions will be explored because faculty vitality is a good way to understand how faculty are socialized into their roles and do their day to day activities.

**Review of Faculty Vitality**

**Overview of Vitality.**

Vitality is framed mainly from its meaning of physical and mental vigor including the capacity to live and develop (Centra, 1985). Centra (1985) claims that a society decays when its institutions and individuals lose their vitality. Institutional vitality is defined by Palmer & Patton (1981) as “the sum of creativity of individual faculty, flexibility to respond to changing needs and demands, and the ability to adapt to larger-term trends and requirements” (p. 158). Colleges and universities are one part of many types of institutions that make up society, and are crucial to society’s growth and welfare (Centra, 1985, p. 141) because they educate and populate those that keep our society moving forward.

Maher (1982) claimed that vitality is a quest of the college or university to create and sustain the organizational strategies that support the continuing investment of energy by faculty and staff both in their career and in the institution’s mission (p.7). It is recognized as a balance between innovative and traditional approaches to teaching and research. Vitality is a response to the needs of the state, the nation, and the world for new knowledge (Clark, et al., 1985). Vitality includes interplay of faculty qualities and institutional factors; however,
whether faculty activities are considered productive or not depends on whether they relate both to the faculty member’s personal and professional goals and to the institution’s mission (Bland & Schmitz, 1990, p. 45; Clark & Corcoran, 1985). According to Clark & Corcoran (1985) faculty members are vital when exhibiting sustained productivity in their teaching, research, and service activities” (p. 117). In academia teaching impacts students, while research impacts the discipline and service activities impact people within and outside the institution.

Vitality of Faculty.

Faculty vitality stems from organizational behavior as stated above. Acknowledging its origin is critical to understanding that organizations shape their own environments, which is based on its members (Clark, et al.1985). How a person understands organizational climate is a response of a person’s perceptions (Clark, et al.1985) which governs how they engage in that environment.

Vital faculty are passionately involved in and committed to their work, committed to the goals of the institution, continually developing their abilities, and growing in and contributing to their disciplines (Bland, et al. 2009). Productive faculty also called vital faculty are defined as individuals who share a clear, common vision with their colleagues (Bland et al. 2002). Kanter (1977) suggests that environmental conditions, especially opportunities for career growth and advancement, influence the amount of effort employees exert and the degree of employee work commitment.

Research on faculty vitality was sparked by concerns about “stuck” professors whose productivity or teaching performance falls off in mid- to late career (Kanter, 1979). Earlier
studies characterized vital faculty as “highly active” or “star performers,” in publishing and teaching which contributes to institutional reputations (Huston, et al.2007) because it boosts the institution’s position in the discipline. Huston, et al. (2007) discusses how senior faculty can have a good reputation when it comes to publications and grants and serve on national and international panels but they can still be disengaged from their departments and their institutions as a whole. It is these four dimensions Huston, et al. (2007) claims that impacts faculty’s department, students, and the institution.

Engagement in Intellectual Exchange and Collaboration.

Engagement in intellectual exchange and collaboration is the healthy sharing of ideas among colleagues (Huston, et. al, 2007). Healthy sharing indicates that faculty ideas result in relationships developing from collaborating. According to Baldwin (1990) vital faculty are satisfied when they are engaging in learning new ideas, which increases their production because new knowledge is something that vital faculty seek. Nacoste (2010) notes that at a university you increase the mix of people while bringing together and causing interaction among them to see what new things can be created. Establishing collaborations and accessing resources, balancing work roles, and understanding the unwritten rules of academe help faculty be productive and thus creates more collegial relationships (Bland, et al.2009; Russell, 2010). Intellectual exchange is not just limited to interactions between faculty because it can also occur in classrooms with students. Faculty have power of student in particular graduate students. Graduate students and faculty collaborate on research and through this process students learn how to engage as faculty.
Engagement in Decision Making.

Engagement in decision making processes is when faculty participate in activities that have an impact on their work environment which also impacts others (Huston, et al. 2007). This kind of decision making usually happens within departments, but can also occur outside departments. For instance, faculty participate in graduate committees, tenure and promotion committees, search committees, and graduate admission committees; all of which have an impact on departmental composition as well as the academic climate.

Another perspective is faculty involvement in decision making processes impacts other faculty and students because they serve as resources that give advice, encouragement, and feedback which help to shape career choices and departmental climate (Tierney & Rhoads, 1993). Faculty have the ability to influence the departmental direction and departmental make-up because who is hired is determined by faculty. Faculty have influence over who gets tenure and if colleagues’ research is deemed relevant and valuable. Faculty influence can also carry over into administrative roles as faculty become dean, provost, and chancellor. Decision making process are vital to how academic environments operate and how faculty learn.

Engagement in Social Activity.

Engagement in social activity is anything that contributes to collegial relationships and helps to facilitate intellectual exchange and mentoring relationships that create a sense of community (Huston, et al. 2007). Participation in social activities helps build morale in the workplace and increase comfort between colleagues. Social activities can be characterized as going to lunch, attending receptions and departmental retreats. Through participation in
social activities faculty share information about research informally; in addition, during social activities, faculty share information about their personal lives. Through these interactions faculty are able to learn about one another outside of work which makes their relationships more sustainable because they are not based solely on departmental interactions.

Informal conversations can provide insight into how colleagues feel about their work. Informal interactions allow colleagues to be themselves because it removes the pressures of work. However, faculty make decisions to engage in social activities when they feel comfortable to participate.

Engagement in mentoring relationships.

Engagement in mentoring relationships is defined as relationships needed to help junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al.2007, p. 516). According to Cawyer, et al. (2002) mentoring is frequently recognized as a method for facilitating the growth of new faculty and is an important ingredient for student success. A mentor fulfills both psychosocial and career functions in the life of a protégé(e) because the interpersonal relationship fosters trust and increases intimacy (Cawyer, et al.2002; Bland, et al.2009, p.4). Effective mentoring can cut across different lines like culture, race, and gender (Johnson-Bailey, 2002). Sands (et al., 1991) posits that mentoring has resonated loudly among minority group members and women that tend to be excluded from informal, interpersonal means of career development. Brown (2004) asserts that White faculty regardless of gender hold a positive perception of the campus climate than faculty of color. Good mentoring can also help junior faculty
progress to higher promotions because they are learning from people that have already traveled that path.

In summary, this model allows us to examine faculty involvement or engagement in the intellectual, organizational and social dimensions of their work and thus, to better understand how they perceive or learn how to ‘do diversity’.

**Disengagement of Faculty**

According to Huston et al. (2007), disengagement can negatively impact the academic environment because faculty might withdraw from the intellectual life of the department and from collaborative relationships with colleagues; they might opt out of decision-making processes within the department; they might either withdraw from mentoring relationships or give cynical or discouraging advice to protégées; and they might stop interacting socially with colleagues (p. 514). In the relevant literature, faculty disengagement stems from a breach of psychological contracts in which an understanding or commitment that is made between the employee and their employer (Rousseau, 1998). Huston (2007) notes “that a psychological contract involves unwritten (and often unverbalized) expectations about less concrete issues such as work environment, frequency and types of communication, allocation of resources, and the like” (p. 503).

Disengagement in intellectual exchange and collaboration.

Hagedorn (2000) claims that the disengaged worker who, due to very low levels of satisfaction, is not actively involved in the work, does not feel any affinity with the organization, and finally is not excited or desirous to contribute to the benefit of the institution (p. 8). Norman, et al. (2006) illustrates that disengagement from intellectual
exchange and collaboration with colleagues is a sign of erosion to faculty morale. Faculty not investing in and communicating with their peers leads to a cold environment (Bland, et al. 2002). Cold environments reduce community which according to Huston, et al. (2007) is terribly destructive to departments.

Disengagement in decision making.

When senior faculty members disengage from their departments, they eliminate themselves as a possible source of advice, encouragement, and feedback for younger colleagues (Huston et al., 2007, p. 516). For example, lack of involvement on graduate admission committees or tenure decision committees could make the difference between a person getting into a department, graduating from a program, or earning tenure. Norman, et al. (2006) claims that leadership contributes to the academic environment. Decision making can be seen through the role of a department head or chair because the interactions impact faculty satisfaction (Norman, et al. 2006) based on conflict management and department unification. When faculty are disconnected from their department they are less loyal and can negatively impact others. Failure to communicate erodes faculty morale and inequities among resource allocation can occur. It is evidenced that disengagement decision making is detrimental to academic environments.

Disengagement in social activities.

Huston, et al., (2007) suggest “that social activities (e.g., going to lunch, attending receptions and departmental retreats) are a significant aspect of collegial relations, helping to facilitate the intellectual exchanges, mentoring and fostering relationships that create a sense of community” (p. 516). Disengagement in social activities can lead to poor productivity
because faculty feel isolated and less valued. The desire to be productive is gone and
disengaged faculty who express dissatisfaction with their jobs stop participating in campus
affairs (Brown et al., 1996). As a result faculty start avoiding committees, accreditation
procedures, and seeking other jobs prospects (Brown, et al.1996). Thus faculty
disengagement in social activities also impacts other faculty because the more faculty are not
part of the activities others become less aware of what is needed from them or for them.

Disengagement in mentoring relationships.

Disengagement in mentoring relationships impact departments negatively. For
instance, tenured faculty disengagement has a particularly pronounced effect on the
happiness and professional success of junior faculty, whose position at the university is most
insecure and who rely most heavily on mentoring from and collaboration with senior
colleagues (Huston, et al.2007, p. 514). Departmental cultures that do not foster collegial
relationships will not have better success at retaining faculty members and faculty members
with poor collegial relationships will not be productive (Russell, 2010, p. 64; Ambrose, et
al.2005). Relationships are the glue that keeps departments together because it’s the
involvement of faculty and their ideas that make the social milieu attractive. Further, this
impacts student success because students can get stuck in a program for an over extended
period or leave a graduate program without finishing their program because of bad mentoring
relationships.

Disengagement occurs also because of over obligation to administrative duties
(Russell, 2010). Russell (2010) claims faculty disengage when they feel unappreciated by
administrative. In adequate resources among faculty can stimulate over competition in
departments leading to conflicts between faculty (Ambrose, et al.2005). That is unhealthy because colleagues start working against one another which stifles the development of good mentoring relationships.

Clearly disengagement is not good for academic environments. Faculty become less collegial and less supportive of one another. Faculty careers can suffer for lack of knowledge on what it takes to be successful that could be easily be shared by more seasoned faculty. Students can reap the consequences of poor relationships by not advancing appropriately into academia.

**Diversity For Faculty**

“Many higher education organizations state a commitment to diversity goals in their mission statement and other documents, but with imperfect execution there is a perceived gap between expressed commitment and implementation of policies and programs” (Pepper, 2010). Diversity which includes inclusivity promotes the need to find ways that include and value everyone. Faculty learn quickly what is valued at academic institutions. “Most universities, and many research institutions value a limited range of scholarship and associated activities which include: number of publications in high-profile disciplinary journal and subsequent citations, acquisition of grants, invitations to present results at keynote session in disciplinary meetings, memberships in social networks composed of high profile scientists, service in key editorial positions, and demonstrating thriving research labs” (Uriarte, et al.2007, p. 72). In this quote from Uriarte (2007), it reflects what is seen at many universities which is diversity is not valued on the level that requires a change. Faculty learn quickly what’s important at an institution in order to be successful.
Faculty also learn what is expected of them with regard to diversity once they enter the academic environment. Brayboy (2003) posits that white faculty, remain unmarked, and continue to operate under the expectation that they can be faculty members. White faculty unlike faculty of color are able to focus on their jobs and the criteria to be successful with no hidden requirements. Brayboy (2003) also suggest that at predominately White institutions of higher education faculty (scholars) of color are called upon to assist with implementation of diversity (p. 72).

This section will address ways that faculty learn about diversity in their role by framing with the dimensions of the theoretical framework faculty vitality.

Graduate School Experience in regard to Diversity.

While graduates are socialized to disciplines and they are socialized to the culture of higher education (Bodin, et al.2011). Bieber & Worley (2006) address socialization of graduate students from an apprenticeship model that students are told what to do and mentored how to be successful. Nyquist et al. (1999) says that graduate students are aware of the intellectual growth and lifetime friendships that are associated with graduate study, but may not aware how their values system is affected. Bodin et al., (2011) counters that position and says graduate students learn the knowledge, skills, and values necessary for successful entry into a professional career. (Bodin et al.2011). All of these positions claim that graduate students are taught, but none claim they are taught about diversity. However, one can claim that graduates learn about diversity inadvertently.

Aspiring faculty members are keen observers and watch faculty behavior including how they allocate their time and responsibilities (Austin, 2002, p. 104). Graduate students are
impacted by how a professor perceives diversity based on whether or not faculty give time to matters of diversity. “Not many graduate students learn how to engage in decision making processes in graduate programs” (Austin 2002, p. 105). Faculty can make decisions to engage in matters related to diversity within their department and outside their academic environment. Good mentoring contributes to graduate students finishing programs.

Students struggle when the mentoring relationship is not providing what is needed to be successful. With regard to diversity, mentorship programs not only need to identify promising ethnic minority graduate students with interests in academia, but provide emotional as well as professional support to help these students learn the essential skills in an academic career (Hill, et al.1999, p. 829). Unfortunately, women report that their adviser relationship is more student and faculty compared with mentor-mentee or colleagues suggesting social distance for women students (Fox, 2001, p. 660). If women are constrained within the social networks of science- in department or in the larger communities of science, this restricts possibilities not simply to participate in social circles, more fundamentally, to do research, to publish, to be cited, to show the marks of status and performance (Fox, 1991). Students of color also struggle with efficient mentoring relationships in academia.

Bland, et al.(2009) claims that organizations that support and encourage mentoring will develop faculty who are not only highly successful in research and teaching, but are satisfied with the overall environment and work lives (p. 11). In mentoring relationships faculty may not address matter of diversity and only focus on students graduating programs. Faculty may only help students graduate but not invest and teach them how to assimilate to higher education culture. Graduate students may learn about diversity based on their
relationships with faculty.

Faculty learning in regard to Diversity.

Research has shown that identities of people impact how people interact and engage with one another. In academia that same is also true in that diversity impacts how people interact and engage. There have been movements to address diversity in the academy, but persisting structures of White and male privilege need to be transformed to make the academy a place where new knowledge can thrive (Maher & Tetrault, 2007). Race is often the center of debates in on diversity, but with other identities that comprise the wide breadth of worldviews more has to be considered in faculty socialization. Some faculty may be frozen in their fears or discomfort and not mentor outside of their membership groups.

Strategies to Increase Diversity

“Experiences of differential treatment may accrue over time creating wide gaps between groups, leading to negative outcomes such as lower job satisfaction and higher turnover” (Blackwell, et al. 2009). Diversity of students is one reason that faculty members must learn a broad range of teaching strategies (Austin, 2002, 1998). Departments can address low numbers in STEM by recruiting a critical mass of women and non-immigrant minorities as students and as faculty (Moody, 2005, p. 17). With representation at all levels people of color may feel less isolated and feelings of not belonging are diminished when they have someone who they can relate to and who relates to them. Departments can invite distinguished speakers and outside guests to inspire students to mitigate the factors that contribute to student of color disconnect (Moody, 2005, p. 17). Scholarships can be provides since the provision of funding for students often correlates to students’ persistence and
success.

Graduate training that falls short of providing experiences such as involvement in programmatic research, opportunities to teach, supervisory experiences with more junior students, and opportunities to learn and apply standards of professional conduct and practice in a variety of real-world settings will not build skills necessary to success in academia (p. 829). Austin (2009) suggests that academia needs a cognitive apprenticeship model that allows faculty to express what it takes to be successful because many graduate students master the area of study but do not receive training on becoming a faculty member. Faculty should make explicit the challenges and responsibilities of a scholar by helping graduate students develop identities as scholars and analytical thinkers and writers (Austin, 2009).

Moody (2004) claims that minority professors in majority academic settings struggle against the presumption that they are incompetent (p. 12) while majority professors have the advantage of enjoying the presumption of competence. Minority professionals see that majority colleagues can relax and be irritable and aggressive and that behavior will not be used against them. On the other hand, minority professors do not feel they can exhibit the same behavior or it can be used against them (Moody, 2004). Minority and women faculty must be better than the norm and able to navigate their way through academia (Moody, 2004). It is important that faculty understand institutional culture and climate to better equip them to negotiate their position in the organization. Some differences are more visible to those that are not in the majority (white) population and contribute to challenges.

“Mentoring is distinct from advising because it becomes a personal relationship involving professors acting as close, trusted, and experienced colleagues and guides, to
transform the student into a colleague” (Moody, 2004, p.2). Higher education as a profession has many unwritten rules and for those with no mentors are in an inequitable position and often have difficulty getting comfortable with their positions in the profession (Moody, 2004). Mentors can be appointed or the relationship can develop serendipitously. Some mentoring relationships may cross race or gender lines which requires sensitivity because relationships require understanding as various differences strongly influence how individuals view the world (Stanley & Lincoln, 2005). This kind of mentoring requires giving constructive feedback even when it does not feel supportive, as well as the sharing of opportunities for professional development and promotion (Stanley & Lincoln, 2005).

**Conclusion**

This literature review combined relevant literatures related to the research problem and extensively explained the theoretical framework, socialization, diversity in higher education and STEM. The framework informs the study by narrowing faculty engagement in matters of diversity in day to day activities based on four dimensions. The research addressed that faculty learn their roles from other faculty in an ongoing socialization process. This review explained the importance of faculty to academic institutional culture. Furthermore, this review explained the culture of STEM and why diversity needs to be addressed in regard to diversity. To better understand faculty perceptions of diversity it is important to understand their socialization (development), which helps understand how they engage in their day to day activities. Faculty vitality as a framework is the best method for understanding this because it captures how faculty engage or disengage in their environment based on their perception.
CHAPTER THREE

METHODOLOGY

The purpose of this narrative study was to gain a rich understanding from tenured Science Technology Engineering and Mathematics (STEM) faculty on how they engage in diversity during their day to day work duties. There have been many studies conducted on diversity in STEM, but this study utilized a holistic approach to understanding faculty perceptions of diversity. This study approached this topic drawing from faculty vitality as the theoretical framework to look at four dimensions of engagement (intellectual exchange and collaboration with colleagues, decision-making processes, social activity, and mentoring relationships). These four dimensions of engagement were identified to help faculty be successful in their academic environments (Huston, et al., 2007). In this study these four dimensions combined with Saldana’s coding help in understanding faculty perceptions based on how they engage in their daily duties (Saldana, 2009).

This chapter describes and explains the study design and implementation. It outlines where this research was administered and how it was conducted. The research design and the research question that guided this study along with the justification for choosing a qualitative research paradigm with narrative inquiry as the qualitative methodology are explained in this chapter. Faculty vitality, as the framework for this study, is described. Furthermore, the research setting and participants, data collection method, and data analysis is explained. As a professional in the field of diversity, the researcher describes the positionality/subjectivity that is brought to the study. The chapter concludes with a presentation of the concerns related to validity and limitation/strengths of the proposed research.
Theoretical Framework

Capital University is located in the Southeastern part of the United States. This university houses over 31,000 students and over 2,000 faculty members. Capital University is a Predominately White Institution. This institution has two campuses and ten colleges. This campus is highly funded by the research dollars that faculty earn from grants and other research projects. It is also known for its athletic programs. Capital University credits itself on being innovative and cutting edge because of the research that is taking place at this institution. This institution has majority STEM disciplines which also indicate that the environment is very competitive and can be isolating for some faculty (Xu, 2008). Some faculty that identify as African American, Latino American, Native American, or as women may experience the isolation that is attributed to high research STEM environments.

For the purpose of this study a brief overview is given of the process by which faculty are able to be promoted. The levels are assistant professor, associate professor and full professor/professor. The participants in this study are either associate professors or full professors.

Assistant Professor

Appointment to the rank of Assistant Professor is the entry-level professorial appointment. An Assistant Professor is appointed for an initial probationary term of four (4) years. Before the end of the third year of the initial term (in order to allow at least 12 months’ notice should the decision be not to reappoint), the Department Head (or equivalent designee), after consultation with the Departmental Voting Faculty (DVF) shall review the Assistant Professor’s performance and recommend to the Dean either 1) that the Assistant
Professor be reappointed for a second term of three (3) years which is appended to the initial four (4) year term, or 2) that the Assistant Professor not be reappointed.

If the Assistant Professor is appointed to a second term before the end of the second year of that appointment (in order to allow for 12 months’ notice in case of termination), the Department Head and Dean (or equivalent designees), after consultation, shall each review the Assistant Professor’s performance and recommend to the Provost either 1) that the Assistant Professor be promoted with tenure or 2) that upon the expiration of the term of appointment the Assistant Professor not be reappointed. In the case of a decision not to promote and confer tenure, the Dean may recommend, and the Provost may approve, a recommendation and decision during the remaining term of the appointment, to promote and confer tenure based upon new information documenting required performance representing a significant change in the status of information included in the dossier that was the basis for the denial of promotion and non-conferral of tenure.

**Associate Professor**

An Associate Professor promoted to that rank by the university shall have tenure. Tenure is the holy grail of university life. Once tenured, faculty enjoy academic freedom -- they can choose research without fear of displeasing the administration or the board of trustees (*Purdue, 2013*). Faculty that earn tenure have freedom to do other activities in their department without fear of challenges to employment and they have decision making power.

**Professor**

Full professor or Professor is the highest rank at a university. This professor becomes
a senior faculty member. They have more flexibility in the kind of research they can engage in. Professor also are sought after for advice by junior faculty (Kardia, 2013).

**Research Design**

**Research Question**

Workplace dynamics have an impact on how faculty perceive, engage in and promote diversity. For example, at a research university, “the tremendous time demands placed on individual scientists, the goals set by the scientific culture either explicitly or implicitly devalue activities such as teaching and limit the scope of socially engaged research and public outreach” (Uriarte, et al. 2007). Therefore, faculty may not be encouraged to participate in diversity initiatives as pressure to attain promotion and tenure take priority. Faculty compete for grants, publish, conduct research and engage in other scholarly endeavors which consume their focus and attention. These endeavors do not promote inquiry that engages reflection upon the value system that guides the scientific culture (Uriarte, et. al 2007). This disengagement related to matters of diversity has multiple implications on faculty, the discipline/department, students in STEM related courses of study, pedagogy, and the focus of research.

The research question that guided this study is:

*How do STEM tenured faculty members understand and engage diversity in routine day to day duties?*

**Qualitative Research**

Qualitative research allows researchers to learn about participants through their accounts of experiences within particular contexts. Conversely, quantitative research is used
to describe current conditions, to investigate relationships, and to study cause-effect phenomena” (Bloomberg & Volpe, 2008, p.8). Qualitative data reveals patterns and helps to facilitate comparisons; however, when it comes to understanding the experiences of faculty in their specific contexts, quantitative analysis does not help (Norman, et al., 2006). Norman, et al., 2006 claims that quantifying experiences strips the research of its richness and expression; on the other hand, qualitative research gathers multiple forms of data from interviews, observations, and documents resulting in rich data (Creswell, 2003). Various forms of qualitative analysis allow the researcher to gather data from different sources which provides the impetus to tell the story of the participant’s experience.

Often qualitative researchers want to adequately explain a phenomenon and the process is inductive (Merriam & Associates, 2002). Creswell (2003) notes that when we conduct qualitative research that we empower individuals (participants). Denzin and Lincoln (2005) suggest that the researcher studies phenomena in their natural setting and then makes sense of or interprets the phenomena based on the meaning people bring to them (p. 3). Merriam (2002) posits that qualitative research makes meaning from the interaction of individuals with their own world. Therefore, studying a group or population produces variables that explains a phenomena in its context (Creswell, 2007, pg. 40). Since there are multiple constructions and interpretations of reality that change over time it is the qualitative researchers’ responsibility to understand the interpretations at a particular time and a particular context (Merriam 2002, p. 4).

According to Creswell (2002), the researcher will arrive at several common characteristics of qualitative research and those areas are “natural setting, researcher as key
instrument, multiple sources of data, inductive data analysis, participants meanings, emergent
design, theoretical lens, interpretive inquiry, and holistic accounts” (pp. 37-38). Creswell
(2007) says “that qualitative research begins with assumptions, a worldview, the possible use
of a theoretical lens, and the study of research problems inquiring into the meaning
individually or groups ascribe to a social or human problem” (p. 37). In order for researchers
to study the problem they must use an approach to inquiry where data is collected in a natural
setting sensitive to the people and places under study, which enables the researcher to
analyze data that is inductive and establishes patterns or themes (Creswell, 2007). This
process is the general form to help in gathering data for this study. Researchers develop
themes through prolonged contact in the field reflective of everyday life of individuals to
gain a holistic overview of the context then capture data on their perceptions and share their
voices (Miles & Huberman 1994; Creswell, 2003). An advantage of the researcher being the
instrument is that they can expand their understanding through non-verbal and verbal
communication, immediately process the communication, summarize material and then go
back to respondents to obtain further information that increases accuracy of interpretation
(Merriam & Associates, 2002).

**Narrative Inquiry**

Narrative inquiry is the qualitative approach with which this study was conducted. Narrative inquiry explores the lived experiences from individuals’ stories (Creswell, 2007) and processes them to make meaning by reconstructing the experience into a relationship between both the participant and the social milieu (Connelly & Clandinin, 2000). Narrative research helps the researcher see how the participant imposes a flow of experiences and
makes sense of events and actions in their lives (Riessman, 1993, p. 4); this can be classified a biography, life history, or oral history (Merriam & Associates 2002). Narrative inquiry utilizes an intentional and reflective process. It is used to interrogate the actions and learning of a group of learners, constructing and telling the story of its meaning, and predicting how this knowledge might be used in the future (Lyons & LaBoskey, 2002). Regardless of type, they all encompass the following: capturing an individual’s story, and using this information to make meaning of the individual’s experience.

**Types of Narrative Approaches**

The two narrative approaches that are discussed and the suitability of each method for the study explained are: autobiographical and every day.

**Autobiographical Narrative.**

The autobiographical narrative is the way in which people illustrate the past and is related to the present (Richardson, 1995, p. 209). Telling one’s story gives meaning to the past from the point of view of the present which helps in picturing the future (Richardson, 1995). People understand their life through biographies because experiences are connected to other experiences and evaluated in relation to the larger whole. Clearly, there are present factors that impact faculty engagement in diversity. Therefore, this method does not lend itself to the research because it is only reflective, which means the participants only share from their past experiences. The researcher was interested in how faculty’s engagement in matters of diversity on a daily basis reflect their understanding of diversity.

**Everyday Narrative.**

Understanding experiences is more than analyzing participants’ lives. Narratives call
for exploration into the daily, often mundane, activities and situations (Tovares, 2010). The researcher connected with participants on an everyday level. “Every day narrative articulates how an individual accomplished their tasks and all experiences is based on times and daily activities” (Richardson, 1995, p. 209). In addition, everyday narrative looks at everyday realistic workplace experiences and these everyday experiences reveal how faculty understand workplace values and the values of their colleagues. Faculty understanding of faculty’s engagement in day to day routine as it pertains to matters of diversity is the lynchpin for this study, which is why this narrative approach was the best method for this study.

**Positionality/Subjectivity**

Understanding positionality and subjectivity was important to this study. All parts of our identities determine our positionalities which also influences how one perceives the world (Briscoe, 2005). Positionality is who a person is, how they are perceived and how they perceive others all of which affect how faculty engage in their departments. Positionality can be simplistically explained in terms of the common diversity categories (race, age, gender, sexual orientation, etc.), and it can also help better understand a person’s perception. As an African American male I have experience in the natural sciences (STEM), and understands the concept of race while also understanding the concept of “self” in relation to others based on my cultural beliefs which govern how I engage in society and thus at a university.

One way to use positionality with regard to conducting research is to understand insider and outsider status. According to (Merriam, et al., 2001) insider status means easy access, the ability to ask more meaningful questions and read non-verbal cues because of an
authentic understanding of the culture. My interpretation of how people interact with me and engage is a reflection of my understanding of the culture I am in. Further, Merriam, et al., (2001) define an outsider as a person that is unfamiliar with the culture and is unaligned with subgroups and someone who cannot ask taboo questions. Simultaneously, I can be considered an outsider depending on other identities like race, age, educational status compared to the participants of the study. 

Different dimensions of positionality such as demographic and ideological all effect perceptions. According to Merriam et al., (2001) positionality is determined by where one stands in relation to ‘the other’. These same dimensions can determine how one discursively positions the other and oneself (Briscoe, 2005). I am originally from Birmingham, AL and identify as a southerner. As a southerner I have my own understanding of cultural beliefs and gender beliefs that can impact how I engage with participants in this study.

My experience has played a part in the development of this topic. Over my nine-year career my focus in diversity changed from recruitment to retention. At the beginning of my professional career I focused on increasing diversity of underrepresented (African American, Native American, and Hispanic/Latino American) students in STEM in a college at a research university that is a Predominately White Institution (PWI). I worked diligently building relationships at different events, community functions, and high schools that were serving or would be heavily populated by prospective racially diverse students. I was successful at recruitment, but unfortunately by the end of their freshmen or sophomore year students were leaving the college. Students either transferred out of the college to another college or left school all together. When students were transferring out, my interests shifted
because it would appear they were leaving without warrant especially if they were performing well. At times students would share factors that raised concern about the cultural awareness and cultural sensitivity of faculty to the students.

Therefore, the focus on student diversity was only about recruitment, but the focus on retention was inclusive of faculty understanding about diversity and how they could contribute to the success of diversity. I noticed that the usual faculty would come out and support diversity initiatives. Most of the supporters were faculty of color and women. The more I attempted to host diversity initiatives the more I got interested in why faculty do or do not engage in matters of diversity. I wondered if their engagement meant they did or did not value diversity or did they develop an appreciation of diversity in their personal and professional experiences.

Ellis & Flaherty (1992) suggest that subjectivity is the human lived experience and can be in the following contexts: physical, political and historical. The events shape a person emotionally and cognitively. I experienced some professional and emotional challenges as a diversity professional in STEM. Often I experienced isolation in the natural sciences because of low numbers of different ethnic groups outside of European American descent which can be emotionally and mentally draining. Further, I often had challenges professionally because of my African centered paradigm upbringing which is more familial and challenging of racism; however, the work environment is Eurocentric and biased only to what is valued in that academic environment.

As a STEM professional that has an extended career from working with the federal government in the US Forest Service to working in academia I have been able navigate
different professional arenas. Through this navigation I have learned to appreciate the experiences of others as well as appreciate how my experience contribute to an academic environment that is different than my cultural upbringing. I also have learned to identify the influences that the Eurocentric academic paradigm has had on my development as a professional. As mentioned in Chapter Two, socialization means learning the norms of an environment or an organization and I have been able to do that. Therefore, my experience as a STEM professional brings richness to this study. Also, as a diversity professional that has learned to incorporate the experiences of others when planning events to impact organizational and social change adds strength to this study. It adds strength to this study because as a researcher I realize that diversity is not solely limited to participation in a workshop, but can be seen in how people do their work every day. Diversity is seen in the small activities that people engage in not just the big diversity initiatives that institutions administer. As an African American Male I know what it is to be an outsider in the STEM environment, while also understanding that as a professional and a male I’m have an insider perspective as part of my identity.

As a diversity professional my positionality and subjectivity did surface when listening to participants’ stories and certain aspects were more attractive than others. As a research university diversity professional at a PWI I bracketed assumptions by mentioning that experience with diversity and STEM is the catalyst for engaging in this research. Mentioning that I am a diversity professional could have influenced how the participants answered the questions. Therefore, the questions were designed by the theoretical framework faculty vitality which also helped the participants tell stories of their experience with matters
of diversity.

**Theoretical Framework**

Faculty vitality was a good vantage point with which to understand faculty perceptions of diversity. I took into account dimensions of faculty engagement and disengagement in their everyday academic environment and moved away from traditional structures such as solely looking at faculty rank or discrete categories of research, teaching and service. The framework was explicitly explained in chapter 2, but here it is addressed and explained how it framed the study. Huston, et al., (2007) define faculty vitality as engagement of faculty in four dimensions: 1) intellectual exchange and collaboration with colleagues, 2) decision making process, 3) social activities, and 4) mentoring relationships. Faculty vitality was a good way to understand faculty engagement in diversity because it takes into account not only how faculty engage in their work environment, but it helps bring more depth to how faculty were socialized (developed) into their role. Faculty success is traditionally characterized by teaching, research and service. The framework helped elicit stories based on the four dimensions because the dimensions cut across all the areas.

Diversity is so broad, but the framework added structure to the study. Diversity can mean different things to different participants. Participants can engage in matters of diversity in different ways. The benefit of using faculty vitality is that it narrowed the focus of diversity to the four dimensions of engagement.

**Dimensions of Faculty Vitality**

Engagement in intellectual exchange and collaboration is the healthy sharing of ideas among colleagues (Huston, et. al, 2007). According to Baldwin (1990) vital faculty are
satisfied when they are engaging in learning new ideas, which increases their production. Engagement in decision making processes occurs when faculty participate in activities that have an impact on their work environment which also impacts others. Engagement in social activity is anything that contributes to collegial relationships and that helps to facilitate intellectual exchange and mentoring relationships that create a sense of community (Huston, et al., 2007). Social activity engagement is important because it helps people designing inclusive activities. Engagement in mentoring relationships is defined as relationships needed to help junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al., 2007, p. 516).

Faculty success is traditionally characterized by teaching, research and service. The framework helps elicit stories based on the four dimensions. The framework informed the study because the dimensions cut across all the areas of teaching, research and service. Intellectual exchange and collaboration, decision making process, and mentoring relationships aligns with teaching, research and service. Social activity was the only dimension that was difficult to say that cuts across all three, but it did take into account how faculty interacted with one another. The theoretical framework also informed the study because it did the following: provided depth on how faculty have exchanges intellectually at a research university and collaborate with other faculty; gave insight to what influences how faculty make decisions that impact them and others at a research university; how faculty engage in social activities; and what are the nuances within faculty’s mentoring relationships.
Site Selection and Participants

Site Selection

Chapter I addressed the disparities of representational diversity at Predominately White Institutions (PWIs) with further elaboration related to culture and climate. PWIs take a progressive stance on diversity by recognizing the inclusion of diverse ideas from a range of worldviews fosters a learning environment that appreciates and values differences. Diversity still is a struggling phenomenon on University campuses as evidenced by an examination of university demographics in the population groups of students, faculty, administration, and staff. In particular at PWIs faculty and other leaders are still mostly white males. Therefore, PWI status was the first criterion for this study.

The second criterion for site selection was that it must be a Research University. Research Universities (very high research activity) (RU/VH) are formerly known as Research Intensive/Extensive Universities and Research I. These type of universities have high arts and sciences/professions instructional programs, dominant Science, Technology, Engineering, and Mathematics (STEM) doctoral programs, high undergraduate populations, large four-year residential component and are research universities (Carnegie Foundations, 2009; Lund, 2010).

Another criterion was one of geographical convenience. Since the researcher is at an institution in the southeast then the research university in the study will also be in the southeast.

To summarize, the site selection adhered to several criteria: research university that is a predominately white institution (PWI) in STEM focused disciplinary academic
environments.

Participants

The participants for this study were all tenured faculty in a STEM discipline. “The National Science Foundation (NSF) defines STEM fields broadly, including not only the common categories of mathematics, natural sciences, engineering, and computer and information sciences, but also such social/behavioral sciences as psychology, economics, sociology, and political science” (Green 2007). Many recent federal and state legislative efforts, however, are aimed at improving STEM education mainly in mathematics, natural sciences, engineering, and technologies (Kuenzi, Matthews, and Mangan 2006; National Governors Association, 2007). STEM disciplines are highly driven on research resources that are used to increase diversity in STEM fields (COSEPUP, 2011). In this case, eligible STEM fields included mathematics; natural sciences (including physical sciences and biological/agricultural sciences); engineering/engineering technologies; and computer/information sciences (Chen & Weiko, 2009).

Ultimately, 12 tenured STEM faculty were interviewed. Chapter four includes a table on page 100 that shares demographic information and rank of each participant in this study. The rationale for choosing tenured faculty member is that they are in a protected position at their universities. Further, tenured faculty have enough experience in their discipline to understand their academic culture as well as it shows their success in their fields (Austin & Rice, 1998). Tenured faculty understand institutional values and role expectations, particularly as they relate to the promotion and tenure process (Johnson, 2001).

Purposive sampling is the type of sampling strategy that was employed. Since the
researcher’s interest lie in understanding how STEM tenured faculty at a research university that’s a PWI engage in matters related to diversity, framing it in faculty vitality helped look at engagement and made it possible to relate faculty day to day activities back to their socialization.

Research Process

Table 1. Study Timeline

<table>
<thead>
<tr>
<th>May-July 2012</th>
<th>August-November 2012</th>
<th>December 2012- March 2013</th>
<th>April 2013</th>
<th>May-August 2013</th>
<th>September 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRB Approval</td>
<td>Recruit participants</td>
<td>Data Collection</td>
<td>Analyze Data</td>
<td>1. Finish Data Analysis</td>
<td>Defend dissertation</td>
</tr>
</tbody>
</table>

The research period included a four month (December 2012-March 2013) phase dedicated to data collection. An Internal Review Board (IRB) application was completed and approved at North Carolina State University. This board oversees the ethical treatment of human research subjects. Upon receiving from the Institutional Review Board (IRB) in June 2012 this research process began. During the summer and fall of 2012 the researcher identified 12 tenured faculty participants from STEM departments at a Research University in the southeast that is a PWI.

The researcher’s interest in STEM tenured faculty came from a range of STEM fields
identified but any other aspects of their identities (i.e. race, age, gender, etc.) were not pertinent for their selection. During the first month deans and department heads of STEM colleges and departments were contacted via email and by a mailed letter (APPENDIX A). In the letter Deans and department heads were asked to select tenured faculty that are considered champions of diversity meaning engaged in the department’s or colleges diversity efforts by grantsmanship, mentoring relationships, teaching and outreach, committee participation, activities outside of the department, and collaborating with others within and outside of the department (Huston, et al., 2007). During the months of August to November participants that were identified by their dean or department head were contact via email and by a mailed letter (APPENDIX B). In this letter the participants were told how their participation would contribute to this study and that their identities would be remain anonymous throughout the research process. During the months of December 2012-March 2013 STEM tenured faculty were interviewed twice.

Data analysis was conducted in April 2013. Chapters four, five, and six were written and final dissertation defense was in September 2013.

Data Collection.

Creswell (2003) suggest that one needs to find one or more individuals to study, individuals who are accessible, willing to provide information, and distinctive for their accomplishments and or who shed light on a specific phenomenon that is explored. As Kramp (1993) notes “Narrative inquiry is a by-product of narrative knowing and the researcher is interested in determining the meaning of a particular experience or event for the one who had it and tells about it in a story” (p. 108). Data was collected by interviews and
documented as field notes. Creating field notes is the active reconstruction of events, taking notes about the interview, where it took place, setting and can be taken by researcher or participant (Creswell, 2007).

Data Source I Interviews.

There were two data sources: interview and observations. A consent form was provided to participants outlining the focus of the study, how statements were used, the study’s confidentiality statement, and each participant received a copy of the form for their personal records (APPENDIX C). To capture the stories of the participants the interviews were an hour to an hour and half long interviews that were face to face and loosely semi-structured, (Creswell, 2007). The interview questions (Given in APPENDIX E & F) focused on eliciting stories about faculty members’ experiences with the four dimensions in Huston’s framework (*faculty vitality*). Since the participants shared stories, the interviews were not too structured, but they were semi-structured face-to-face for observations to be made of the language verbally and physically the participants were showing. Prompts were used to gather enough rich and contextual detail to sufficiently analyze the stories in terms of how faculty members’ routine work reflects their conceptualizations of diversity.

According to Holstein & Gubrium (2003) the interviewer must approach each interview like they do not know the respondent and they are worth listening to with a caring and concerned attitude. The interviewer was aware because the interviews took place in the participant’s place of work (office, department). Upon entering the room comfort and trust was achieved quickly because of limitation of time for the interview. The researcher anticipated issues of data collection, called field issues, which could have been a problem
Participants were treated as treasure holders with pertinent beliefs, feelings, and activities. Any information that was shared was documented and the interviewer did not impose his understanding or disagreement with subjects during the interview.

The researcher understands that the matters of diversity can be sensitive and more complicated to share in academic environments. To counter this complication another source Morse and Field (1995) was consulted. Morse and Field (1995) describe the importance of good interviewing as avoidance of assuming the role of counselor, low interruptions, appropriate and frequent prompts, problem, good listening skills and genuine interest in the participant’s story (Bracken, 2002).

Interviews were documented in a journal and audio-recorded. Participants were reassured that their answers were not traceable back to them.

Data Source II Observations.

Eliciting stories on a day to day basis were important to this study, but was challenging to capture with just audio recording. Three to four participants were asked to be shadowed for a day to observe day to day routines, but unfortunately participants were not comfortable with this aspect of data collection. Therefore, the use of retrospective journals was employed because it allowed the researcher to capture the non-verbals, facial expressions, and pauses that the participants exhibited while they responded to questions.

Data Analysis.

To analyze the data four elements were employed: Daiute & Lightfoot (2004) conceptualizations, the theoretical framework, Saldana’s approach to support discourse and Baptiste (2001) resource analysis. Recognizing that matters of diversity may be sensitive for
some, conceptualizing narrative analysis as storytelling with the three methods (genre, metaphor, and discourse) made it easier to code (Daiute & Lightfoot, 2004). Daiute & Lightfoot (2004) conceptualize story telling as: a genre, a metaphor and a discourse. A genre is a culturally developed way of organizing experience (Daiute & Lightfoot, 2004). As a genre, narrative analysis is organized by values, practices and control inherent in groups (Daiute & Lightfoot, 2004). A metaphor consists of information and comments about the significance of that information (Daiute & Lightfoot, 2004). A discourse is an exchange that occurs as embodiments of cultural values and personal subjectivities (Daiute & Lightfoot, 2004, p. 10).

A genre is culturally developed and every faculty member had their own way of identifying the importance of a critical incident. The genre conceptualization was helpful in identifying the dominant force that characterizes a person’s values, practices, and controls inherent in groups determining who the heroes are, what life should be like, and what should be hidden (Daiute & Lightfoot, 2004). Each participant had a set of values and fortunately, all dimensions of faculty vitality were conceptualized as a genre.

Richardson (1995) classified metaphor for communicating cognitive content because it makes it easy to understand others’ experiences (p. 204). The use of metaphor was helpful for faculty that preferred communicating metaphorically describing critical incidents or certain individuals in stories. Daiute & Lightfoot (2004) also suggests that metaphor adds anonymity to participants and is used for developing themes. In this study the researcher clarified with the participant that the metaphor was understood in context and if it was needed the researcher paraphrased what the participant shared.
Narrative discourses are cultural meanings and interpretations that guide perceptions, thought, interaction, and action (Daiute & Lightfoot, 2004, p. 10). Discourse was very useful for organizing life by social relations, interpretations of the past, and plans for the future meaning that people told stories the way they remembered and perceived it. Each participant had a way of discourse that shaped their perceptions and interactions. Stories could have been difficult to code because interpretations are complex. For this reason, Saldana’s coding scheme enhanced this study.

Saldana’s (2009) five forms of coding helped with addressing this difficulty of coding by conceptualizing narrative as discourse. The five forms were: *Ritual interaction*, which is polite interaction that can also communicate cultural patterns based on status, gender, race or class; *ordinary conversation*, patterns of questions and responses that provide data about everyday life; *skilled conversations* that can be exchanges as debates or conflict; *personal narratives* consisting of individual self-disclosure; and *dialogue* where conversation transcends information exchanges and moves to higher levels of mutuality (Saldana, 2009, p. 113).

Coding was based on the theoretical framework “faculty vitality” which helped understand faculty engagement in four dimensions: 1) intellectual exchange and collaborations, 2) decision-making processes, 3) social activity, and 4) mentoring relationships. Using this framework could have limited this study because it only took into account what faculty did and not why they did. Further, only using this framework could have limited this study because it did not take into account the impact of the STEM discipline or the academic environment on the faculty’s engagement. Therefore, the framework was
combined with Saldana’s (2009) coding to reflect on conversational meaning with a goal to develop an evocative representation of the participants’ experience (Saldana, 2009). Combining these two methods enhanced this study because it allowed the researcher to gather how the participants were engaged in matters of diversity as well as why the participants were engaged. Also, combining these two methods allowed the research to get more understanding on how the academic environment influenced the participants’ engagement because the participants were able to reflect on their experience throughout their career (as a non-tenured and tenured faculty members). On the contrary, Conle (2000) asserts that communication is not transparent, and it can highlight the dominant perception of the storyteller (p. 57). The lack of transparency in communication justified the researcher journaling while paying attention to verbal and nonverbal communication and employing observations to collect data on faculty daily activities.

This framework did not catch everything that faculty understand to be how they engage in matters of diversity. As you will see in Chapters Five, social activity was not significant overall to the participants overall. Participants shared other experiences that inform how they engage in diversity that were not captured in the framework, but were of note to mention in this study. The challenge with using Faculty Vitality is that while it captures how faculty are engaging in diversity, it does not capture how faculty understand diversity. While Saldana’s coding helped to look at faculty engagement on an everyday level, there are still other parts that were missing with using this framework. The crises segment of Saldana’s schemata was not useful in this study. Crises is something that occurs between parties and there is a negativity around subsequent interactions. None of the participants
talked about this occurring with their interactions between them and their colleagues.

Following each audio-taped interview analytic memos were written. After each interview transcripts were made. After listening to the interviews journal thoughts and other notes were documented. Drafts of interviews were reread continuously and transcriptions were made of the interviews (Bloomberg & Volpe, 2006, p. 75).

Epistemological analysis was administered (Baptiste, 2001) because it took into account sources and processes of knowledge. Analysis is a continuous process that begins with the initial conception of the study and proceeds through data gathering, reduction, and write-up (Baptiste, 2001). The decisions for this analysis was transparent and defensible as possible.

Data Handling.

In order to protect participants’ identities steps were taken to ensure anonymity. Participants were assigned pseudonyms. The STEM discipline of each participant was not identified in this study. Data was stored safely and securely during this study and then destroyed after the study was complete. The participants’ departments of origin were also assigned different names. There were no identifying information, not even the respondent’s department. The research university was not identified by its official title.

Ethical Considerations

“A qualitative researcher faces many ethical issues that occur during data collection in the field and in analysis and dissemination of qualitative reports” (Creswell, 2003, p. 141). As a result, IRB rules were followed when conducting research with human subjects. Subjects were protected from harm and given an informed consent outlining the overarching
guidelines (Johnson, 2010). Participants received pseudonyms to maintain anonymity. Copies of transcripts were deleted and a secure copy remained with the researcher until after completion of the research to maintain confidentiality.

**Rigor**

Trustworthiness Criteria.

In qualitative research, rigor was determined by how well the researcher provided evidence that descriptions and analysis represented the reality of the situations and persons studied (Bloomberg & Volpe, 2008). Trustworthiness of a study was determined by various criteria: credibility, and dependability. To ensure there was high quality research administered credibility and dependability were explained.

Credibility was established by acknowledging researcher’s bias. To ensure biases were not portrayed, and to determine accuracy of the findings, member checks were employed. Member checks were transcribed interviews and summaries of the conclusions which were sent to the participant for review (Bloomberg & Volpe, 2006, p. 77).

Dependability indicated the research process was logical, traceable, and documented (Marshall & Rossman, 1999). Detailed and thorough explanations were provided on how data was collected. Participants reviewed transcripts ensuring responses were collected adequately. The findings from this study were not generalizable, but provided sufficient information to make it possible for the study findings to be appropriately applied.

**Limitations of the Study**

The study limitations can be divided into these basic categories of university culture and nature of their discipline, time, relationships with colleagues, bias, and as a novice
researcher.

University Culture and Nature of the Discipline.

This study was limited by the university culture. Matters of diversity go unrecognized in promotion and tenured faculty and could have revoked their participation or caused them not to share genuine impressions of department’s openness to diversity. If faculty felt the university was clueless or disinterested in matters of diversity they could have been less obligated to participate. Faculty may have felt this research would not elicit any cultural change or a shift departmentally or at the university.

Time.

“Narratives are about temporal events and tell the when and where something happens, context, who said what to whom and with which feeling and in what mood” (Conle, 2000, p. 56). The issue with this kind of sharing is that while the storyteller shared facts, subjects could have been potentially subjunctifying these facts (Conle, 2000). In an ideal world the research study would have been administered over a long period to get more of an understanding of what the faculty member does from day to day. Another challenge with time was it could have been cumbersome getting responses since it took time to build a rapport with participants as well as trust. The time for the interview did not exceed the time some desired to give. Some may not have valued this research as significant. Faculty may have avoided responding to the request if they were submerged in work.

Relationships within departments/colleagues.

The faculty member may be in a STEM area that is not communicative. Talking about diversity may be discouraged. The academic culture may only be to view diversity in
terms of research and curricula in a field and not past the surface level of race and ethnicity.

The qualitative sampling method for this study was maximum variation which documents diverse variations and identifies common patterns. While a dean or department head endorse faculty member, he or she may not have had good rapport with the individual that suggested them. Participants that were identified were to be champions or supporters of diversity so this study did not examine those that may be perceived as not valuing diversity. Faculty may have considered their nomination as a means to single them out amongst their colleagues.

Faculty may not have been authentic when telling stories to strangers for desiring not looking bad if there are doubts about engagement in matters of diversity. To counter the researcher offered to meet somewhere near campus to satisfy work context, but to remove the pressure of their work environment.

Bias.

It’s challenging to distance one’s self from what one knows and understand and yet act in integrity and demonstrate rigor (Pinnegar & Daynes, 2007, p. 15). Talking to faculty demonstrated my understandings of diversity. As a novice researcher to qualitative research I experienced challenges and made some mistakes, but those challenges can also be considered strengths because they contribute to my development as a researcher.

Strengths of the Study

This study was administered by speaking with tenured STEM faculty. Since the faculty are tenured they have achieved success and do not have to be as concerned about how their responses would affect their positions as faculty or leaders in their disciplines. The
interviews were done in two different times which allowed the faculty to share their thoughts without being exhausted by the interview process. Also, the interview was done as convenient to the participants’ schedules as possible because the interviews were administered on their time and in their work environments. The coding for the study combined two methods that allowed the researcher to analyze the participants stories from the perspective of how they engage in diversity through their teaching, research, and service (day to day basis). Further, the coding allowed the researcher to analyze how the environment and the participants experience influence and inform how they are to engage in diversity.

Another strength of this study is who I am as a diversity professional. I understand how to work with diversity and I have a STEM background. I have been effective in working with a diverse faculty in different STEM disciplines and administering successful diversity programs that help make a welcoming and inclusive environment for over nine years. I also have an academic background in forestry and genetics and developed my career in STEM and understand how diversity is addressed in these environments. Furthermore, I am an insider because I work at a research university that is a predominately white university.

Summary

This chapter provided a detailed description of this study’s research methodology. Qualitative narrative inquiry methodology was used to illustrate the phenomenon of how faculty engaged in matters of diversity throughout their day to day duties. The participant sample was made up of 12 tenured (associate and full) faculty in STEM disciplines. The data
was collected by doing two face to face interviews and analyzed using manual analysis skills. The data was reviewed against literature and emergent themes. Credibility and dependability was accounted for through peer review, advisor scrutiny, and member checks.
CHAPTER FOUR

TENURED STEM PROFESSORS’ ENGAGEMENT

The purpose of this narrative study was to explore how tenured Science, Technology, Engineering, and Mathematical (STEM) faculty engage in diversity in their day to day work activities. Tenured faculty generally have sufficient work experience to understand and navigate academic culture (Austin & Rice, 1998). Tenured faculty are assumed to have sufficient experience to understand institutional values and role expectations, particularly as they relate to the promotion and tenure process (Johnson, 2001). Lastly, tenured faculty members influence and set the tone of academic environments (Baldwin & Chang, 2006).

This study was administered at a predominately white university (PWI) that is a research university (very high research activity) (RU/VH). PWIs take a progressive stance on diversity by recognizing the inclusion of diverse ideas from a range of worldviews that fosters a learning environment that appreciates and values differences. Diversity still is a struggling phenomenon on University campuses as evidenced by an examination of university demographics in the population of students, faculty, administration, and staff. In particular at PWIs faculty and other leaders are still mostly white males. Research universities formerly known as Research Intensive/Extensive universities and Research I have arts and sciences/professions instructional programs, dominant Science, Technology, Engineering, and Mathematics (STEM) doctoral programs, high undergraduate populations, large four-year residential component and are research universities (Carnegie Foundations, 2009; Lund, 2010).

This chapter analyzes the experiences of the 12 tenured STEM faculty who
participated in this study. Capturing the engagement of the participants in their work environment allowed what they shared to become more meaningful and gave depth to how they understood their roles in terms of engaging in matters of diversity. This chapter offers a foundation from which to appreciate each participant’s experience with and perceptions of diversity within their departments as well as the larger research university. In the next section there is a discussion of how the faculty participants defined and perceived diversity. A profile of the participants is included in the Table 2 which includes age, ethnicity, gender, and their rank. The next section is the presentation of their responses. The coding for data analysis will be presented which also gives context for the presentation of findings in Chapter 5.

**Participants and their perceptions of diversity**

Each participant shared their own unique perception of diversity (Table 2). Interestingly, each participant had their own understanding of how they actually engaged or should engage (based on the theoretical framework) in diversity in their day to day duties. The human experience is very dynamic and contributes to how people shape their perceptions. Table 2 shows each participants’ perception of diversity and their lens they perceived diversity through. It is important for the reader to understand how each participant broadly perceives diversity, because it gives insight into why and how they engage in diversity throughout their day to day activities. Further, every participant brought to the study their own identity or aspect of diversity that was salient to them. To some participants diversity is all about students and their development. To others diversity is a lifelong process. The salient identities give insight into how participants conceptualize their engagement and with what issues they advocate for in their engagement. The way participants engaged in
their day to day duties was informed in how they understand diversity. The interviews were a conversation about their engagement in diversity in four dimensions as reflected in the theoretical framework (Faculty Vitality).
Table 2. Participants and age range, ethnicity/gender/rank/position, their perception of diversity, and what identity of diversity is the most salient to each participant.

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age range</th>
<th>Ethnicity</th>
<th>Gender</th>
<th>Rank/Position</th>
<th>Perception of Diversity</th>
<th>Salient Identity of Diversity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dana</td>
<td>50-60</td>
<td>White</td>
<td>Female</td>
<td>Full Professor/Faculty</td>
<td>“diversity as a long term commitment”</td>
<td>Race/ethnicity</td>
</tr>
<tr>
<td>David</td>
<td>50-60</td>
<td>White</td>
<td>Male</td>
<td>Full Professor/Department Head</td>
<td>“the old model was that you were okay if you were not discriminating, but he realizes that one has to be in active intention to improve diversity”</td>
<td>Race/ethnicity</td>
</tr>
<tr>
<td>Deanna</td>
<td>50-60</td>
<td>White</td>
<td>Female</td>
<td>Full Professor/Associate Dean</td>
<td>“engaging in diversity is a lifetime process”</td>
<td>Multiple identities</td>
</tr>
<tr>
<td>Ed</td>
<td>70-80</td>
<td>African American</td>
<td>Male</td>
<td>Full Professor/Faculty</td>
<td>“diversity as exposing students to different scientists from diverse ethnic backgrounds, different viewpoints and different ways of solving problems”</td>
<td>Race/ethnicity</td>
</tr>
<tr>
<td>Marcus</td>
<td>40-50</td>
<td>African American</td>
<td>Male</td>
<td>Associate Professor/Faculty</td>
<td>“So dealing with diversity, it's dealing with the population, right? But then, you're dealing with the overlap, right? Layering it with things that takes on -- that people would consider mundane and elevating it because it's got so many different lessons to teach other people, right?”</td>
<td>Race/ethnicity</td>
</tr>
<tr>
<td>Monica</td>
<td>50-60</td>
<td>European American</td>
<td>Female</td>
<td>Full Professor/Faculty</td>
<td>“requires students to work in teams and this is another way of promoting diversity”</td>
<td>Gender, race/ethnicity, age</td>
</tr>
<tr>
<td>Park</td>
<td>60-70</td>
<td>Jewish American</td>
<td>Male</td>
<td>Associate Professor/Faculty</td>
<td>Ah it just part of the fabric of who we are as an institution who we are as a profession, not a separate activity</td>
<td>Race/Ethnicity</td>
</tr>
<tr>
<td>Rebecca</td>
<td>40-50</td>
<td>White</td>
<td>Female</td>
<td>Full Professor/Faculty</td>
<td>“diversity is important to her because it is about different perspectives”</td>
<td>Race/ethnicity, gender</td>
</tr>
<tr>
<td>Sean</td>
<td>70-80</td>
<td>White</td>
<td>Male</td>
<td>Full Professor/Professor Emeritus</td>
<td>“Diversity is a rocky road”</td>
<td>Race/ethnicity, gender, sexual orientation</td>
</tr>
<tr>
<td>Tyler</td>
<td>40-50</td>
<td>African American</td>
<td>Male</td>
<td>Full Professor/Faculty</td>
<td>“the only way I can see diversity influence how I do things is I may always feel like I have to – feel like I have to prove myself”</td>
<td>Race/ethnicity</td>
</tr>
<tr>
<td>Vanessa</td>
<td>40-50</td>
<td>African American</td>
<td>Female</td>
<td>Full Professor/Assistant Dean</td>
<td>“Diversity in faculty is critical because those students who are here need positive role models and they need to see scientists who look like them they need to see scientists who can make it real for them that they can achieve it”</td>
<td>Race/ethnicity</td>
</tr>
<tr>
<td>Yolanda</td>
<td>40-50</td>
<td>Latin American</td>
<td>Female</td>
<td>Associate Professor/Faculty</td>
<td>“if I see something not going right I’ll be quite forefront and say we needed to do better. This is not the way it should be. Umm so if you happen to be on my side it’s a good thing because then I’ll be passionate for you and be your advocate and I’ll try to get something done”</td>
<td>Race/ethnicity</td>
</tr>
</tbody>
</table>
Individual Participant Profiles

Dana.

Dana is a white woman in the 50-60 age range. She is a full professor. Dana perceived diversity as a long term commitment and the lens that was salient to how she perceived diversity was race/gender. Her engagement in matters of diversity were focused on issues around. Since she understood diversity as a long term commitment then her activity in matters of diversity were mainly in intellectual exchange and collaboration, decision making processes, as well as, mentoring relationships. She gave accounts on how she worked to help students of diverse ethnic backgrounds as well as how she challenges her colleagues and how they perceived others based on ethnicity. Dana values diversity and thinks that faculty members play a huge part in diversity. One way faculty play a part in diversity is how they view students and advise students. However, Dana believes that all students have the same problem.

Dana also enjoys social activities. She believes participating in faculty social activities helps them better deal with diversity. She shared that if her department discussed diversity over a social instead of a meeting, things might be more open or better communication would open up. Later Dana mentioned that “People find strange ways to divide themselves.” The situation she is talking about is being divisive. Dana said it’s a diversity issue to be divisive. If the priorities of the people are not about people finding common ground then whether it’s a country, university, department or a club any divisive nature will lead to some people being favored more than others.
Dana is at a point in her career where she no longer has to focus on bringing in grant funding as she is a Full Professor. She also shared that while having tenure is great if you’re not bringing in funding you become invisible which is why social activities are important for department morale. She really values people and their contributions and thinks a better job needs to be done to maximize the talent. However she is still engaged in matters of diversity, which is reflective of her perception of diversity being “a long term commitment.”

David.

David is a white male in the 50-60 age range. He is a full professor as well as a department head. David perceived diversity as something that one has to active and intentional about improving. David understood that is not just people being actively discriminating but some people also have internalized biases and act on it. The salient lenses that he saw diversity through were race/ethnicity.

As a department head he recognized that his work in diversity has an impact on everyone in his department since he is in a leadership position. David’s involvement as a department head led him to be active in all four dimensions of faculty vitality (Intellectual exchange and collaboration, decision making processes, social activities, and mentoring relationships). He is active in collaborating with his faculty one various projects. David also has influence over the decisions that are made in his department. As a leader in his area his activity in social activity is part of his responsibility. Further as a professor he mentors graduate students. In his role as a department head, David acknowledged that he has influence on how matters of diversity is valued in his department and that he must role model what other faculty are to do with regard to diversity.
Race and ethnicity were what he addressed in his responses to the interview questions. David shared how these two identities have been a part of his journey in diversity throughout his career and they still are the drivers behind how he perceived his engagement in matters of diversity. His involvement in diversity was not just about engaging in diversity in a way that looks good on paper, but his engagement in diversity is intentionally done to have some impact in his discipline and his department.

Deanna.

Deanna is a white female in the 50-60 age range. She is a full professor as well as an associate dean. Deanna perceived diversity as a lifetime process and she looked at diversity through numerous lenses. As an associate dean, Deanna is able to have engages in all four dimensions of faculty vitality (*Intellectual exchange and collaboration, decision making processes, social activities, and mentoring relationships*) and does it in a way that diversity is always at the forefront of what she is doing. The perception of diversity for Deanna a “lifetime process” means that she is on this journey for the long haul and she wants to impact her discipline in a way that she opens doors for more women to join her field.

She addressed interview questions from the perspective of a white woman that is heterosexual, as American citizen, with English as a first language, and that is college educated. Deanna understood that all of these parts of her identity influence how she perceived diversity as well she understood how these parts of her identity could influence how promotion in this academic environment.

Deanna’s academic experience has shown her that women numbers can be plenty in the undergraduate pool but as one continues up the academic ladder the numbers continue to
dwindle. Her purpose now is to make sure that women know that they can excel in math and any other area they want to specialize in. Deanna shared the real reason she took on the associate deanship is to work on diversity issues because she loves teaching and she loves research. Deanna not only works on the gender aspect of diversity, she is very active in the movement for equality with our GLBT community and also equal representation of race in her discipline. It is evident that Deanna is an advocate for diversity and works daily on this in her position.

Ed.

Ed is an African American male in the 70-80 age range. He has had a career of numerous positions from faculty to vice provosts and other administrative positions in his department. He is a full professor. Ed perceived diversity from the perspective of exposing students to different viewpoints by sharing different scientists from various ethnic backgrounds to show students different ways of solving problems. The salient lenses for Ed are race and ethnicity.

For Ed, diversity is perceived from the student perspective and broadening their horizons on who they can learn from and how to solve problems. He also used poetry in his teaching to help people understand how their profession can be used or has been used for the improvement of lived condition for populations of people. In his responses to the questions he mainly talked about his involvement in intellectual exchange and collaboration, decision making processes and mentoring relationships. He works to help his colleagues seeing the big picture of diversity in academia. For him his involvement was centered around working on issues of race and working with students from an African American ethnic background.
Ed is currently still teaching and active in his college working on diversity issues as a participant on his college’s diversity committee.

Marcus.

Marcus is an African American Male in the 40-50 age range. Marcus is a newly tenured faculty member. He perceived diversity as ways of teaching different lessons to other people from different perspectives. His lenses that inform his perception are race and ethnicity. Utilizing the framework and aligning it to Marcus’s identity shows how his lens affects his engagement. Marcus shared that with tenure he is able to participate in conversation that he previously could not.

For Marcus, he engaged in all four dimensions of faculty vitality, but his engagement was primarily from the standpoint of his ethnicity. Being the only African American faculty person in his department there are times Marcus is the representative for his race. He was aware of his influence with his colleagues when it comes to how they view individuals in his ethnic group. He saw his involvement as ways of representing his ethnic community. Further, in his responses when he addressed advocating for students he shared experiences with African American students. This can be indicative of how his identity informs him how is to advocate and at times who he is to advocate for.

Monica.

Monica is a European American Female in the 50-60 age range. She is a full professor in her department. Monica’s perception of diversity is from the perspective of having her students work in teams to promote diversity. She sees having her students work in teams helps them appreciate the value of having other perspective and ideas. The lenses that
are salient for Monica are gender, race/ethnicity and age. In Monica’s responses she talked about how her gender affects how she is perceived by her colleagues and how she works with others. Further she talked about age affecting how women are promoted or move up in her field. Monica’s responses showed that she was engaged in three dimensions of faculty vitality (Intellectual exchange and collaboration, decision making processes, and mentoring relationships).

As a full professor, Monica understood her influence in her department, but also recognized the challenges of her identity in her discipline. Along with her duties as a faculty member she is very involved in her profession by being active in technical societies. She shared she has always volunteered with her profession by either being an editor of journals or sitting on accreditation committees. She gave accounts on how she worked to help students of diverse ethnic backgrounds as well as how she challenges her colleagues and how they perceived others based on ethnicity. Monica commented on the culture in her department and says that at times men make jokes about women that are inappropriate. Monica shared that she is vocal and lets her colleagues know that it’s not right what they do and how they talk about other women. She continues to engage in diversity as a leader in her field for others coming up after her, in particular women

Park.

Park specifically shared that he is Jewish American. He is in the 60-70 age range and is an associate professor in his department. His perception of diversity is that he sees diversity being seamlessly in everything that is done at the university. He does not view diversity as a separate part of what is done at his institution. For Park, his salient lenses are
Park is a very active in diversity from an administrative perspective in his college as he leads their diversity committee. Park engages in all four dimensions of faculty vitality in his position and he understood his influence on how diversity is done in his college because as a white male to some and faculty member he acknowledges his privilege.

Park shared that his major professor had such a clear vision about the future of his discipline that he wanted to be a faculty member to share his vision. Through his lived experiences he has been able to learn some of the privileges and struggles he has as a result of his ethnicity. He obtained his degrees within the US and abroad in Africa. Park is in an interracial marriage which also has a very deep influence on his engagement with diversity. He knows the perception of his kids that appear to be Caucasian is of importance to their lived experience. His children’s mixed identity influences his perspective on diversity because his family is able to learn from each other.

Park has experience as a diversity facilitator so he is accustomed to talking about diversity with groups of people and talking about it on different levels (race, sexuality, gender, etc.). His responses showed how he understands his position with regard to promoting diversity, but also shared some of his challenges with being comfortable to address with others that may be unaware of diversity. Park talked about how he engaged other students and faculty members in diversity and will continue to do this.

Rebecca.

Rebecca is a white female in the age range of 40-50. She is a full professor and the only woman in her department. Her perception of diversity is the diversity is about different perspectives. Thus she is open to the ideas of others. The lenses that inform her perception
are race, ethnicity, and gender. According to Rebecca’s responses she engaged in three dimensions of faculty vitality (intellectual exchange and collaboration, decision making processes and mentoring relationships). In her responses showed that she understood her position in promoting diversity in her discipline. She also understood how her race being white gave her privilege in her field, but that her gender and age brings challenges because she is in a white male dominated field. She actively works to mentor students from all backgrounds, but particularly students of color and women. She valued being able to take students across the world and to national conferences and encourage them work with others. Her engagement was intentional on trying to expand the race/ethnicity demographics of faculty in her discipline and she actively mentors women in a student organization where they work on professional development for women in STEM. Rebecca is engaged in her field on levels inside and outside her department.

Sean.

Sean is a white male and in the age range of 70-80. He is a full professor, but has had a career as an administrator (program coordinator) for both undergraduate and graduate programs. Sean is a professor emeritus and loves teaching. He also identified as a gay leaning bi-sexual male. His perception of diversity is that diversity is a rocky road. The lenses that informed his perception were race/ethnicity, gender and sexual orientation. According to Sean’s responses, he was engaged in all four dimensions of faculty vitality. In Sean’s accounts he talked about how actively worked and still works for students of color and women to make sure they have a great experience in his department. He also, shared that he is open with his identity with colleagues and students to help others that are closeted feel
comfortable to be themselves in the department. Next, he addressed how involved he was with the establishing of the Gay, Lesbian, Bisexual, and Transgender (GLBT) Center at his campus. As a retiree he is still engaged in diversity facilitation across campus. It is evident that his identities and his lenses help guide how and why he is engaged in matters of diversity.

Tyler.

Tyler is an African American Male in the age range of 40-50. He is the only African American professor in his department and he is a full professor. Tyler’s responses showed that he is engaged in all dimensions of faculty vitality. He said that his favorite professors in college were the ones that had some practical experiences they could bring to the classroom and that it was not all theory which informs how he engages in the classroom. Tyler shared that he enjoys mentoring along with research and that’s what brought him to academia. He also shared that diversity is something that his discipline and department have to work on. In his service Tyler actively serves on editorial boards and accreditation committees. One way Tyler shared that diversity has helped him do his job is “in his work he makes sure that there aren’t biases towards reviews where it might be construed that the person is not as esteemed as others by virtue of their name or gender.” He shared that he has always been at white institutions and that his parents never let him not do his best. However, he shared that not everyone has the same upbringing and can engage like that and that is why mentoring is important to help people persist.

From this response Tyler identifies race as the primary lens that he sees things through in regard to diversity. In his response he chooses not to let diversity influence how
he administers research because of the nature of his discipline. However, because of his lens and being African American diversity helps him keep in the back of his mind that he must always be better than best. Tyler saw the benefits of making it to Full Professor and shared that now he will work on matters of diversity more. However, he does not want to be the only champion in his area working diversity.

Vanessa.

Vanessa is an African American Female and is in the 40-50 age range. She is a Full Professor and an assistant dean in her college. Vanessa is the only African American in her department. Her perception of diversity was diversity in faculty is critical because students need to have positive role models that look like them so they can think they can achieve success. The lenses that inform her perception are race and ethnicity. Vanessa’s responses showed that she was engaged in all four dimensions of faculty vitality. She leads her college diversity committee and collaborates with her colleagues. She also leverages her position as a full professor to help others whether they are students or other faculty.

Vanessa has been involved in community based work since she started her career. The professional path for Vanessa has been proving herself to her peers since she entered the academy and has continued all the way up to her earning Full Professor. Vanessa shared that even with all the advancements that have been made when it comes to gender and other identities that race is still the most difficult category. Vanessa uses her position to help others that need help getting to their desired professional destinations. She engages in diversity as a trailblazer making ways for others that follow behind her.
Yolanda.

Yolanda is a Latin American Female and in the 40-50 age range. She is an associate professor. Her perception of diversity is that she advocates for others that cannot advocate for themselves. The salient lenses that inform her perception of diversity were race and ethnicity. Her responses showed that she is engaged in all four dimensions of faculty vitality. Yolanda understood her influence in her field at this point in her career. Her background is more clinical so she works with her colleagues to make experiences go smoothly for their clients. She also has influence over who can use the services in her place of work and how outsiders can access the services.

She is very much in tune with her Spanish heritage. Spanish is Yolanda’s first language and English is her second. She is the person that colleagues most come and get when they need a translator and she serves that role happily. In Yolanda’s discipline she shared there are a lot of gay and lesbian clients that come in and that in her discipline sexual orientation is talked about and embraced. In her role Yolanda shared that she is able to advise graduate students and she enjoys that part of her job.

**Theoretical Framework and Saldana’s Coding**

For this study, coding was based on the theoretical framework “faculty vitality” which helped to understand faculty engagement in four dimensions. Using Saldana’s (2009) verbal exchange coding helps with reflecting on conversational and personal meanings of what the participants’ shared about their experience (Saldana, 2009). Using Huston’s and Saldana’s work help inform the study on the participants’ experience in STEM environments at a research university that’s a Predominately White Institution (PWI). Verbal Exchange
Coding’s categorization and analysis explores the personal meaning of key moments by examining the practices or the “cultural performances of everyday life” (Saldana, 2009, p.114). The five categories are as follows:

a. *Routines and Rituals* of structured and symbolically meaningful actions during our day;

b. *Surprise-and-Sense-Making Episodes* of the unanticipated or unexpected;

c. *Risk-Taking Episodes* and *Face-Saving Episodes* of conflict-laden exchanges;

d. *Crises* in a verbal exchange or as an overarching pattern of lived experience; and

e. *Rites of Passage*, or what is done that significantly “alters or changes our personal sense of self or our social or professional status or identity.”
In this study Huston’s framework (four dimensions/codes) was combined with Saldana’s coding scheme of five sub codes for this study (Figure 2). These codes were applied to comments of the participants.
Figure 2. Model of Huston’s Faculty Vitality and Saldana’s Coding

Intellectual exchange and collaborations/routines and rituals.

Engagement in intellectual exchange and collaboration is the healthy sharing of ideas.
among colleagues (Huston, et. al, 2007). Routines and rituals were structured and symbolically meaningful actions during the day (Saldana, 2009). For the purpose of this study faculty engaged in intellectual exchange and collaborations as a routine and ritual encompassed activities that were the norm for faculty in STEM environments. A routine or ritual was something one did as if they were on auto-pilot. It is something that happened naturally or in regard to ritual it occurred commonly. The activities and actions faculty did occurred without them thinking about it. The activities that occurred were a reflection of the academic environment, culture, and climate.

Several participants described intellectual exchange and routine/ritual in their responses. They were able to make the connection to the routines in their work environments. Vanessa shared:

I mean I would come to a faculty meeting and learn that four or five people started a new project. And I would ask people if they do anything in this area will you please include me and they never did. And it could be me it could be something about me. But I’m not I’m just saying the literature says that’s not uncommon for women and minorities to be excluded from those types of formal and informal mentoring types of situations. It’s not uncommon for us to be kind of sink or swim out there on our own. And I certainly experienced that and I don’t want others to experience that.

Although what Vanessa shared can be framed in Huston’s mentoring relationship category what she was also identified is it is routine for people of color and women were excluded from intellectual exchange opportunities like collaborating on research to improve their
research agenda at a PWI. These types of collaborations lead to faculty successfully earning tenure. Tenure can also impact how faculty engaged in matters of diversity. Marcus shared comments in his response to tenure.

So there’s a flip side to the tenure thing which is you do, I think, get more access and more influence and more credibility between your peers, but the other side is that there’s less – because when you’re not tenured, you’re trying to get tenured so you almost want to do anything, right? So you teach that class and do that initiative, you know, the chair says we’ve got to start this new thing, “Oh man, that means I’ve got to work sixty hours a week, but I’m going to do it because, you know, that bar.” But once you get over that bar unless you really are motivated, like okay, well let me associate my goals and in four years be full, then you’re still on track. Most people are not like that, they kind of get fat and lazy after they get tenure so in terms of diversity issues unless you’re really an proponent for it or you’re really advocating for it or if it’s really about you, I mean, it’s harder to convince folks who don’t have that desire ethic to change their mind. And that’s like the, in my experience, the other side of it. So it’s been good in terms of influence but it can, like, harden people who really don’t agree and there really isn’t a way to negotiate different ways of handling stuff.

In spite of the general belief that tenure gives faculty freedom in their discipline and among their peers when it came to diversity if it’s not a priority before earning tenure then it may not become one after achieving tenure in STEM environments at a PWI. Faculty can choose not
to get involved in diversity prior to tenure and decide not to engage after tenure because there may not be an incentive to be intentional to improve diversity.

Deanna addressed the routine of how women were addressed in the academic environment. It’s routine for there to be assumptions about a women’s academic achievements. Deanna shared an experience where she was with her Dean and being introduced by a friend who was also a colleague and this is how the exchange took place:

I’d like to introduce Dr. (exclude name) Dean of (exclude), Dr. (exclude name) associate dean for research and (Deanna) and the person who is the emcee is somebody I adore and I know he didn’t know what he was doing. But I’m looking out at this sea of middle school girls thinking we could have given them the message that you can do anything and we just gave them the message not so much. So I share that kind of thing and I talk to folks about for me it’s a subtle diversity issue if you’re addressing me as Ms. or Mrs. and you’re addressing my male colleague as Dr. then you’re making a decision about my educational background I think based upon my gender. So I talked to them about that say it’s a hot button issue for every women I know on this campus in a STEM discipline and we all talk about it.

In spite of the general belief that gender issues are no longer germane there is still evidence that issues around gender still exist. Also, Deanna shared the person that made the assumption was someone she adores and she gave him a pass by saying “I know he didn’t know what he was doing.” This showed that Deanna recognized that we are all on a lifetime journey embracing diversity and she did not demonize this person. She did share that she did
not like what happened and when we make assumptions we miss opportunities to show people a different reality as she said about showing the middle school girls that they can do anything. Further comments in this section identified the routines faculty had experienced in intellectual exchange and collaborations. The routines provided insight that some experience treatment that does not open doors to more opportunity but evidences that more work has to be done to improve diversity. The next section looks at intellectual exchange and collaboration in surprise and sense making episodes.

Intellectual exchange and collaborations/surprise and sense making episode.

Engagement in intellectual exchange and collaborations was the healthy sharing of ideas among colleagues (Huston, et. al, 2007) and surprise-and-sense-making episodes is the unanticipated or unexpected (Saldana, 2009). For the purpose of this study faculty engaged in intellectual exchange and collaborations as a surprise and sense making episode will encompass times when something happened that caught the faculty off-guard or by surprise or motivated them to respond or react in a different or abnormal way. After their response or the episode that occurred, the faculty member made sense of what happened or tried to understand it from an informed perspective. For example, if a faculty member encountered something that was uncomfortable they would justify it with deductive reasoning.

Tyler, Vanessa, David, Sean, and Dana shared accounts of how diversity can play out in exchanges and then they made sense of what happened. Tyler shared “when asked how he handled diversity issues with his colleagues has changed over his career” he said:

Can’t use myself as a normal person because I never let – unless it was blatant which I have to say I’ve never had anything blatant. Now, my wife will tell
me, “Well you didn’t recognize what was blatant, just never let it bother you and you just went about your business.” Now, that can be true. There may have been some stuff that was blatant and I let it rub off because I was so used to it that I never let it stop me, but I guess to be blatant to me it’d have to be | really blatant, that’s what my wife says.

In Tyler’s response he made a decision not to let things bother him and made sense of it by saying unless its blatant then I can just go about my business.

Vanessa, on the other hand shared that diversity was important to her. She continued by saying that diversity was a lot of different things, but she recognized that race is still a major issue.

What I’m saying is the university and the institution is a microcosm of the society in which they reside. And so in our society the most for me prevailing and pressing issue is ethnicity does that mean I don’t work on the other ones? Of course I do, but unless we’re ready to deal with that one head on you know if you look at how we’ve been progressing strictly as an institution and not just us you look across institutions in student populations that gender gap is closed in many disciplines.

In spite of the gender gap closing, Vanessa justified what she did by race because race issues are still prevalent in STEM. Both Tyler and Vanessa being at a PWI, one can surmise how they made a decision to overlook injustice and be inclusive of other identities because perhaps their experience as African Americans informed them they should do this at a PWI.

David spoke programmatically about his exchange in diversity as a department head.
He made sense of engaging in diversity because it’s about relationship development. He said:

so the reputation and how a program is received and whether it is perceived as
a welcoming place is really really important. So it’s not just about what you
do on paper, it’s much more about building relationships.

Sean shared why he got involved and stayed involved in diversity. According to him we let too much slip and he made sense of his engagement. He says:

I think we would all have to admit that we let too much slip by when we see it
and we’re just unsure as to how to deal with it. Often we think about what we
might have done too late, you know, the incident is passed. The people have
changed; we’re no longer even at the scene perhaps when we think of it. You
know, gosh what I wish I had done. But I decided early on that – and really
particularly during the period when I was directing our undergrad and then
grad programs – that I needed to do more than we had done before to recruit
and retain and try to guarantee the success as best we could of students of
color.

With Sean and David both being white men one may surmise it’s easier for them (compared to colleagues that are people of color) to focus on diversity without concern of professional ramifications because they are at a PWI.

Dana shared that her colleagues have perceptions of other ethnic groups and connected their ethnicity to their academic ability. She shared that she does not see that same dynamic between academic ability and ethnicity. Dana said:

I think you know it’s interesting sometimes I heard someone say it that
diversity that they thought they needed tutors for some of the African American that were in my class. And I said you know I didn’t say this then but I should have said it and I don’t think it’s just the African Americans that might need tutoring was kind of my thing. I think anytime because I don’t see from my perspective and this may be naïve I don’t see that there is a particular ethnic group that struggles more than the other in my class. The class is really hard and for the first time apparently there forced to think about what they learn.

Everyone made sense of their engagement in diversity different ways based on what identities are salient to them about diversity.

   Intellectual exchange and collaborations/risk-taking episodes and face-saving episodes.

   Engagement in intellectual exchange and collaboration was the healthy sharing of ideas among colleagues (Huston, et. al, 2007) and risk-taking episodes and face-saving episodes were conflict laden exchanges (Saldana, 2009). For this study, faculty engaged in intellectual exchange and collaborations also encountered an episode in their work environment that encourage them to take risks with colleagues or save face by protecting themselves. In this code faculty may step out and do something different that’s not the norm or they may retreat and engage in a way that protects their pride, reputation, or position.

   Park, Sean, Vanessa, Yolanda, Monica, Deanna, and David all engaged in intellectual exchange as a risk taking or face saving episode. The participants did not engage for both risk-taking and face-saving, it was one or the other.
Park shared an episode when he was introducing a student to a colleague, but he was not sure of their gender. His discomfort surfaced and he tried to avoid how he recognized their gender, but he ended identifying them by their gender. He says:

Because of having a very gender control dressing style and other kinds of cues you often pick up on will help you define somebody’s categories. So I wanted to introduce her to a visiting scientist and ah somehow I found myself needing to refer to her by a pronoun and rather than ask her or inquire from her or ah mention that her preference or gender identity was different at first I just guessed and ah turned out I was correct. Really it was avoiding the true question or the courageous question. I was lucky to umm not to overlook her obvious preference to be gender neutral when I made a guess.

Interestingly when people encounter interactions when they are unsure they retreat and try to save face, but Park stayed in the exchange and was able to assist his student.

Sean on the other hand, shared that he was a major proponent in the Gay, Lesbian, Bi-Sexual and Transgender (GLBT) center being established at Capital University. His activity in the establishment of the GLBT center can be seen as a risk taking episode because of the sensitivity and unrest around this identity of diversity.

I did write the proposal for the GLBT center and first went over and made appointments with the chancellor and the provost and the vice chancellor for student affairs, all of whom were people I knew as friends, but none of whom knew me as a gay person.

When Sean went in to engage his colleagues in this discussion the risk for him was self-
identifying as a gay man. However, he took a stand for what he believed in and it led to the establishment of the GLBT center. While his race may not cause records to play at this PWI he still has concern because of his sexuality.

Vanessa’s engagement in intellectual exchange could be seen as face-saving because she shared that she participates in activities for the purpose of promoting what she does in diversity and enhancing visibility of her programs. She shared:

You know it may or may not help that work at least I’ll be able to put a name with a face. So try to be strategic to. Is it going to advance what I’m doing. Is it going to put me in a place to be around and engage with people that can help.

Vanessa’s comments show that her work in diversity must be strategic not only because of the nature of her work, but also because she is doing this work at a PWI. Her comments represent how race and gender still play out in how diversity is received and enacted.

Yolanda’s engagement was different from the others because the face-saving episode she shared shows how faculty may minimize their emotions with injustice or mistreatment to get along with colleagues. Yolanda shared how her colleagues treated her made her feel stupid but you the reader will notice how she prefaced her comments with “it’s a silly little thing.” She said:

This is kind of a petty silly little thing. English was not my first language I’m fluent in Spanish and umm and sometimes I’ll mispronounce a word I know you think I mean and sometimes my friends who are colleagues will make fun of me. Laugh but you know in a funny way they are being funny I know they
are being funny. But sometimes it makes me feel stupid. You know like I don’t think they have mal intent they are just being funny but when it happens more than a couple of times then I’m like they’ll say English wasn’t her first language which is true.

In spite of how Yolanda felt she defended her colleagues in their mistreatment of her. This mistreatment could impact her relationships with her colleagues but she willingly overlooks it. One can also surmise that her being in a STEM environment that she may feel isolated and because she is a Latina at a PWI her internal script informs her to be careful.

Monica took a different approach. She shared that she takes risks when she sees injustice. She shared when a colleague addressed a gender issue of faculty making jokes about women. Her colleague said that jokes are not made and that he does not do that in his personal life. However, Monica asserted herself and let her colleague know there is a difference between what goes on in his personal life and what happens with their students. She says:

She showed the data and one of the faculty that is my colleague inside my department said “I never heard of that. I have a wife and I have a daughter and they never told me that.” Wait a minute they were never in this situation inside this particular classroom. We are extrapolating. Your wife and your daughter can be wonderful but don’t extrapolate when we’re talking about a professional situation. You have to understand. We’re talking about students. We have to change what is our students.

Monica confronted her colleague and addressed the issue while staying focused on their
students.

Deanna, talked about her experience with doing faculty activity reports which is one of the documents used by faculty when earning tenure. She shared that she did not share all of her diversity activity in her reports which can be considered face-saving since diversity was intentionally left off of the document. She said:

So if you look at what I done with women in (exclude discipline) I was pretty much under the radar screen until I was tenured. At which point so faculty activity reports I never reported that kind of stuff until I was tenured. At that point I would put on faculty activity reports I was constantly giving talks about females being a (exclude expertise) that’s when I started letting people know. But tenure has a huge advantage for me.

Perhaps being in a STEM environment that is highly competitive and isolating Deanna decided to present other work achievements and not diversity because it may not be valued in her work environment.

David’s perspective on how he engaged in diversity and it being risk taking was done to acknowledge that there must be some intentionality when you’re engaging in diversity. He shared that what was done in the past to counter discrimination will not suffice now when addressing diversity. He shared:

I think the old model was umm going back it’s a you know last century was that if you weren’t discriminating you were okay. You could sort of be passive. And we wouldn’t discriminate and that’s it actually. To some extent that works a little bit part of the way. You don’t pull people out they come in
now. Realizing it has to be more than that there has to be an active intention. David’s account shows how times have changed when thinking about race relations and other aspects of diversity. In present times there is more faculty have to be aware of regarding diversity because of the change in demographics and increase in aspects (sexual orientation, language, etc.) of diversity.

Intellectual exchange and collaboration/rites of passage.

Engagement in intellectual exchange and collaboration is the healthy sharing of ideas among colleagues (Huston, et. al, 2007) or what is done that significantly “alters or changes our personal sense of self or our social or professional status or identity” (Saldana, 2009). For this study faculty engage in exchanges that change how they see themselves individually and in their place of employment. For example, a faculty member can go through something when partnering with someone and it changes how they understand their position or how they see themselves in their work environment. A value can be added to or reduced from their worth in their department or at their institution.

Park shared that his involvement in a diversity retreat had an impact on how he sees himself personally and professionally.

It was the CT Vivian seminar. That one had a great impact on me because I understood that I accrued a certain amount of white privilege for you know being who I am. That I had the choice to reveal I was Jewish or to I think to choose and that umm I probably was harboring certain stereotypes which I wasn’t aware of and so umm I decided that I needed to do more diversity work.
This quote shows Park’s exposure to something new that opened his eyes to his privilege. Now seeing his privilege he said it motivated him to do more diversity work because his privilege also has an impact on others around him. He took responsibility for what he learned and decided to do something. Further, being at a PWI Park’s newly developed awareness can help others that are marginalized. Park continued to share that his diversity workshop cleared some ideas about dynamics between groups.

I didn’t see any reason why we shouldn’t be a more diverse profession and we’re not. So that was always a goal and objective of mine was to increase diversity in the profession. But not until I did the training was it anything more than a sort of a vague ah I could have to necessarily know how or know the dynamics to which I could begin to make a difference.

Yolanda talked about issues of salary and that her salary is lower than others in her department. She also talked about her will to fight and that she does it for others but when it comes to herself she does not do it as much.

But it’s funny I’m really passionate about patient care and quality of care in the hospital but when it comes to fighting for me I’m like you (whispers) I do what I say. I wish I could have fought for more money I guess that’s something I could have done better. I feel like I’ve been a dutiful faculty member I’ve done everything I’ve been told to do… so I don’t know.

Salary is one way to show a faculty member how much they are valued. From Yolanda sharing that she has been a dutiful member shows that this situation is not something she is settled about and based on how she has worked something should be different with her
salary.

Vanessa shared her perspective on how women and minorities are left out of formal meetings that contribute to their development.

it’s not uncommon for us to be kind of sink or swim out there on our own.

And I certainly experienced that and I don’t want others to experience that.

From her experience Vanessa chose not to let anyone else feel the way she did being isolated. This is important to notice because at a PWI having an administrator that is aware of challenging people of color experience in these environments can be helpful to career advancement of marginalized groups.

Decision making process and routines and rituals.

When faculty participate in activities that have an impact on their work environment and also impacts others (Huston, et al.2007) the activities are structured and symbolically meaningful actions during the day (Saldana, 2009). These kinds of interactions can be participating on committees like tenure and promotion, committees that address salary increases, admissions, and any other situations that are common in the academic environment. By response of a faculty’s position and their rank they participate on these committees.

Monica, Vanessa, and Tyler gave different accounts about engaging in decision making processes and what happens when it’s routine and ritual. Monica shared an experience when she was on a graduate committee. The valedictorian of the class was an African American woman student. The faculty in her department asked Monica to talk to the valedictorian to influence her to stay in their graduate program.

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I think we had a case here that was interesting. I know it succeed very well. We had a valedictorian that happened to be a Black female. It was when I was director of graduate programs. Someone approached me. We forgot about this and try to see if she still stays here. I said no she is not going to stay here nobody ever talked to her. They said you should talk to her. One of my colleagues said I don’t think it’s worth it to stay here but if she is valedictorian she is worth it.

This quote shows its routine for people of color to be overlooked for opportunities in graduate school until they show that they can handle academic rigor by excelling more than their peers at a Predominately White Institution (PWI). Monica’s account showed how faculty wanted to keep a young student because she was valedictorian. Monica shared that she did not tell the student to stay and instead provided the student with contacts at other institutions and helped her get into graduate school elsewhere.

Vanessa shared a situation from her experience as an Assistant Dean.

When I started this position the assistant dean did not have a seat at that table. The Assistant Dean for diversity the other assistant deans did but the assistant dean for diversity did not have a seat at the table and I thought that was fundamentally wrong and I thought that showed where diversity fit in the college. But umm I was able to get that and I’m almost embarrassed to say when I started there was not budget allocated to this office. So I had to and [NAME BLANKED] told me to ask for what you need and most of the time you’ll get what you need. But I wasn’t going to live every times I need to
order some paper and when I want to do something I run and ask for it. So I got a budget established. There was not any budget code for diversity. The first thing is she got what she needed, but I wasn’t going to go and be asking every time I was going to do something. So we got budget codes and I have to submit a budget request every year. But there is a budget now. There was no staff person.

This quote shows how it's routine for offices that are charged to address diversity often do not have a budget or other resources to help them accomplish their job. Vanessa being an African American woman has to work hard to get support for diversity at this PWI. Further, being at this research institution she has to find ways to justify getting support for diversity.

Tyler gave his perspective on how his experiences influence his perception of diversity when participating in decision making processes. He says:

Well, I don’t jump to the race conclusions quickly. I probably [indecipherable] if all else fails and everything can’t be explained otherwise, then I have to conclude that that must be related to that. That’s always been my mantra. Life will say you should jump to it a lot faster because it’s pretty obvious, but I give benefit of the doubt first because when it jumps to that then I get angry, then I shouldn’t be involved. So I don’t want to get to that point where it involves that because it’s disappointing because I shouldn’t be a part of it. So that’s why I don’t bring it up because when it gets to that, then I’m disappointed and then we have to really talk about what the heck is going on here.
Tyler sees himself as a representative, but he still does not always jump to race being the reason for some occurrence even though it’s obvious. He made a decision not to focus on diversity so that he will continue to play an active role in decision making. Interestingly, while it’s great that Tyler aims to be objective to say that he may get angry tells that there is a fear there. The fear is how others will see him and also what he may do. Even focusing away from diversity does not remove the feelings of matters of diversity while being at a PWI.

Decision making process and surprise-and-sense making episodes.

When faculty participate in activities that have an impact on their work environment which also impacts others (Huston, et al. 2007) and it is unanticipated or unexpected (Saldana, 2009). These kinds of activities faculty engage in normally, but the result of the engagement catches others off guard or the end result is the faculty member making sense of a made decision. For example, if a faculty member sits on a committee and all the participants decide to let that a faculty member has not done enough work to earn tenure, and the anticipation is this person would get tenure then this qualifies for a surprise or sense making episode.

Rebecca, Vanessa, Dana, engaged in decision making processes often. Conversely what occurs in these instances results in the participants making sense of what happened in their interactions. Rebecca shared that in her department decision making is not something her department does well.

We’re a faculty department and not everybody always get along. Decision making processes in this department can sometimes get extreme. Sometimes they work really well. I think when people are generally in agreement.
Sometimes they completely break down. I’m not sure if that’s something that we do well.

It is possible that because Rebecca’s colleagues are heavily focused in research this impacts how they make decisions. Further, being in STEM environments, does not guarantee that administrative work is handled well because as Xu (2008) posits STEM environments are competitive and isolating. Therefore, making decisions can be difficult when colleagues are not being collegial towards one another.

Vanessa shared that she was proactive in her decision making processes like tenure and promotion. Conversely, she shared that she often has to remind people that she is a full professor and understands the process.

Now I’m at a point where I am more proactive about if I see something that doesn’t seem right umm then I learned faculty members having a hard time with T and P I was like so stepping in and being more vocal about saying hey why is this going on. This person has a solid packet how did this happen, what is their recourse what can they do. There has to be an appellate process and helping them navigate that appeals process that kind of thing. You know so it’s being more forward. Being and like that you know and I have to keep reminding people that I’m a full professor because sometimes they come at you like how you know about that. What are you all in that for? Because I’ve been through it. Been there done that. Now my question was and I don’t know why I have to keep reminding people of that. And that’s why I do it because I have to. Some days they conveniently forget that.
Vanessa having to remind her colleagues of her accomplishment could be a response of being at PWI where the majority of the leadership are white males. Dana’s perspective is from a senior faculty that no longer brings in funding, and primarily teaches. She shared that sitting on committees with other faculty is difficult to be valued based on whether or not you bring in research dollars and not your contribution.

And I made that statement that we the whole funding issue on campus is a club in part because if you’re funding then you’re accepted into the club and you have opportunities to play for the funding. But if you’re not funded it like you’re leprosy. So it’s like you know it’s kind of an interesting dynamic and the sad thing to me is you have faculty on campus who aren’t active in their research program anymore. They’re not listened to they’re basically made to feel like they are second class citizens which is like the diversity issue.

What Dana experienced can be an effect of being in a STEM environment that is competitive. Her colleagues may not see her as a contributor to their position or status among other STEM departments. Uriarte, et al., 2007 also suggests that research institutions value a limited range of activities that can be classified as scholarship. Dana is up against two potential issues in her environment. In spite of faculty success one can still experience not being valued if others no longer value what you bring to the department.

Conversely, Rebecca shared a different view on decision making processes and sense making. She provides insight into why people respond or react the way they do in decision making processes based on their experience.

So your perception of how diversity negatively effects people is based
on what you went through but I think you get an even better perspective when you see the decision making process so it may not be your experience but like so maybe because you know you have this you know very personalized view of what you went through so when you see somebody else and what’s going on with them and you hear someone else’s perspective on what’s going on that can be very eye opening in terms of I didn’t get that feeling at all. So maybe you have a candidate not doing well in the tenure process and you have a view as to why and someone else has a view as to why and maybe you come at it by including diversity in your opinion and others don’t. So I think those experiences are sort of enlightening and you say okay clearly not everybody is thinking about diversity and it may not even be on their radar at all and that didn’t even occur to you for example.

Rebecca’s account is another example of the isolated nature of STEM environments. Unless a department is intentional to provide opportunities for faculty to expand their understanding of diversity it allows faculty to remain mentally in silos that can be harmful to others depending on the positionalities of the parties.

David shared his experience being raised with parents that were college educated and middle class. He acknowledged his privilege and said this is why he must be intentional in diversity.

So these advantages that people have built on each other and only I think when you have a chance to look back and you meet other people more different then you realize how exceptional having those advantages are. Then
you realize that I have this very privileged experience. So if you put every tub on its own bottom everyone and everyone will rise to your level. Well you know it’s not necessarily true because I can’t really say how I would have done if I had not had these advantages. I can tell my story that I would have been fine if I grew up in poverty that I would have been okay but I don’t really know that. So that’s the perspective or the big picture perspective.

David made sense of his experience and is aware that he may not see things the same way or experienced life the same way if his living and upbringing conditions were different.

Decision Making Process and Risk-taking Episodes and Face-Saving Episodes.

Decision making processes are when faculty participate in activities that have an impact on their work environment which also impacts others (Huston, et al., 2007) and it is conflict-laden exchanges (Saldana, 2009). These kinds of decision making activities faculty engage in to make decisions that is not the norm or they do something that protects their pride or position can be seen as risk taking and/or face saving. For instance, if a faculty member is on an admissions committee, and they decide that a person needs to be granted entry into their program, then they take a chance on the individual and work with them while others in the department oppose letting this student in, is risk taking. Another example is if the faculty member works with a person because it will benefit themselves and not necessarily the other person this can be seen as face saving. Engaging in diversity can be those kinds of activities can be perceived as either risk taking or face saving.

Vanessa, Park, David explained there engagement with decision making processes being more about face-saving because they waited to have tenure to be more free in their
engagement. Vanessa said:

I think I’m much more forward about it. Earlier in my career it didn’t really come up and I think that’s a product of my job and my role now that I’m much more forward about it. Honestly when I was a faculty member in the department going up through the faculty ranks I tried not to cause any trouble because these people got vote on you. And I didn’t even speak up for myself much less for anybody else much less be an ally for anybody else. I just worked and just felt like my work will speak for me. And I saw inequities where the extra resources that faculty members were getting that I wasn’t getting.

The competitiveness of STEM environments and Vanessa’s lived experience informed her to be careful in her environment before getting tenure. Her account showed that in her early career she was very cognizant of her activity and how it impacted her position among her peers. Similarly, Park shared that he wanted to fit in before he was tenured.

Particularly when I was non-tenured faculty or before I got tenured I felt like I wanted to be very careful about people’s impressions of me. I wanted to be viewed by others as being an acceptable candidate for tenure which would mean and I recognize the fact there was a subjective element to it I don’t know if this were a service aspect to that because it didn’t necessarily stop when I got tenure. I just sensed that diversity was something we were very open about in our college. And I wanted to fit in.

Referring back to the Table 2 and look at Park’s identity as a Jewish American even he
shared that he wanted to fit in. It is not always faculty of color and women that experience uncertainty in their departments especially with regard to matters of diversity. Perhaps his value system upholding diversity informed his perception that he was in a place where he may not fit in, regardless of his privilege as a Jewish man.

David shared that how he spoke out changed over the course of his career.

I think over the course of my career its. I’ve realized and some of it as you get older and you have more authority you have tenure you’re a department head you can speak up, is sort of the need to be intentional about it so.

David’s comments reflect how tenure impacts how a faculty member uses their voice in diversity as they advance in their career. However, his race and being at PWI can also affect how vocal he is in support of diversity because he may not feel any threat toward his career or his employment at his institution.

Tyler shared a different perspective about decision making and risk taking. He addressed diversity in decision making being about going on and getting ethnically diverse faculty and being intentional about how these faculty are pursued.

Before we can say, “Oh, it’s a pipeline issue,” have you exhausted your, you know, recruiting stance? If you have not, then don’t blame in on the pipeline, you haven’t done your job and they argue, “Well, I shouldn’t do anymore different than this because it’s not the same thing.” By virtue of needle in a haystack, come on, so if you don’t find that needle, what are you going to do? Go out and look and it’s going to be tough, it’s not going to be easy, but if you’re committed then you’ll find it and we’re all about providing more
knocks at our door. Not every knock is going to be allowed to enter, I guarantee you at least you need to knock before you can find one that will be able to enter.

According to Tyler, recruitment of diverse faculty is difficult to accomplish in his discipline. From his perspective recruiting of diversity takes time and resources and if diversity is important in STEM environment at a PWI the department must expound resources for both.

Rebecca addressed being vocal in decision making from the perspective of taking a risk by being vocal with her colleagues. She shared how she recognized the perception of her colleagues when it comes to hiring a minority candidate verses someone else.

When you go through these hires some people are like “wow this person ten times better,” but so if we’re hiring minority candidate we’re hiring less than great or something right. But this was the case where we really were splitting hairs on you know it was perfect. So I think I was fairly vocal there so to me I think I handled it. It wasn’t a great outcome because we ended up not being able to hire either one of them.

Rebecca’s comments reflect why being at a PWI makes it easier for minority candidate to be held up to different standards because he or she has entered an environment where they are not like everyone superficially. While it was not the outcome Rebecca hoped for, being a particular candidate being hired, there was some movement from the fact that she was vocal with her colleagues.

Marcus saw his role in decision making and risk-taking to be that of advocating for others.
I think that, you know, I have noticed that particularly with my African-American students, particularly the male students, for some reason, you know, are, you know, they have such a full life outside of school, you know, just to make ends meet. That it starts to, you know, if something happens like they get sick or, you know, lose a job or, you know, something weird happens, it's like a very -- they got very shallow, like, cushion, you know. And so it becomes a situation where you got to sort of advocate in their interest, you know.

Marcus’s position at a PWI and his ethnicity inform his decision on who to advocate for as well as how he should be an advocate.

Sean shared that for him over time in his decision making and risk taking he’s changed how he introduces himself. Sean takes the risk in sharing his identity as gay leaning bi-sexual male.

I mean, I always, from the start, promoted women and people of color in our field and did whatever I could do. And when I was directing the programs there was, of course, opportunities to do a lot more then when I was just a regular faculty member. And so those were kind of ongoing and I think not a big change; the biggest change was certainly with respect to GLBT. I am – I usually introduce myself first as gay, more accurately a very gay-leaning bisexual.

Sean’s comments reflects how his involvement in matters of diversity has increased as his career advanced, but it also revealed something else. Even a research university sexual
orientation is still an issue.

Decision making process and rites of passage.

When faculty participate in activities that have an impact on their work environment it also impacts others (Huston, et al. 2007) and significantly “alters or changes our personal sense of self or our social or professional status or identity (Saldana, 2009). These decision making processes that faculty engage in impacts another person so much that is changes how they see themselves or it impacts how they do things socially with colleagues in their work environment. Potentially the status of the faculty member also changes.

Conversely, Marcus shared that even with all of his engagement that he did not change after he earned tenure.

And then I would say that I've talked to international faculty who's in the same boat, international students where they don’t understand sort of mainstream majority culture here, so they revert to what they know and then there are all these, like, rude awakenings and, you know, rubbed edges and then it becomes, like, your tolerance is like, well, I'm going to stick to this because it's a part of who I am or I can still be who I am and still do what I got to do even if I, you know, adapt to a particular thing or not.

Vanessa shared that she engaged to help other people. How she helps them is based on not on her availability but on her willingness to help.

So I definitely have made myself available. The good thing is it’s not that many because you could just be because you know I can’t sit here and do that all day. But the good thing is that here has not been that many coming up or
coming through my area so I have been able to at any time if they needed me to review something I have been able to do it. Its only I can name them.

Vanessa’s comments are a reflection of being at a PWI. She said “it’s not that many” which means that faculty of color stick out and she takes responsibility to help them not feel isolated in this STEM environment.

Sean shared on this dimension from his experience as a graduate program director. He also shared when he became tenured that he thought it was his responsibility to speak up.

At the graduate level though, you make decisions as director of graduate programs as to who’s getting in and who isn’t and so I had a lot of ability there to make decisions. And then, of course, as a tenured faculty member, when I got to that point I began voting on tenure and promotion for other people. So I could speak and vote, but I think speaking up is also part of it because it’s not just casting your own vote, but it’s trying to get other people to see things in an enlightened way and if they weren’t going to – my colleagues in fact are quite enlightened anyway; I don’t have much of an issue there, but I think people who care about diversity need to be prepared to push the envelope and not just hope everybody else seeing it the way you are.

Sean points out that he sees it as his responsibility to assist others more openly with regard to diversity now that he has achieved success. He sees his involvement as something to use for others.

Social activities and routines and rituals.

Anything that contributes to collegial relationships and helps to facilitate intellectual
exchange and mentoring relationships that creates a sense of community (Huston, et al.2007) through structured and symbolically meaningful actions during the day (Saldana, 2009). The way that faculty socialize is part of the common way that faculty get together. These activities are designed to break down barriers between colleagues in the departments and the ways these activities may be common to that departmental culture or it can be a new type of initiative.

Dana, Yolanda, Vanessa, and David all shared that they value social activities with their colleagues. Dana shared that she values social activities because people find ways to divide themselves. She shared:

People find strange ways to divide themselves. I think to me that’s the biggest killer of motivation for across the board for whatever going on so I think in terms of social activities they are really important for having the concept of the group as a group. I think they are way more important than people realize.

In STEM environments that are focused on research it is easy for division to happen if all faculty are focused on their research. Barriers can be built easier only focusing on advancement. Dana expressed that she sees social activities as a way of breaking down barriers. Yolanda shared that she likes social activities but when she is with her peers she notices some of the differences between them.

I’m the only Latina and no African Americans. Mostly white folks, men and women, usually one or two gay lesbian folks that come. I guess it’s not something that I usually think about. I feel comfortable with my peer group. I
think I’m probably the only working mom in my peer group. And in that way I feel sometimes a little bit like as an outsider because they’re all talking about all the cool restaurant they go to and I’m like ooh we got a coupon for Kids eat free at this restaurant whatever. It’s a different we’re in a different social scene for sure. Sometimes I get envious of them being able to go out to dinner and I think how can you afford this going out to eat all the time in these nice restaurants.

While she enjoyed being with her colleagues she said that she sees a difference in places her colleagues go and what she is able to do. Being at a Predominately white institution brings out Yolanda’s ethnic diversity more in her department. Plus it also brings out the other differences between her and her colleagues. Vanessa on the other hand shared that she attends social activities out of necessity because of her position. She shared:

So we’ve got retirement luncheons and dinners and stuff for retirees. We’ve got alumni oh I forgot those kind of things can eat up your time. Alumni dinners and things like that. Award ceremonies and you know award ceremonies that we do. You know all of those kinds of events that we do in the college. I try to have my presence there because it’s one of those things. If I’m not there its noticed. If somebody else is not there. Because of a lot of these events since our college is large at these events you’re talking about hundred to two hundred people. So if I’m not there its noticed because I stand out.

Vanessa’s comment is another example of how being at a PWI can influence how faculty of
color engage with others. Vanessa also shared that it’s routine for the person that is of the minority group to be noticed if they are not present. Social activities in STEM departments can be like the culture of STEM environment isolating. When she goes to these events she may not want to be there but she feels it is her duty to be seen which also adds to her value. It is like Vanessa does not feel like she has a choice to or not to participate.

David shared that he goes to social activities because of his position, but the way he engaged with it it’s a choice, but he recognized that because of his job as a department head that he needs to be involved. However, when he participates, usually other faculty do not participate. He shared:

Faculty generally don’t come. They don’t like to come to graduation. Faculty usually attend graduation if they have a student finishing. It’s like pulling teeth to get faculty to come. All the graduates that haven’t left town if there are still here they all come. There really is not a diversity factor there. So their families come. In fact I would say to some extent for whatever its not necessarily a diversity issue per say but there is greater excitement I see it among graduate student.

Working at a PWI, David’s involvement is more focused on the department and not on racial or other diversity representation.

For others like Deanna and Sean social activities are great to role model and for people to meet in an informal way. Deanna shared:

You know it’s interesting when I keep saying I think for me it’s important that I’m a role model because I am still a woman in a college where there not as
many women as I would hope and I’m in a profession where there are few women.

Sean shared:

Nobody’s forced, but we’re encouraged and allowed to go and participate and I think that particularly for new incoming grad students is a great way to meet each other and faculty in an informal way.

Social activities are routine for their departments and they see it as a good way to interact with others and be seen.

For Monica, and Rebecca social activities are not what their department or colleagues engage in. Monica said:

Yeah we do but it’s boring. It’s boring because people don’t have social skills.

Yeah we have holiday party this kind of thing its very boring. People are very boring.

Rebecca shared:

I’ve noticed the lack of social activities it means that people don’t feel like they fit in as well I mean there is not an effort to socialize.

So in both Monica’s and Rebecca’s work environments social activities are not very supported.

Social activities and surprise-and-sense making episodes.

Anything that contributes to collegial relationships and helps to facilitate intellectual exchange and mentoring relationships that create a sense of community (Huston, et al.2007) and is unanticipated or unexpected (Saldana, 2009). In these activities faculty are caught off
guard by something that is said or that happens while in the social activity and they are not sure how to respond. As a response they make sense of what happened but they may not be comfortable with how the interaction proceeded.

Yolanda shared that when she participates in social activities she tries to get her husband to go with her. She made sense of how the interactions between her husband and her colleagues took place. Yolanda’s husband may feel out of place because most of the people that go to the social activities are all in the same discipline. She says:

> a lot of the spouses or significant others of my colleagues tend to be in the same discipline. And my husband is not the same discipline. He is usually good at cracking a social scene even if he is the outsider. While we’re all talking about the last case this and this gross stuff. You can’t really but talk shop with your friends that you work with.

This quote showed that Yolanda likes to have her spouse with her, but if he wasn’t with her how would she engage in these social activities? Also having him there may make it easier for her to be with her colleagues.

Next is Park who shared that when he engaged in social activities he recognized the barriers that it breaks down between he and colleagues.

> There are a number of social gatherings he has that I attend. I think they are very important because when you invite somebody into your home it sends the message that they are truly welcome. I do think that eating with people breaking bread with people is a great way to break down barriers of communication. It’s a good way to establish camaraderie and understanding.
For participants like Marcus and Tyler social activities are extensions of academic activities within the department. Marcus said,

So we sponsor sort of an annual sort of family picnic/get together for the whole department that I pretty much work on to recognize the students who’ve done really well. Whenever we have, you know, sort of when the chancellor comes, you know, any sort of dignitary comes to the college I’m usually there for those kind of events.

Tyler shared when asked ”at kind of work sponsored social activities do you attend?” he shared:

I mean, it could be conferences, going to different company functions, department functions, university functions, you know, like the brotherhood event – I’ve gone to those a lot when I’ve been invited by the college.

This quote showed that Tyler thinks of social activities as something related to university functions or his practice. Sean on the other hand shared how these events are good for relationship building.

I think it’s important for faculty to participate, particularly on things that interact with students even if they find that the time is inconvenient or something, they should make it a priority because I think the students need that.

He made sense of his engagement by considering the needs of others.

Social activities and risk-taking episodes and face-saving episodes.

Anything that contributes to collegial relationships and helps to facilitate intellectual
exchange and mentoring relationships that create a sense of community (Huston, et al.2007) and are conflict-laden exchanges (Saldana, 2009). This code is for activities designed to improve relationships between people but something occurs at the activity that either motivates the faculty do something out of the norm or protect their reputation and their name. Also this can also be a social activity that is designed out of response for a negative activity occurring and this activity is to diffuse or reduce tension between faculty colleagues.

This code was interesting because what was shared revealed how some of the participants reacted when something happened while at a social activity. Park shared an interesting episode.

And as chair of the diversity committee and that the fact that I worked for a very long time with (exclude name) who is our director of diversity. Most people now know that diversity is something that I do and something that is important to me. So as I sat down somebody said “oops I can’t tell the joke now.” And so I sat down and then there was a joke that I’m not really sure how to take it. But it certainly had a racial aspect to it. You know as to whether it was it wasn’t really a slur necessarily and I don’t know if it was more against the individual who was more reactionary or whether it had a negative racial stereotype in it. In any case the joke was told and umm you know because I gave them permission to tell it and I then followed up with a story indicating an instance of prejudice that propelled somebody to do diversity work.
Further Park shared:

I’m surprised that it’s more visible that I would go over and sit down and someone would say maybe we shouldn’t make any comments that we would make among ourselves because someone that work with diversity is here. And I’m still a little unresolved about it and worried that I didn’t use my (Delete model name) training in a most effective way. It’s not my best moment.

Park experienced an uncomfortable interaction with his colleagues. He was disappointed in his response to his colleagues because he perceived that it gave them permission to continue telling an inappropriate joke about their colleague. Park saved face by joining in and he acknowledged that he did not use the diversity training that he has, which also indicates that diversity training alone will not suffice but one must have the courage to go against anything inappropriate to diversity. Park also made other comments about wanting to fit in which further evidences why faculty like Park want to be seen like everybody else and not stick out.

Tyler shared when asked how diversity is reflected in the social activities that he attends.

I mean, I’m going being a representative, but as I mentioned before, we can’t help but be a poster child, right.

Further Tyler shared:

We’re there. We represent everybody else. When we do something great, maybe that might help reduce the biases against us. When we do something wrong all of a sudden everybody did something wrong and we’re all implicated and nobody’s the same. It’s an unfortunate part of our existence;
we can’t hide our skin and so even if we have different features, we’re different individuals, we’re all lumped into the same box as if we’re not individuals.

Tyler’s response showed how race is the primary salient identity when it comes to diversity for him and that his participation in social activities is based out of face saving because of his race. As he said “we can’t hide our skin” and “we’re all lumped into the same box.”

Vanessa shared something similar to Tyler. She said:

So we have certain events. We have the (EXCLUDE COLLEGE) tailgate you name it. When I first started going in this role as assistant dean for diversity and I would walk around and I didn’t see much diversity at these events. So I’m like we need more diversity. Why can’t because so for example our donor recognition event which is a dinner but I think for a budget reason it’s going to be a reception. Whatever. We bring in huge donors that have given to the college but we also use it as an opportunity to showcase projects that someone would want to give to. First year I was a little oblivious. Second year I was like no diversity here. Third year I was like we need to have the (Delete name) Scholars booth there. I want a booth to share some of the programs that they can give some money to. Nobody gave us no money.

In Vanessa’s story she shared that she goes to events and notices diversity is not present as far people, but also that diversity is not on the minds of others. Her participation is always to highlight her program to get more support.
Social activities and rites of passage.

Anything that contributes to collegial relationships and helps to facilitate intellectual exchange and mentoring relationships that create a sense of community (Huston, et al. 2007) and significantly “alters or changes our personal sense of self or our social or professional status or identity (Saldana, 2009). In these activities something happens in the social activity that changes or impacts how a faculty member sees themselves. The mental process that a faculty member goes through impacts how they engage with other colleagues based on their self-perception.

With this code there was not a lot shared from participants that would give examples of this except from Vanessa. Therefore, I’ll highlight quotes from her interview.

Vanessa engaged in activities based on what it can provide for her in the future.

So that’s one way I make the decision where is it and what is it. But now if it’s the 4-H gala if it’s in [exclude city] or [exclude city] I’ll go to that. It’s the where it is and what is it. Its mainly what is it. Where it is and umm honestly what can I leverage by being there? That sounds bad but it’s the truth. What can I leverage by being there. Is that gonna put me in conversations with some people that may can support or help me further and advance my work.

This quote is an example of how faculty process attending activities that will help them leverage their clout to get funding. Also, this quote shows how faculty of underrepresented groups (Communities of Color) may perceive that they can’t do their jobs and be successful unless they engage in other activities to hopefully get support from donors or other stakeholders while at a PWI.
Vanessa also shared:

> You know it may or may not help that work at least I’ll be able to put a name with a face. So try to be strategic to. Is it going to advance what I’m doing. Is it going to put me in a place to be around and engage with people that can help.

When asked “why she participates in social activities?” Vanessa answered:

> We bring in huge donors that have given to the college but we also use it as an opportunity to showcase projects that someone would want to give to. First year I was a little oblivious. Second year I was like no diversity here. Third year I was like we need to have the Bone Scholars booth there. I want a booth to share some of the programs that they can give some money to. Nobody gave us no money. Most times they want to see agricultural stuff whatever. I haven’t gotten a hit from it but at least there is a presence so interjecting diversity in these social and you can’t be at everything.

This quote shows a rites of passage for faculty because when they attend programs they do so for alternative purposes like getting funding. Not attending may make Vanessa seem like she is not invested in the college, department, program, etc. so she participates to be recognized as a part of the group.

Mentoring relationships and Routines and rituals.

Relationships needed to help junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al.2007, p. 516). The relationship stimulates structured and symbolically meaningful actions during the day
(Saldana, 2009). The relationships that are established are more out of response to what is common in the work environment and more based out of responsibility to the role in the department or in the role of being a faculty member.

For some like Tyler he shared that he believes that mentoring is important for success, and he shared that even with diversity and recruiting faculty its important. Tyler said:

I don’t care what you do, you’re going to have to recruit. Now, after that, retaining is a different issue. That’s where the coaching comes in. That’s a whole new mindset that has to change.

Dana shared that she did get good mentoring from other faculty. She said:

So he was great because here is an assistant director he reassured me not to worry about that. He said focus on your packet and so I felt I had a lot of support here to be successful I had what I needed. I had a lot of mentoring I think in terms of you know offering me advice on what to worry about what not to worry kind of thing I think that’s really important.

Vanessa on the other hand was not mentored. As she shared:

I saw inequities where the extra resources that faculty members were getting that I wasn’t getting. How some faculty the older seasoned faculty would take other faculty up other their wings. Didn’t anybody take me under their wings. I didn’t say anything about it I just worked harder. Just say I’m going to achieve what you’re helping this person achieve I’m going to get it on my own.
It’s routine that mentoring helps faculty be successful but it is also routine that not everyone will get that kind of support. It is a routine for some faculty to receive mentoring and it is routine for others to be excluded from receiving mentoring needed. In the STEM environment at a PWI it is interesting the accounts the faculty participants. Each shared the value of mentoring.

Mentoring relationships surprise-and-sense making episodes.

Relationships needed to help junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al.2007, p. 516) and they are unanticipated or unexpected (Saldana, 2009). These mentoring relationships are developed in response to something that happened in the department that was not expected. The people that are engaged in them do so because they are responding to a surprise interaction that occurred or they are doing so to improve relationships that need to be enhanced in the department between colleagues.

Rebecca said that when it comes to diversity it can have negative effects on people because they do not fit in.

To me one of the ways I see diversity maybe negatively impacting someone’s career is not feeling like they fit in. Not feeling like they have that support network in the department or whatever it is. So I think trying to sort of build that confidence is a very important part of mentoring.

Rebecca makes sense of someone not being successful because they are a diversity hire is because they do not fit in. One could surmise that because of a STEM environment that is competitive and isolating (Xu, 2008) that one entering because of a diversity initiative that
the department is not open to this. Therefore the person coming in already is against something that will impact their experience. In addition, being at a PWI a faculty member that has a different ethnic background may have records that inform them that they do not fit in or will not be successful and perhaps mentoring will help break the expectation.

Vanessa shared why she engaged in mentoring and made sense of her participation based on her interpretation of what it means to be a faculty member.

So I definitely do that kind of stuff. I brought in on different grants or projects for sure. because nobody did that for me. Brought ‘em in on that kind of stuff. Sometimes they would talk to me about issues they were dealing with in their departments and I would say this is how I would handle it. You know the situation better than I do you know the people better than I do but have you thought about this? I think that’s a requirement. I think that you should not be in a faculty position unless you’re willing to do that for somebody else. Cause you know just because I didn’t have it should make more eager to do that for somebody else.

Vanessa made sense of her participation in mentoring because it is a part of being a faculty member. Simply, it comes with the job.

Dana shared an experience that she witnessed when someone was brought in as a diversity hire. She explained why mentoring is needed so that faculty will be told what makes them successful.

I did see a negative situation years ago. Our department I was a junior faculty then. Where the department was advised that we could hire someone if it was
in a diversity hire. That was the stipulation and the people that they interviewed the one person that they decided to hire was probably not the most qualified. And it wasn’t that they weren’t qualified for a faculty position. It’s just that the expectation here for tenure might have been a little outside of the scope what they did for their research and the type of research they did. So unfortunately there was a split in our department at that the time it was about was it right to bring that person in. if they weren’t mentored correctly so they could be successful? Right?

This quote shows when it comes to a diversity position that there are extra expectations on them for being more than just a faculty member. Brayboy (2003) talk about this and that sometimes people of color are brought in to work on more than just being a faculty member, but to fix the diversity problem. However, the department could also have a culture that is exclusive that should be addressed before the new hire arrives. The wrong kind of mentoring can lead to a person being unsuccessful just like the wrong environment can be non-supportive to a new hire.

Park shared that mentoring relationships should be based on helping people. He also asserted that race and other identities do influence how people connect in mentoring relationships.

I guess my work in diversity has led me to believe that mentoring does not have to be race based and in order to relate with me African American Hispanic gay lesbian students don’t necessarily need to see me as one. However having said that I also recognize that there may be many
underrepresented minority students who are without a mentor throughout school because they can’t find somebody they strongly identify with. So you know work in diversity indicates to me that mentoring students in you know a wide range of possible reactions that differ on an individual basis of students. Park understood that identity could be a factor in a mentee feeling comfortable with a mentor or vice versa. The nature of his mentoring is based on the individual needs and not based on his identities, outside of his identity as a faculty.

Mentoring relationships can also be based on another’s lived experience. Vanessa shared how her lived experience influences how she engages in mentoring.

My lenses and have definitely affected my perceptions and how I approach my work. My being first generation, coming from a limited resource family. Coming from a rural community. Being a female in the agriculture and extension world. Umm certainly my ethnicity being African American. I’m going to venture to say being a dark skinned African American of course because unless I’m smiling people are like are you upset what’s wrong. Nothing wrong do you go around smiling all the time. That kind of thing so I think all of those have played a role of shaping my perceptions of how I approach diversity work and has heightened my sensitivity to those audiences in particular which run the gamut those audiences in particular. I’m very very passionate about approaching work that tries to level the playing field for all of those audiences I just named. The first generation the female the ethnic minority the limited resource all of that I’m human so naturally my passions
are aligned with those things that have been a more salient in my life.

As Tierney & Rhoads (1994) suggests, faculty experience inform how they do things once they enter the academy. Vanessa shared that as an African American and a darker skinned African American and a first generation college student in her family affects her perception and this fuels her passion to help other students and faculty at a PWI.

Mentoring relationships risk-taking episodes and face-saving episodes.

Relationships needed to help junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al. 2007, p. 516) and these relationships are from conflict-laden exchanges (Saldana, 2009). These relationships get established because a faculty member is taking a chance on a junior faculty member that may require more guidance than usual. The junior faculty member may require more attention or help than the faculty member if accustomed to providing. These relationships can also be established for the mentor (tenured faculty) to save face or for the mentee (junior faculty) to save face.

Rebecca shared that she mentoring can help with retaining faculty.

I mean we have to hire a faculty member we have a slot we have to choose a faculty member then there is an obvious decision to me the harder is almost more umm how do I say let’s say for example you have umm younger faculty under-tenured faculty and maybe you have a concern I don’t think these people are getting appropriate mentoring, so they may leave so there is not a clear it’s not somebody is leaving “hey I’m going to leave the department” now we have to make a decision what to do or something I guess there is not
even a decision there right? But it’s more like I want this to be on the table because in the end I don’t want these people to leave.

This quote showed sense making and face-saving because she listens to others save face trying to find out what they need to know by asking her assistance. In a STEM environment that is very competitive other faculty need someone they can talk with. Vanessa obviously is this resource for someone. She also shared:

I definitely do that kind of stuff. I brought in on different grants or projects for sure. because nobody did that for me. Brought ‘em in on that kind of stuff. Sometimes they would talk to me about issues they were dealing with in their departments and I would say this is how I would handle it. You know the situation better than I do you know the people better than I do but have you thought about this? I think that’s a requirement. I think that you should not be in a faculty position unless you’re willing to do that for somebody else. Cause you know just because I didn’t have it should make more eager to do that for somebody else.

Vanessa’s experience of being excluded from needed experiences she welcomes others in opportunities to work with her. Later Vanessa shared her thoughts about how faculty of color are in a fishbowl and that they must play the game to make it.

You are in a fishbowl because you’re one of the only one in your whole department. So out of thirty something faculty you’re it so of course the spotlight is going to be on you. You can choose to bask in it and glow in it or not. You’re pre-tenure if that’s important to them to get there by nine you
need to get there by nine. Once you get tenure, but right now you play that to whatever if that’s the thing they are making a big thing out of you can do that. So it’s giving them advice like that and you can take it or not. It’s just giving them the advice to navigate this thing called T and P which is political very very political very.

Vanessa’s comments reflected working in STEM environments at a PWI. According to her statement a person’s race places them in a position to be overly observed by other faculty. The reason certain individuals stand out is because of the difference in identity contrasted with the other colleagues.

Mentoring relationships and rites of passage.

Relationships needed to help junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al.2007, p. 516) or what is done that significantly “alters or changes our personal sense of self or our social or professional status or identity (Saldana, 2009). These relationships are developed for the purpose for changing a person’s status. For example, a faculty member could be in a mentoring relationship for the purpose to keep the person from getting into any activities that could deter them from getting tenure or be a distraction. These interactions occur to change a faculty member’s status.

Vanessa addressed mentoring and how she helped others get their names out.

And I’ll be honest it has not only been extended to my faculty colleagues who are women of color throughout that lineage and pedigree it has also been to graduate students and really engaging them so they can get their names on
some papers with me. Umm not just as work horses but they are listed as second author on the publications. That I’ve taken with me to national conferences to speak now I’ve not taken an international because it was cost prohibitive but certainly national and they were able to have to their name on the conference proceedings and you know just that kind of thing to help them get their foot in the door.

The proper mentoring can contribute to a successful career. It also can help with a smoother transition because there are those that guide faculty on what path to take to enhance their careers. Vanessa also provided insight on how to continue persisting when helping someone. When you’re knocking on doors and doors aren’t opening you aren’t successful. So the lesson is to be persistent. Don’t give up.

Vanessa believed persistence is the key to moving forward regardless if someone is helping you or not. Her comments showed that mentoring is needed to be successful, but also a will to want to succeed is also needed. Tyler shared how he mentors people and that he works to meet their needs.

So I’ll be biased in that way towards giving them a little extra things to deal with unfortunate circumstances that they have to deal with. Other than that, I’m very objective. I don’t treat certain people more than others. Well, I don’t think. I try not. I get on everybody’s case equally so I’m an equal tyrant. As far as giving pep talks it depends on the situation, it depends on what kind of pep talk I’m going to give. If it’s a mentee that needs extra additional advice because they’re getting ready for academic positions or want or an interest in
that – because it’s all a different, I’ll give them a different mentoring style than I may give some other ones who are going into the professional world. He recognized that others may need some help more than others but he worked to meet the need and be very objective in his mentoring. He guides his mentees by letting them know how to navigate academia. He shared:

you just know how to navigate because that’s how you’ve done it; but rest assured you’ve probably been in a scenario where somebody has been, you know, biased against you, but you need to figure out how to navigate it or don’t let it bother you. You just march on through.

Tyler understood that there is a diversity of experience but success has to be internally desired as well. He does not let his mentees slack is appears, but he provides information that is helpful for their advancement. In STEM environments what he is doing counters the isolating and competitive perception of it but still helps faculty remain competitive.

**Summary**

This chapter provided the reader with a description of each participant by sharing some of their personal history and their position within their faculty roles. All of the participants are tenured Science, Technology, Engineering, and Math (STEM) faculty members. Having tenure means that these faculty understand institutional values and role expectations, particularly as they relate to the promotion and tenure process (Johnson, 2001). Once faculty earn tenure they have freedom to do other activities in their department without fear of challenges to employment and they have decision making power. Lastly, tenured faculty members have influence and set the tone of academic environments (Baldwin &
To examine the participants understanding of how they engage in diversity this study was done at a research university in the southeast in their work environments that is a predominantly white institution (PWI). These factors impact how faculty experienced their careers in their work environments. For faculty of color being at a research university that is a PWI affected their experience for them to maybe need support in order to navigate the system and be successful. For others understanding the culture of STEM affected their experience. The same factors influence how faculty participants engaged diversity. Therefore, each participant has their own understanding of diversity and each participant had their salient identity that informs how they engage in diversity.

The four dimensions of the theoretical framework faculty vitality were explored to explain faculty engagement and they were: intellectual exchange and collaboration with colleagues, decision-making processes, social activity, and mentoring relationships. These dimensions were aligned with Saldana’s verbal exchange coding to explore the personal meaning of key moments by examining the practices or the “cultural performances of everyday life” (Saldana, 2009). The five categories are as follows: Routines and rituals, surprise-four and-sense making episodes, risk taking episodes and face-saving episodes, crises, and rites of passage. These codes were coupled to and each code will be explored and cross referenced with other theories to add further insight to what the participants shared about their experiences. Saldana’s verbal exchange coding was used to help with developing meaning from what each participant shared. Verbal Exchange Coding’s categorization and analysis explores the personal meaning of key moments by examining the practices or the
“cultural performances of everyday life” (Saldana, 2009, p.114). However, social activities were not significant in this study. Participants did not address social activities as elaborate as the other dimensions of faculty vitality. Also, crises in Saldana’s coding schemata was not significant to this study. The participants did not address crises the way that Saldana defined this code. Thus, the dimensions/sub codes were as follows: Intellectual Exchange and Collaborations/routines and rituals

Intellectual Exchange and Collaborations/surprise and sense making episode

Intellectual Exchange and Collaborations/Risk-taking Episodes and Face-Saving Episodes

Intellectual exchange and Collaboration/Rites of Passage

Decision Making Process and Routines and rituals

Decision Making Process and Surprise-and-sense making episodes

Decision Making Process and Risk-taking Episodes and Face-Saving Episodes

Decision Making Process and Rites of Passage

Social activities and routines and rituals

Social activities and surprise-and-sense making episodes

Social activities and risk-taking episodes and face-save episodes

Social activities and rites of passage

Mentoring relationships and Routines and rituals

Mentoring relationships Surprise-and-sense making episodes

Mentoring relationships Risk-taking Episodes and Face-Saving Episodes

Mentoring relationships and Rites of Passage

Out of the 12 participants there were some that were in every code. What is clear is
that every participant has their perception of diversity and also their role in working in diversity. The comprehensive breakdown of codes in Chapter 4 is intended to provide context for the findings that will be presented in Chapter 5.
CHAPTER FIVE

ANALYSIS AND DISCUSSION

This chapter presents a discussion of the integration of participant findings, the interpretations of the researcher and the relevant literature. The study findings suggest that participants’ lived experiences influenced how they understand their role as a faculty member engaging in diversity in a STEM environment at a PWI. Each participant had a unique primary salient lens through which they framed diversity. For example, some faculty conceptualized diversity from a primary lens of race/ethnicity while others perceived diversity primarily through gender or sexual orientation. The lens of faculty influenced their perception of how they engage in diversity in their workplace and this is important to understand in this study because it shows that faculty engagement is tied to their understanding and their values. For instance, if a person understands race to be a factor in their lived experience then it informed how they engage in diversity with a focus on race. If a person values race in their unique lens then that person is drawn to areas where they can work around and impact issues related to race. For example, if a faculty member engages in diversity by addressing issues of race, it can be said that race is the focal point of how they value diversity. Therefore, this chapter will show how faculty participants understood their engagement in diversity as it is seen through the lenses of their individual identities.

The theoretical framework of faculty vitality identifies faculty engaged in four dimensions. Huston’s dimensions in addition with Saldana’s coding provided better methods for exploring participants’ personal meaning of key moments by examining the practices or the “cultural performances of everyday life” (Saldana, 2009).
Figure 3. Model of Huston’s Faculty Vitality and Saldana’s Coding

Figure 3 illustrates Huston’s framework *intellectual exchange & collaboration, decision making processes, social activities, and mentoring relationships* (Huston, et al., 2007) combined with Saldana’s verbal exchange coding (Saldana, 2009). Combining each dimension of Huston’s framework with each code of Saldana’s (*routines and rituals, surprise and sense making episodes, risk-taking episodes or face-saving episodes, crises, and rites of passage*) helped in understanding each participants’ experience with engaging diversity. To
get more information on how they work together refer to Chapter Four. In the following section, there is a discussion of the major findings in the study organized by Huston’s dimensions by taking an in depth look into the coding used for this study and compared the multiple thematic ways they relate to other bodies of literature.

**Intellectual Exchange and Collaboration**

Engagement in intellectual exchange and collaboration is the healthy sharing of ideas among colleagues (Huston, et. al, 2007). Healthy sharing indicated that faculty ideas resulted in relationships developing from collaborating. Establishing collaborations and accessing resources, balancing work roles, and understanding the unwritten rules of academe helped faculty be productive and thus created more collegial relationships (Bland, et al.2009; Russell, 2010). Participants in this study shared how they engaged in intellectual exchange and collaboration in matters of diversity at this PWI.

**Literature that contributes to more depth in Intellectual Exchange and Collaboration**

One body of literature to explore that relates to intellectual exchange and collaboration is the literature of faculty socialization. Tierney and Rhoads (1994) suggest that faculty expectations are determined by what they have experienced and learned. According to Tierney and Rhoads (1994) faculty socialization is the process where a professor enters an institution and becomes accustomed to the organization’s norms. It happens in two stages: Anticipatory Socialization and Organizational Socialization. “Anticipatory Socialization is when a person takes on the attitudes, actions, and values of the group to which they aspire” (Tierney and Rhoads, 1994, p. 23) while organizational socialization begins after the faculty member enters the organization.
Faculty of color that are brought into an organization as faculty have an unspoken expectation to address the diversity related issues for their organization. This means that faculty of color have different expectations because the criteria for their success is attributed to a dual roles as a faculty member and an ambassador for diversity. Thus, while a faculty of color is working to improve diversity, their efforts can be futile because the culture of the department or institution does not change. Brayboy (2003) writes that at predominately White institutions of higher education faculty (scholars) of color are disproportionately called upon to assist with implementation of diversity (p. 72). Faculty of color are not just charged with faculty work, but also charged to work on diversity issues in the department. In academe, diversity is highly focused on students (undergraduate/graduate) (Brayboy, 2003). It can be perceived that it is challenging for faculty to focus on too many initiatives at one time and still be successful at their research. Brayboy (2003) also suggests the way diversity is viewed is that it can be implemented without necessarily changing the underlying structure of the institution and its day to day operations. On the other hand, Brayboy’s work does not take into account the perception of the faculty of color coming into the work environment. Perhaps there are times when faculty of color not were expected to work on diversity issues yet willingly see themselves as ambassadors to improve diversity.

With both bodies of literature that were presented with intellectual exchange and collaboration, the areas that were not addressed were faculty identities and their perception and how these impact expectations entering the academy. Tierney and Rhoads (1994) present experiences informing expectations of faculty in faculty socialization, but they did not include identities like race and gender in their assessment of faculty expectations. In this
study the data show that faculty of color and women faculty perceive their engagement based on their experiences and what they think is important for them to focus on as faculty members. In the following section the major findings from the data and stream an analysis of the bodies of literature that help bring out more depth to what the participants shared is presented.

The findings for *intellectual exchange and collaboration* were as follows:

- participants of color, women and others with historically marginalized identities framed intellectual exchange and collaboration through their individual lens of race, ethnicity and gender;
- faculty of color try to mentor other faculty of color and women faculty when engaged in matters of diversity;
- participants that identified as a person of color would either overlook some mistreatment to do their job or they made sure their diversity work was inclusive of others because they see their positions as opportunistic in helping other faculty or students to progress in their careers;
- professional background and position influenced how participants framed intellectual exchange and collaboration by either seeing it as something they engaged in it to help individuals selectively or collectively with regard to personal identities or they framed it ways that would enhance their academic departments;
- and faculty that engaged in diversity before tenure will continue engaging in diversity after they earn tenure; however, before earning tenure faculty are
very careful how visibly they share their engagement in their department among colleagues.

**Participants of color, women, and others with historically marginalized identities viewed intellectual exchange and collaboration through their personal identities**

Participants of color, women, and others with historically marginalized identities viewed intellectual exchange and collaboration through their personal identities of race, ethnicity, gender, and sexual orientation. When combining Saldana’s *routines and rituals* sub code to *intellectual exchange and collaboration*, the data showed some commonalities of what was expected by faculty’s engagement through their identities. Reflecting on Tierney and Rhoads (1994) theory that faculty expectations are based on what they experience, in this study, what faculty expected was aligned to their lived experience and their lived experience could have been from their academic experience or their lived experiences. Vanessa shared:

> And it could be me it could be something about me. But I’m not I’m just saying the literature says that’s not uncommon for women and minorities to be excluded from those types of formal and informal mentoring types of situations. It’s not uncommon for us to be kind of sink or swim out there on our own. And I certainly experienced that and I don’t want others to experience that.

Based on Vanessa’s comments, the way her experience went was a combination of the academic culture and a response to her race and identity at this PWI. Her comments about sinking or swimming referred to the fact that what she expected was not to be supported by her colleagues or allowed to fail on her own merit. Here, Vanessa ties her experience in
mentoring to her race and her gender. The segment of her comment “it could be me it could be something about me” says that she attributes some of what she experienced to her identity. Like Vanessa, Deanna shared comments about how her gender identity affecting her exchanges with colleagues.

So I share that kind of thing and I talk to folks about it for me it’s a subtle diversity issue if you’re addressing me as Ms. or Mrs. and you’re addressing my male colleague as Dr., then you’re making a decision about my educational background I think based upon my gender.

Deanna’s comment supports that gender issues are germane in the academy regardless of an individual’s academic achievements. A woman may experience in intellectual exchange and collaboration with colleagues reactions to their gender more than their academic achievement. Deanna shared that this assumption of her academic achievement is prevalent, but she did not vilify the person that addressed her as Ms. And this is evidenced by Tierney and Rhoads (1994) who suggest that people’s experiences are connected to their expectations. Even though Deanna was misrepresented in how she was addressed, she understands that people do it based on their own experiences.

Sean’s identity as a gay leaning bi-sexual male influences how he engaged intellectually with his colleagues. He shared about his activity in the establishment of the GLBT center as his institution. His comments were:

I did write the proposal for the GLBT center and first went over and made appointments with the chancellor and the provost and the vice chancellor for student affairs, all of whom were people I knew as friends, but none of whom
knew me as a gay person.

Sharing his activity for the GLBT Center showed his dedication to this cause, but his perception of how his friends saw him added to the complexity of his relationships. As Sean said, his colleagues were “friends, but none of whom knew me as a gay person” shows that this part of his identity was not salient to them, but very important to him. He understood that revealing his involvement in this center would influence their perception of him. While his race may not cause records to play at this PWI, his sexuality could impact his relationships with his colleagues. For each participant salient parts of their identity informed how they engaged intellectually and collaborated with their colleagues.

**Faculty of color and women faculty that engage in diversity do it to help others**

A finding in this study was that people of color and women faculty that engaged in diversity-related issues had a desire to help other faculty and students advance in their career and to make experiences better for others that were part of marginalized identity groups at a PWI. Vanessa shared her perspective on how women and minorities are left out of formal meetings that contribute to their development.

> it’s not uncommon for us to be kind of sink or swim out there on our own.

> And I certainly experienced that and I don’t want others to experience that.

While Vanessa shared her willingness to help others, it is of note to mention that Brayboy (2003) suggests “that faculty of color were required to implement diversity through hidden service agendas and curricula (p. 75).” The data also indicated that women had the same hidden requirement when engaging in diversity initiatives. For instance, Deanna shared:
So the reason I entered this position was to work on diversity issues. And this position has so much more that’s so wonderful I feel like a kid in the candy shop when I think about the things I get to do. But for me to think about how to diversify the STEM pipeline including the faculty ranks and make this place a real welcoming community has been a real driver.

For Deanna, her job is connected to a broader purpose than her just having a job. She sees her job as an opportunity to make opportunities for women and other groups to diversify STEM. Interestingly, women in particular, are very aware of the status of women in their fields. For example, Monica shared:

I think for women it’s harder with age I think. Yeah age is very hard its very limiting…I have for me I think you know. I think we get to less power with age. You know. It’s very sad but it is. That’s how I’ve always thought about it. Or something like that. But it is I think it’s very strange. Things decrease a little bit.

Monica reflects on the experience of women in STEM and the challenges that they have based on their age and their gender. Conversely at this point, Rebecca shared that she works with women in her department by advising a student group.

I’m the faculty advisor, but it’s really more a matter of just encouraging them to do. They know what they need to do and it’s amazing. So they I mean they upper levels they do things like I don’t even want to say it. Well, like, I think what’s really impressive to me is they’ve identified what the problems is right problems is problems are right and they’re trying to do things like
they’re trying to have resume workshops for students who are trying to get internships for the summer and make sure everyone knows what you should do and try to increase the number that successfully get internships.

Rebecca comments illustrate the fact that women are taking the responsibility to work with other women. When Brayboy (2003) described diversity like a library policy, he suggested that changes are implemented without changing the philosophy of the library’s staff which also means the library serves the people it is always been serving (p. 73). In regards to gender, women are the ones working with other women, where there aren’t any men working with women to improve the experiences for women in these cases. This point of women working on women issues related to women is being emphasized because with all of this work being done by women, there is still low representation of women in STEM (Xu, 2008). Xu (2008) suggests that there are gender disparities between women getting doctorates and women that are in academia. Further, the STEM environment is perceived as being both isolating and competitive, which is not collegial (Xu, 2008). While it can be isolating a mitigating factor that is supported in STEM fields is that faculty are encouraged to publish with other STEM faculty and students. The deficit model as presented by Xu (2008) highlights other challenges to women in STEM, like caring for families and women’s tendencies to be nurturing in an environment that is competitive. There is a paucity of literature that proposes and supports opposite of the deficit model that women experience challenges in STEM because of the culture and historical factors.

**Some participants overlook mistreatment**

Another finding in *intellectual exchange and collaboration* and including Saldana’s
“Surprise and Sense Making Episodes” sub code was that participants that identified as a person of color would either overlook any mistreatment in order to do their job or to make sure they were that they were inclusive of others regardless of identity despite the fact that race is still an issue at this university which is a PWI. For instance, Tyler shared:

unless it was blatant which I have to say I’ve never had anything blatant.

Now, my wife will tell me, “Well you didn’t recognize what was blatant, just never let it bother you and you just went about your business.” Now, that can be true.

So, he acknowledged that he intentionally overlooks mistreatment so that he can do his job. Tyler also shared that he did not recognize anything blatant occurring. He is saying that he makes a conscious decision to overlook mistreatment. Another issue of mistreatment can be the idea of salary inequity.

Yolanda talked about issues of salary and that her salary is lower than others. She said:

But it’s funny I’m really passionate about patient care and quality of care in the hospital, but when it comes to fighting for me I’m like you (whispers) I do what I say. I wish I could have fought for more money I guess that’s something I could have done better. I feel like I’ve been a dutiful faculty member I’ve done everything I’ve been told to do… so I don’t know.

Yolanda recognized that there may be some inequity in pay, but she decides not to fight for herself. In addition, Yolanda expected fair treatment in her department because she said that has been a dutiful faculty member. Taking into account Tierney and Rhoads (1994) work on
faculty expectations, Yolanda expected equal treatment as a response to her loyalty and work in her department. Just like Yolanda, Vanessa may perceive herself as a dutiful faculty member, but her experience informed her that she may not get equal treatment. Thus her engagement is more strategic with her interactions with other faculty members. Vanessa shared:

You know it may or may not help that work at least I’ll be able to put a name with a face. So try to be strategic to. Is it going to advance what I’m doing. Is it going to put me in a place to be around and engage with people that can help.

Vanessa acknowledged that her engagement with diversity related issues is done strategically to enhance her career and she works with those that can help push the diversity agenda forward. Classifying her work with others as strategic, which means she calculates who she collaborates with and how she collaborates. These responses demonstrate that at a PWI participants will work with others to advance their work or help others advance which shows that participants think of themselves as being part of a group instead of standing alone as an individual.

Some participants recognized when misperceptions were being vocalized or mistreatment happened by their colleagues but they did not address it because of their discomfort or they did not want to cause any friction in their department or program. If a white participant overlooked something, it was not done out of concern of their career advancement, but it seems that they were not engaged with the process which means that they did not consider any consequences with their actions. People of color, in comparison, if
they witnessed something negative occurring with regard to diversity, they did not address it so it would not affect their experience in their department. For instance, Dana shared:

I think you know it’s interesting sometimes I heard someone say it that diversity that they thought they needed tutors for some of the African American that were in my class. And I said you know I didn’t say this then but I should have said it and I don’t think it’s just the African Americans that might need tutoring was kind of my thing.

So while Dana did not support that needing a tutor was related to a student’s ethnicity, the fact that she did address her colleague’s comment may have had an effect on a student of color’s experience with this colleague. Just like Dana let this comment slip by Sean talks about people letting things slip by:

I think we would all have to admit that we let too much slip by when we see it and we’re just unsure as to how to deal with it. Often, we think about what we might have done too late, you know, the incident is passed. The people have changed; we’re no longer even at the scene perhaps when we think of it.

In his comment he shared that faculty as a collective allow things to go unaddressed, but he also suggested that when faculty want to do something it may be too late. There are faculty who let things pass and do not address it. The responses of Dana and Sean are examples of how faculty allow issues of diversity to go unaddressed. Fenelon (2003) addresses ideologies that rationalize and justify systems of social stratification especially in higher education the mainstream ideologies are those of meritocracy and foundational freedoms (p. 88). Most academics follow historical scholarship in either denying or downplaying systems of racial
exploitation and oppression (p. 88). In Dana’s and Sean’s comments, diversity issues went unaddressed that could impact others’ lived experiences in academe. Faculty can also let things slip by that affects them personally.

Yolanda shared how her colleagues treated her made her feel “stupid,” notice however how she prefaced her comments with “it’s a silly little thing.” She said:

This is kind of a petty silly little thing. English was not my first language I’m fluent in Spanish and sometimes I’ll mispronounce a word I know you think I mean and sometimes my friends who are colleagues will make fun of me. Laugh but you know in a funny way they are being funny I know they are being funny. But sometimes it makes me feel stupid. You know like I don’t think they have mal intent they are just being funny but when it happens more than a couple of times then I’m like they’ll say English wasn’t her first language which is true.

Yolanda’s co-worker’s mistreating her is in response to her ethnicity and that she has an accent. Her colleagues show insensitivity by joking about her accent but she downplays what they are doing. These denying ideologies allow dominant groups to avoid meaningful discussion of racism and allow a gentler interpretation of historical systems (Fenelon, 2003) which means silence can be considered compliance. To say nothing is to say something and remaining says that there is nothing wrong with what people have said or done. Looking at the participants’ responses they made a decision to not comment on the mistreatment. What is interesting here, is that regardless of why faculty let things go unaddressed, it does not
contribute to diversity moving forward because it still negatively affects people by keeping inertia in place.

**Professional background and position influenced how participants framed intellectual exchange and collaboration**

Another finding is that white male faculty framed intellectual exchange through the lens of their professional background or position which allowed them to focus on relationship development with students and improving the reputation of their department or program. Tierney and Rhoads (1994) suggested that socialization guides what faculty did in the workplace. Therefore, what faculty engaged in is a reflection of their socialization. Simply white males do what they have seen other white males do. Brayboy (2003) posits that white faculty, remain unmarked, and continue to operate under the expectation that they can be faculty members. White faculty members, unlike faculty of color, are able to focus on their jobs and the criteria to be successful with no hidden requirements. David shared:

> so the reputation and how a program is received and whether it is perceived as a welcoming place, is really really important. So it’s not just about what you do on paper, it’s much more about building relationships.

As a department head and a white male he addressed engaging in matters of diversity as a way to enhance his department. This is not to suggest that David intentionally overlooks experiences of marginalized groups, but the lens he used stemmed from his professional position and his personal identity as a white male which shows that he is looking at matters of diversity through a lens of personal privilege. His understanding of how he engaged in
diversity is not addressing ways of leveraging his privilege to address issues of diversity at a PWI. There is privilege with white skin and being a white male, so there is possibly more that could be done regarding diversity from his position. Brayboy (2003) suggests that a reason diversity progress gets stifled is because faculty of color are the ones that are charged to work on it and that universities need to have a wholehearted commitment to diversity (p. 74). This stifling of diversity progress can be attributed to having ALL faculty working on diversity related activities in a STEM environment at this PWI. Sean shared:

But I decided early on that – and really particularly during the period when I was directing our undergrad and then grad programs – that I needed to do more than we had done before to recruit and retain and try to guarantee the success as best we could of students of color.

This is not to say that white male faculty intentionally overlooked their privilege to work on diversity issues before they get into leadership positions, but this is to say that white male faculty had the privilege of engaging in diversity without worry of their career advancement. The privilege of being a white male faculty means that work can be done by white males and they will not face the same consequences that their colleagues of color face challenges to their academic success.

Faculty that engage in diversity before tenure will continue engagement after earning tenure

The final finding in intellectual exchange and collaboration is faculty that engage in diversity related issues before tenure will continue after earning tenure. Brayboy (2003) suggests that individuals may argue that faculty of color have a choice in how they spend
their time and resources, but that faculty of color are locked who are positioned as special hires always working on diversity. From this it can be surmised that faculty of color are not only expected to address matters of diversity by colleagues but they have an internal scripts informing them to take responsibility for diversity. It can be suggested that faculty of color at a PWI work on diversity issues before and after earning tenure. The participants did not share that they waited to get involved but that they found ways of being engaged in diversity before becoming tenured. Interestingly, participants shared different ways they engaged in diversity related initiatives. Deanna said:

So if you look at what I done with women in (exclude discipline) I was pretty much under the radar screen until I was tenured. so faculty activity reports I never reported that kind of stuff until I was tenured. At that point I would put on faculty activity reports I was constantly giving talks about females being a (exclude expertise) that’s when I started letting people know. But tenure has a huge advantage for me.

Deanna shared her experience before getting tenure and that she never reported her activity because she was being watched closely in her department. Marcus shared in his comments about earning tenure,

Most people are not like that, they kind of get fat and lazy after they get tenure so in terms of diversity issues unless you’re really a proponent for it or you’re really advocating for it or if it’s really about you, I mean, it’s harder to convince folks who don’t have that desire ethic to change their mind. And that’s like the, in my experience, the other side of it. So it’s been good in
terms of influence but it can, like, harden people who really don’t agree and there really isn’t a way to negotiate different ways of handling stuff.

Marcus shared that unless faculty cared about diversity they will not engage matters of diversity after earning tenure. Conversely, all participants shared that they engaged in diversity related issues more after earning tenure which indicates they cared about diversity prior to achieving tenure. These comments further evidenced that faculty from marginalized groups engage in diversity at a PWI because of an internal script guiding their decisions, but they have to be careful how they engage in order to be successful. The next section will explore the dimension of decision making processes.

**Decision Making Process**

Decision making process is defined as times when faculty participated in activities that impacted their work environment and also impacted others (Huston, et al.2007). In this dimension a faculty member is engaged with other faculty members to make decisions that impact others in the work environment. The kinds of decision making processes that faculty engage in include hiring committees, graduate school admission committees, and promotion and tenure committees, all of which impact other faculty and students careers. The findings showed that in decision making processes faculty members struggled with the duality of proving their individual worth or earned tenure to their colleagues while simultaneously intentionally advocating or fighting for other colleagues and students. Here again, the data showed that faculty have this internal process occurring that informs faculty to fight for self and fight for others. The dynamic of fighting for self or others is situational. For instance, if a faculty member fights for a student who is being mistreated they also figure out how to
protect themselves by maintaining their status or position in their environment while fighting for the student. Regardless of which dynamic becomes primary (fighting for self or other) both of the dynamics are active and present in decision making processes.

Participants in this study saw their STEM work environments at this PWI as challenging and that progress would not occur without their involvement in diversity initiatives because they viewed themselves in opposition with their colleagues and also in opposition with the culture of their department. The opposition is not an active disengagement from their colleagues, but rather it is a philosophical difference on diversity between them and their colleagues. Each participant framed their engagement in decision making processes as their responsibility of serving others. The data showed that faculty speak up for those with shared identities or they try to help those that may be marginalized or in disadvantaged positions; they take it upon themselves to engage in the decision making process.

**Literature that contributes to more depth in Decision Making Processes**

Two bodies of literature explored with this dimension of faculty vitality are: academic responsibility and ethicality. Academic responsibility according to Dobson (1997) is when one examines the political correctness in a university context and it leads to a review of academic freedom which can be very evident in a STEM environment at a predominately White institution. Another theory that supports Dobson is Brown’s (2004) social dominance theory. Brown’s (2004) social dominance theory explains group differential treatment in terms of social hierarchy based on identity. Conversely, academic freedom does not account for how faculty’s identities inform how they exercise their academic freedom and how they
view themselves among colleagues. In this study, the data showed that faculty’s influence affects how faculty members exercise their privilege by being tenured (academic freedom). With regard to faculty participants, some of them desired to be viewed like everyone else in their department or in other words as a team player. Thus, their engagement in matters of diversity stemmed from their ethical understanding and they understood it to be their academic responsibility. However, their engagement was not made visible to other faculty until after they earned tenure.

The socialization literature lends itself to understanding how faculty engage in decision making processes, because faculty learn their roles from other faculty; and according to Tierney & Rhoads (1994), socialization learning starts in graduate school. It can be suggested that participants’ engagement in diversity was influenced by them learning how to engage from a faculty mentor when they were a graduate student. Academic freedom through tenure is one of the major privileges of the modern university. The freedom that faculty have, informs how they engage with one another and with students at a research university. These interactions between faculty members may or may not be collegial, but there are no official mandates to ensure collegiality occurs among faculty. Historically, to protect faculty among other faculty efforts that are morally sensitive have been done to constrain how faculty members speak to one another (Dobson, 1997). These efforts have also been deemed to be dangerous, because any efforts potentially could undermine academic freedom (Dobson, 1997). Challenging academic freedom can challenge the fabric of how institutions operate to benefit faculty.

Ethicality is a function of a well-developed identity that results from a conscious and
deliberate commitment to one’s role expectations (Reybold, 2008). Ethics are principles or standards related to moral conduct and ethicality is how one conforms to those principles and standards. Reybold (2008) also suggest that “early career faculty members, having little training and even less experience in dealing professional dilemmas. Thus, faculty are left to rely on personal standards of integrity when faced with professional dilemmas” (p. 280). In this study, the data showed that faculty engaging in decision making for diversity, engaged in diversity because of their personal ethical code. Ethicality literature does not account for how faculty’s ethics change over time and in this study, faculty member’s involvement in matters of diversity changed over their career. Reasoning has long been known to be situated in local contexts and influenced by cultural markers such as gender and ethnicity (Reybold, 2008).

Reasoning informs faculty internal ethical script on how to engage in diversity related issues. According to Bruhn (et al., 2002) faculty contracts do not address professionalism in the academy. When faculty members respond ethically, it is more a process of making that choice and both are social and political. As cultural workers in the academy, all faculty members are subject to the politics of education (Reybold, 2008). Thus, faculty in this study in STEM environments at a PWI had to be aware of their work environments socially and politically. As mentioned earlier, the findings in this dimension show that faculty engaged as a result of an internal process. Faculty who view their engagement in decision making processes as a personal responsibility to address inequities in decision making are battling a bigger system that may justify inequities through academic freedom.

The findings that are explored in this dimension are as follows:

- participants engaged in diversity more openly in their academic
environments after earning tenure;
- participants viewed their engagement in diversity as a risk because the
culture of their workplace environment did not value diversity like they did;
- women experience tension from gender even after earning tenure;
- participants recognized they had to push against colleagues to engage and
promote diversity;
- participants viewed engagement in decision making processes as advocating
for others.

**Participants engaged in diversity more openly after earning tenure**

One finding in decision making processes in combination with Saldana’s *sense
making episode* is that the participants shared that they engaged in diversity related initiatives
more openly and visibly after earning tenure. Referring back to Chapter Two, junior faculty,
are defined as faculty just entering academia (Tuitt, 2010) give their best impressions to their
faculty colleagues so that they can earn tenure. Faculty shared when they were junior faculty
they did not want to challenge the system to appear like they were just like their colleagues.
Park said:

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Particularly when I was non-tenured faculty or before I got tenured I felt like I
wanted to be very careful about people’s impressions of me. I wanted to be
viewed by others as being an acceptable candidate for tenure.
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Park shared that he wanted to be viewed as a colleague who was deemed worthy of tenure.
Just like Park wanted to be viewed by his colleagues like everyone else, Vanessa wanted the
same, but she did not cause trouble in her department to give that impression. Vanessa said:
Earlier in my career it didn’t really come up and I think that’s a product of my job and my role now that I’m much more forward about it. Honestly when I was a faculty member in the department going up through the faculty ranks, I tried not to cause any trouble because these people got vote on you. And I didn’t even hardly speak up for myself much less for anybody else, much less be an ally for anybody else. I just worked and just felt like my work will speak for me. And I saw inequities where the extra resources that faculty members were getting that I wasn’t getting.

Vanessa shared that her early career was focused not on challenging the structure of the climate in her department and not by not advocating for others, but her work spoke for her. She also shared that even when she witnessed inequities that impacted her that she remained silent. This is another example of how faculty learned how to govern themselves in the STEM academic environments at this PWI. Both Park and Vanessa shared that their focus on diversity changed over the course of their careers.

David, who is also a department head, talked about his involvement in diversity changing over his career.

I think over the course of my career it’s I’ve realized and some of it as you get older and you have more authority you have tenure you’re a department head you can speak up, is sort of the need to be intentional about it so.

David shared that now that he is a senior faculty member, he can be more intentional in speaking up for diversity. The data suggest that his engagement in diversity related initiatives is fueled from his ethicality because he processes his involvement through his career
advancement not by the influence of another colleague. His comment reflected that diversity is not an easy topic to address in STEM. Thus, having academic freedom makes it easier for faculty to engage in diversity related initiatives.

**Participants viewed their engagement in diversity as a risk**

Another finding in decision making processes is that faculty saw their engagement in diversity as a risk taking episode. The data showed that regardless of ethnicity or gender faculty always negotiated their position and their collegiality when engaging in diversity related initiatives. By negotiating, faculty could not just do their job because there is a duality internally they constantly battle with at a research institution. The duality is faculty answering these questions, do I support my colleagues, do I support the department or do I support the student in this matter of diversity? The answer determined how faculty address matters of diversity. For instance, Monica shared an experience when she was on a graduate committee and her colleagues were trying to get her to encourage An African American woman who was the valedictorian of the class to stay there for graduate school. The problem was, until the student showed that she could handle the academic rigor, no one encouraged her to apply for graduate school. The story that Monica recounts below suggests in Monica’s discipline and in her department there is a culture race can inform faculty’s expectations of colleagues and students. Monica shared:

> We had a valedictorian that happened to be a Black female. It was when I was director of graduate programs. Someone approached me. We forgot about this and try to see if she still stays here. I said no she is not going to stay here nobody ever talked to her. They said you should talk to her. One of my
colleagues said I don’t think it’s worth it to stay here but if she is valedictorian she is worth it.

As a result, Monica encouraged the student to apply elsewhere. This story illustrates the duality that Monica faces trying to be supportive of her department or look out for the student. The story suggests Monica’s ethicality informed her to identify with the student and not the department because the student had to prove herself to be deemed worthy of the graduate program by faculty. Marcus defined his role in decision making and risk-taking as advocating for others.

I think that, you know, I have noticed that particularly with my African-American students, particularly the male students, for some reason, you know, are, you know, they have such a full life outside of school, you know, just to make ends meet. That it starts to, you know, if something happens like they get sick or, you know, lose a job or, you know, something weird happens, it's like a very -- they got very shallow, like, cushion, you know. And so it becomes a situation where you got to sort of advocate in their interest, you know.

Marcus framed his engagement in matters of diversity through the lens of his race/ethnicity. Next, Marcus willingly advocates for students who may not be able to advocate for themselves at this PWI. This story illustrated how Marcus’s identity informs who he advocates because he identified the ethnicity of his students.

Sean shared that for him over time in his decision making and risk taking he’s changed how he introduces himself. Sean takes the risk in sharing his identity when he does
I am – I usually introduce myself first as gay, more accurately a very gay-leaning bisexual.

Sean’s comment suggested that being gay is not openly accepted in his environment and that it can be challenging to introduce one’s self with the gay identity. Some faculty shared their identity to advocate for others or by revealing identities to help others feel comfortable. Some faculty may struggle with whether or not they should address matters of diversity that occur because of personal identity or ignore it. Tyler’s comments below showed that he made a decision not to let race dominate his thinking when he noticed something diversity related occurring.

Well, I don’t jump to the race conclusions quickly. I probably [indecipherable] if all else fails and everything can’t be explained otherwise, then I have to conclude that that must be related to that. That’s always been my mantra. Life will say you should jump to it a lot faster because it’s pretty obvious, but I give benefit of the doubt first because when it jumps to that then I get angry, then I shouldn’t be involved. So I don’t want to get to that point where it involves that because it’s disappointing because I shouldn’t be a part of it. So that’s why I don’t bring it up because when it gets to that, then I’m disappointed and then we have to really talk about what the heck is going on here.

Even though Tyler is a senior faculty member, he still shared that he may get angry if a matter of diversity framed around race arises. His story suggests that even with academic
freedom, a person’s ethicality can override their sense of freedom and be the feeder to how they engage in decision making processes at a PWI.

**Women experience tension from gender differences even after earning tenure**

Another finding in decision making process is that after women become senior faculty member in the late career stage, they still have to prove their worthiness to colleagues. When looking at Saldana’s *routine and rituals* and *sense making episodes* subcodes, the data showed that participants framed what they experienced based on their work environment. For instance, Vanessa who is a senior faculty member and assistant dean shared,

> Being and like that you know and I have to keep reminding people that I’m a full professor because sometimes they come at you like how you know about that. What are you all in that for? Because I’ve been through it. Been there done that. Now my question was and I don’t know why I have to keep reminding people of that. And that’s why I do it because I have to. Some days they conveniently forget that.

Vanessa spends a lot of time justifying herself and her job to her colleagues in this STEM environment. Her story suggests that this repeat pattern of justification to colleagues is an effect of her colleagues’ response to her race/ethnicity and gender at this PWI. Dana, a senior faculty member who no longer actively brings in funding to her department, shared her perspective from sitting on faculty committees. She shared:

> if you’re funded, then you’re accepted into the club and you have opportunities to play for the funding. But if you’re not funded, it’s like you’re
leprosy. So it’s like you know it’s kind of an interesting dynamic and the sad thing to me is you have faculty on campus who aren’t active in their research program anymore. They’re not listened; to they’re basically made to feel like they are second class citizens, which is like the diversity issue.

Dana’s story shows that even though as a senior faculty member she has earned the rank of full professor; because her career status has shifted to where she no longer has to bring in funding her worth among colleagues is not highly valued. These two stories suggest that while academic freedom has been earned by these two senior faculty members, it does not guarantee they be treated fairly among their colleagues. Vanessa’s story suggests that when a faculty member is a person of color and a woman, she thinks about two dynamics being at a PWI and a research institution. As a white person, Dana thinks about her gender during her engagement at this institution. Regardless, dynamics influence their decision to engage in decision making processes.

**Participants recognized they had to push against colleagues to advocate for diversity**

One additional finding in decision making processes is that participants recognized that they had to push against their colleagues when working matters of diversity. Unfair expectations can occur when one faculty judges what another faculty is able to do by their own abilities. It is unfair because when one compares another person based on their experiences, they do not account for factors that another person has encountered. Conversely, when faculty have these kinds of internal dialogue about others it’s being done unintentionally, which means that faculty unintentionally compare colleagues to themselves as if they all had the same experience and path to get to a certain point professionally. This is
highly likely to happen by the majority populations at a research institution that is predominately White and mostly male. Many of the faculty in STEM environments are white males, thus contributing to the unfair comparisons some faculty encountered. In this study women faculty experienced unfair expectations. Rebecca shared:

> your perception of how diversity negatively effects people is based on what you went through… so, when you see somebody else who not you or you see what’s going on and you hear someone else’s perspective on what’s going on that can be very eye opening in terms of I didn’t get that feeling at all. So maybe you have a candidate not doing well in the tenure process and you have a view as to why and someone else has a view as to why and maybe you come at it by including diversity in your opinion and others don’t. So, I think those experiences are sort of enlightening and you say oh okay clearly not everybody is thinking about diversity and it may not even be on their radar at all and that didn’t even occur to you for example.

Rebecca’s comments highlighted that some faculty in decision making processes are not considering the diverse experiences of other faculty members. Her story suggests that the lack of consideration towards another faculty’s experience can result in a person being misjudged by their peers in a STEM environment. Interestingly, David acknowledged his experience and shared how it affected his mobility in the academy. He said:

> So, these advantages that people have built on each other and only I think when you have a chance to look back and you meet other people more different then you realize how exceptional having those advantages are. Then
you realize that I have this very privileged experience. So, if you put every tub on its own bottom everyone and everyone will rise to your level well you know it’s not necessarily true because I can’t really say how I would have done if I had not had these advantages. I can tell my story that I would have been fine if I grew up in poverty that I would have been okay but I don’t really know that. So, that’s the perspective or the big picture perspective.

Here, David illustrates that he understands that one cannot compare others to themselves when considering diversity. Everyone has their own experience and that experience informs what faculty members expect to happen and what faculty members do in certain situations (Tierney & Rhoads, 1994). He recognized that his experience prepared him for what he experienced and that others who do not have the same experience may not have the same success.

**Participants viewed engagement as advocating for others**

An additional finding is that faculty members framed decision making processes and diversity as an opportunity to advocate for other faculty and students at a research institution. Participants viewed their role in decision making as a responsibility or service to others. Ethicality informs this data finding because here engagement to advocate is a choice that faculty make based on personal identity. For instance, Rebecca shared:

> When you go through these hires some people are like “wow this person ten times better,” but so if we’re hiring minority candidate we’re hiring less than great or something right. But this was the case where we really were splitting hairs on you know it was perfect. So I think I was fairly vocal there so to me I
think I handled it. It wasn’t a great outcome because we ended up not being able to hire either one of them.

Rebecca shared how her colleagues unfairly assessed a potential colleague’s ability based on the position of the faculty being a diversity hire. Her response was to be vocal about their unfair judgment to the potential minority hire at a PWI. She spoke out about the unfair low expectations that her colleagues placed on minority faculty and intentionally vocalized her disagreement with her colleagues’ assessment. Rebecca’s actions are the opposite of what Brayboy (2003) suggests that only faculty of color address matters of diversity. Marcus explained how it was expected that he has to advocate for others. Marcus shared:

I think that, you know, I have noticed that particularly with my African-American students, particularly the male students, for some reason, you know, are, you know, they have such a full life outside of school, you know, just to make ends meet. That it starts to, you know, if something happens like they get sick or, you know, lose a job or, you know, something weird happens, it's like a very -- they got very shallow, like, cushion, you know. And so it becomes a situation where you got to sort of advocate in their interest, you know.

Marcus framed his advocacy as a response to his ethnicity as an African American male which increased his sensitivity to African American student struggles at a PWI. Also as an African American male, he that takes responsibility for African American students because he feels others faculty will not do it. Again, Marcus has an internal script that informs him
how to engage diversity and how to help his students.

Sean also shared that after he earned tenure that he took it upon himself to advocate for students. As a result of academic freedom, Sean waited until he had tenure to advocate for diversity.

At the graduate level though, you make decisions are director of graduate programs as who’s getting in and who isn’t and so I had a lot of ability there to make decisions. And then, of course, as a tenured faculty member, when I got to that point I began voting on tenure and promotion for other people. So, I could speak and vote, but I think speaking up is also part of it because it’s not just casting your own vote, but it’s trying to get other people to see things in an enlightened way and if they weren’t going to – my colleagues in fact are quite enlightened anyway; I don’t have much of an issue there, but I think people who care about diversity need to be prepared to push the envelope and not just hope everybody else seeing it the way you are.

Here, Sean shared his expectation that he will have to promote diversity among his colleagues because of his position. Sean’s expectation aligns with Reybold’s (2008) theory which suggests that with ethicality also faculty have an obligation to others. According to Reybold (2008) community members who “have the rights and responsibilities of other citizens”, thus balancing community and professional obligations (p.281). Vanessa shared a similar disposition to helping others, but it was based on her willingness to help. She shared:

So, I definitely have made myself available. The good thing is it’s not that many because you could just be because you know I can’t sit here and do that
all day. But the good thing is that here has not been that many coming up or coming through my area so I have been able to at any time if they needed me to review something I have been able to do it. Its only I can name them.

Vanessa shared her position as a helping faculty member since she has been successful. Both Sean and Vanessa exhibit how academic freedom worked for them to be able to freely advocate for diversity in decision making processes.

The data showed that one participant conceptualized decision making processes about matters of diversity as being inclusive about hiring ethnically diverse faculty at a PWI. For Tyler, an African American male he looks at the opportunity to hire diverse faculty as a responsibility of his department and as the focus of decision making processes with matters of diversity. He shared:

So… and then you’ve got to stop saying, “We’re satisfied with whatever number we get” is the other thing so there should be no goal in mind about, “Well, one out of six hires is good.” Why can’t we have six out of six? If we find six good, we’ll have six new. There should be no mindset that, “Oh, we did it. We were successful guys, we got one.” I would submit that we were still unsuccessful and success is about getting the maximum. You’re unsuccessful if you don’t. Now, yes, we may have to live with that, but don’t say you’re successful. [Chuckle] See, successful is you got a six out of six; okay, that’s successful because you had six and you found six. That’s really successful.

Tyler’s response suggests that his understanding of diversity related initiatives being done
successfully should result in the hiring of diverse faculty and Tyler does not seem to be flexible with his position on his department hiring diverse faculty. His inflexibility illustrated his passion for diversity, but also indicated his frustration for his department not achieving the goal. As an African American faculty member, he believed that faculty of diverse ethnic backgrounds were available for recruitment, but that his department was not working hard enough to accomplish having diversity in their department. This story is also another illustration of how an internal script informs faculty’s expectation. Tyler’s story shows that his experience as an ethnic minority and full professor informs his expectation that the hiring of other faculty is doable. The next section will explore is mentoring relationships.

**Mentoring Relationships**

Mentoring relationships help junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al.2007, p. 516). Effective mentoring can cut across different lines like culture, race, and gender (Johnson-Bailey, 2002). Cawyer, et al. (2002) suggested that mentoring is frequently recognized as a method for facilitating the growth of new faculty. All participants were proponents that mentoring was required for faculty to be successful. From their stories their narratives indicate that a faculty member’s journey began from graduate student and mentoring was a part of their journey but after they joined the academy as a faculty member, there was an unspoken expectation from each participant that they would be supported by their faculty colleagues. The expectation of getting support is another example of an internal script informing expectations that is not addressed in the socialization literature that talks about faculty entering academia. The mentoring literature assumes that mentoring will naturally
occur and that faculty will be successful, but it does not account for the opposite happening. Therefore, depending on the early career faculty’s experience upon entering the academy determined how the faculty responds to the nuances of their STEM environment. The two bodies of literature that will help with understanding this dimension are mentoring and faculty identity development.

**Literature that contributed to understanding mentoring relationships**

According to Sands (et al., 1991) mentoring has resonated loudly among minority group members and women that tend to be excluded from informal, interpersonal means of career development. Brown (2004) asserts that White faculty regardless of gender hold a more positive perception of the campus climate than faculty of color. This perception also evidences what Brayboy (2003) shares about faculty of color coming in with more expectations to do more as faculty by taking on the responsibility to fix the diversity problem. Furthermore, Brown’s assertion adds relevance that an internal script is in play in faculty upon entering and while faculty are in the academy.

Brown’s social identity theory adds relevance to how race or other identities inform faculty how to mentor other faculty because “the Social identity theory proposes that individuals exhibit preference toward their own group and as a consequence favor its members in the distribution of resources” (Brown, 2004, p. 27). The participant data may have shown that faculty that receive mentoring get it from those who have a shared identity and if they were not mentored there may not have been faculty that shared those identities at a PWI. In addition, participant data may have suggested that late career stage faculty in STEM may not see their roles as mentors to early career stage faculty.
Kram (1983) posits out that mentors were either sponsors or helpers. Depending on how the senior faculty framed their role (as a sponsor or helper) determines how they engage in the mentoring relationship. The mentoring relationship consists of senior faculty and junior faculty and the seasoned faculty is in position to help the newer faculty. Conversely, Sands (et al., 1991) posits that the mentee often puts themselves in an unequal and vulnerable position in relation to persons who may be making decisions about their tenure and promotion. Sands’ theory does not address whether the mentee knowingly puts himself or herself in this position and understands the potential ramifications of their dependency to senior faculty members.

According to the mentoring literature mentorship usually begins between a faculty member and a graduate student (Van Maanen, 1976; Austin 1990; Tierney & Rhoads, 1994). Thus, another unanswered question in mentorship literature is “how does a faculty member seek out others for mentoring relationship?” In this study the data did not show that any participants shared that they sought after mentorship. Another thought from this study is what affected junior faculty seeking or not seeking mentorship. Merriam (1983) asserted that more attention needed to be focused on the effect of gender differences because it does affect women faculty’s advancement since there is a lack of women in managerial or upper administrative positions who can be mentors to younger women faculty (Merriam, 1983). Gender could be a factor in junior faculty not seeking mentorship. Also, Stanley and Lincoln (2005) point out challenges between races in mentoring relationships to prevent isolation and retain diverse faculty. As the literature suggested, faculty were attracted to those that share their identities. Huston, (et al., 2007) did suggest that junior faculty rely heavily on
mentoring from senior colleagues. Further, mentoring relationships in academia are what make the intellectual exchange and collaboration occur in academic environments.

The other body of literature that informs mentoring is faculty identity development, because it addresses the dynamics in how faculty view themselves in their environments. The power differential between senior faculty and junior faculty adds complexity to the mentoring relationship because senior faculty member have decision making power that can determine whether junior faculty advance to tenure (Zellers, et al., 2008; Austin 2010). Further, the lack of diversity in leadership among faculty members, also affects mentoring because the expectation or interaction between the mentor and the mentee is based on the mentor’s experience and not inclusive of the mentee’s experience (Zellers, et al., 2008). Therefore, the mentoring relationship is leaning more one way because the mentor’s experience is considered and not the mentee.

The way that faculty are socialized, contributes to what they understand they will experience or should do as a faculty member (Tierney & Rhoads, 1994). This adds relevance to Austin’s (1990) work on faculty experiences because she suggests “that graduate students would be better served if they were made aware of the diverse cultures and values of different institutional types” (p. 72). The common practice of mentoring is that graduate students learn what to do as faculty members from their major professor, which is a limited view for students to learn because the learning process stems from one person and not the richness of other faculty in their department, or even faculty on their thesis/dissertation committee. Hence, this adds relevance to Reybold’s (2003) theory, which argues that the act of knowing constitutes identity. Plus Reybold suggested that orientation to the professorate
may be characterized through the lens of a person’s professional identity.

The three major findings of mentoring relationships in the participant data were:

- every participant believed mentoring for diversity is important for faculty to be successful;
- every participant understood mentoring for diversity can be complicated;
- and every participant believed that it is their responsibility to mentor other faculty to be successful.

In the following section each finding will be explored with relevant literature.

**Every participant believed mentoring was important for faculty to be successful but there were differential mentoring experiences**

One can surmise that every faculty went through a socialization process but how they survived the process was an indication of the mentoring experience. Tyler shared that mentoring is just as important as recruitment.

But I don’t care what you do, you’re going to have to recruit. Now, after that, retain is a different issue. That’s where the coaching comes in. That’s a whole new mindset that has to change.

Here Tyler is addressed that the effort it took to recruit diverse faculty was also needed to retain them in a STEM environment at this PWI. He also shared that faculty who were recruited to improve diversity needed help after they successfully entered academia. Further, he identified coaching as an important part of mentoring. Tyler’s comment suggested that there is a mindset or culture in his STEM field that senior faculty do not need to coach junior faculty. Tyler’s comments also suggested that STEM departments work hard to get diversity
into their departments, but they do not do a great job of mentoring their faculty. However, not every participant had the same negative experience or challenging perception with mentoring. For instance, Dana shared that she did get good mentoring from other faculty.

So he was great because here is an assistant director he reassured me not to worry about that. He said focus on your packet and so I felt I had a lot of support here to be successful I had what I needed. I had a lot of mentoring and I think in terms of you know offering me advice on what to worry about what not to worry kind of thing I think that’s really important.

Dana’s comments showed that she was guided toward what she needed to focus on after entering her department. Her mentoring obviously contributed to what activities she engaged in that led to her success. Conversely, not all faculty members received good mentoring. Vanessa accounts that she was not mentored.

And I saw inequities where the extra resources that faculty members were getting that I wasn’t getting. How some faculty the older seasoned faculty would take other faculty up other their wings. Didn’t anybody take me under their wings. I didn’t say anything about it I just worked harder. Just say I’m going to achieve what you’re helping this person achieve I’m going to get it on my own.

Here Vanessa had an unmet expectation to receive mentoring. As mentioned in socialization literature, faculty experiences informed their expectation (Tierney & Rhoads, 1994). According to Vanessa she had an internal script that guided her thinking that she will earn success on her own. The collected data showed that faculty of color have a different
expectation and experience of mentoring. Further the data showed that faculty of color are prepared to work individually toward their own success even though they would accept mentoring from other faculty members.

**Mentoring for diversity can be complicated**

Departments allocated resources to support or recruit faculty for diversity, but they did not allocate resources to prepare the organization for engaging those faculty members positioned for diversity hires at this PWI. Brayboy (2003) suggested that diversity is implemented without changing the underlying structure of the institution and its day to day operations. Rebecca shared that mentoring for diversity can have negative effects on minority faculty because they feel like they do not fit in with other faculty members in their department.

To me, one of the ways I see diversity maybe negatively impacting someone’s career is not feeling like they fit in. Not feeling like they have that support network in the department or whatever it is. So, I think trying to sort of build that confidence is a very important part of mentoring.

Rebecca’s comment suggested that it is not that the people do not fit in in their departments, but it is that the department does not take spend time to make sure that other faculty take responsibility to help faculty diversity hires feel welcomed in the work environment hired.

The expectations for diversity hires do not always mirror the expectations of other faculty member, nor are faculty treated the same after entering their academic departments. Dana shared an experience she witnessed when a faculty member was recruited as a diversity hire.
I did see a negative situation years ago. I was a junior faculty then. Where the department was advised that we could hire someone if it was a diversity hire. That was the stipulation and the people that they interviewed the one person that they decided to hire was probably not the most qualified. And it wasn’t that they weren’t qualified for a faculty position. It’s just that the expectation here for tenure might have been a little outside of the scope what they did for their research and the type of research they did. So unfortunately there was a split in our department at that the time it was about was it right to bring that person in. if they weren’t mentored correctly so they could be successful? Right?

Dana shared that the person coming may not be a good fit, but then she also shared that the department faculty were not in full support of this person joining the faculty. The data may have shown that diversity hires can enter a department that is polarized because of the different ways faculty value diversity, which adds complexity to which faculty members support the faculty member positioned as a diversity hire. One recommendation for STEM departments is they should do a better job to ensure that the existing faculty understands what’s expected of them so that the newer faculty will have a positive experience.

**Faculty That Engage in Diversity View Mentoring as Their Responsibility**

Each participant shared that they see it as their responsibility to mentor other faculty members. According to faculty identity development theory, the way that faculty view themselves fuels how they engage in their environment (Zellers, et al., 2008). If faculty see themselves as part of a collective then they will work to ensure the collective is successful,
but if they view themselves individually then they focus on their own success. Park shared that mentoring relationships should be based on helping others. He also mentioned that how he helps is not based on race or any other identities.

So, that clearly I guess my work in diversity has led me to believe that mentoring does not have to be race based and in order to relate with me African American Hispanic gay lesbian students don’t necessarily need to see me as one of their own.

Park shared that it was through his diversity work he developed a belief that mentoring is not identity driven, but internally driven.

However, having said that I also recognize that there may be many underrepresented minority students who are without a mentor throughout school because they can’t find somebody they strongly identify with. So you know work in diversity indicates to me that mentoring students in you know a wide range of possible reactions that differ on an individual basis of students

Further, Park is not motivated to mentor by how he views a mentee based on their personal identities, but he is aware that how a mentee seeks him out is based on how the mentee sees him. Park also shared his awareness to the benefit of people working with others that they share identities with. Just like Park mentors to meet the needs of others, Tyler shared that he mentors to meet the needs of those he mentors.

I get on everybody’s case equally so I’m an equal tyrant. As far as giving pep talks it depends on the situation, it depends on what kind of pep talk I’m going to give. If it’s a mentee that needs extra additional advice because they’re
getting ready for academic positions or want or an interest in that – because it’s all a different, I’ll give them a different mentoring style than I may give some other ones who are going into the professional world.

Tyler’s comments show that he tries to be the same to everyone he mentors. He also shared that his style of mentoring is dependent upon the needs those he mentors. Tyler acknowledged that there are differences based on people’s backgrounds that not only can affect their process, but also affect how a mentor serves their student. Both Park and Tyler understand how they impact mentoring relationships, but they mentor for the advancement of other faculty and students. Not all mentoring relationships go well for the mentee or the mentor.

David shared his account of a time that he handled a mentoring opportunity poorly.

A case I handled badly which I thought about over the years happened at my former university. We had a graduate student. African American Woman she was interested in meteorology climate. I don’t remember what her undergraduate major was in. But she seemed like she had a really good attitude and you know. So we figured we’ll help her to make up her deficits in course work and stuff. And I think at the time I was not aware of active level of mentoring that was required. My other graduate students were like you know physics majors from big universities and so they sort of knew how the game was played. She did not succeed in the program and eventually transferred to another department on campus and she did not succeed there and left. I won’t take a 100% of the blame, but I was naïve going in about the
amount of help she needed. And probably I would say I dropped the ball in making sure that she had people to interact with sort of a support network I think she was really lacking. She was the only African American in the program and the department did not have an undergraduate program it was a graduate program post docs, graduate students and faculty. She was the only African American in the building. So that didn’t work out and I think in retrospect it certainly have been handled better.

In David’s account he shared that he did not take 100% of the blame for the end result, but he understands that there is more that he could have done. Kram’s (1983) theory posits that some mentors see themselves as sponsors or helpers, and in David response he probably would have handled the mentoring opportunity if he viewed his role differently. Perhaps David saw himself as a sponsor and made sure resources were there to help, but he didn’t see himself as a resource. Possibly, David saw himself as a helper, but did not understand how much help this student in his story really needed.

The collected data showed that if a faculty member was not mentored then they justified mentoring another faculty member as their responsibility. For instance, Vanessa used her experience and her background to govern how she mentored other faculty to be successful.

I think that’s a requirement. I think that you should not be in a faculty position unless you’re willing to do that for somebody else. Cause you know just because I didn’t have it should make more eager to do that for somebody else.
Later, Vanessa shared how she helped other faculty of color because she identified with the feeling of being disenfranchised and feeling isolated.

Usually feeling disenfranchised, feeling isolated feeling like they don’t have any help. That’s why they are coming to me for support and guidance because they don’t have it. They are not getting it. It’s more of an issue that’s the impetus that’s driving them to me. When we’re talking that’s what comes up.

Faculty members like Vanessa work selflessly to assist faculty as well as students.

And I’ll be honest it has not only been extended to my faculty colleagues who are women of color throughout that lineage and pedigree it has also been to graduate students and really engaging them so they can get their names on some papers with me.

Vanessa shared that her mentorship is intentional to how she helps other faculty and students. She is intentional on who she mentored, because she strategized her mentorship to guide others to success but making sure they published their research. Vanessa’s mentorship of women faculty and faculty of color in particular is an example of faculty helping others with shared identities.

**Implications of Faculty Vitality**

**Social Activities**

While Huston’s framework was useful in extracting significant findings for intellectual exchange and collaboration, decision making processes, and mentoring relationships, it was not very useful with analyzing the data pertaining to social activities. Social activities are defined as anything that contributes to collegial relationships and helps
to facilitate intellectual exchange and mentoring relationships that creates a sense of community (Huston, et al., 2007). Participation in social activities helps build morale in the workplace and increase comfort between colleagues. Social activities can be characterized as going to lunch, attending receptions and departmental retreats.

The participants did not share a significant amount of feedback for this dimension of faculty vitality. Factors that can affect social activities are the culture of the discipline and institutions affects faculty members’ identity, and assumptions about how a faculty is to engage with their colleagues (Austin, 1990). Further, Xu (2007) also suggested posits that STEM culture is exclusive and lacks collegiality (p. 609). Xu (2007) also suggest that the STEM work environment is isolating and competitive. Now some faculty valued social activities and there comments will be shared.

**Miscellaneous Open Coding In this Study**

There were other comments that faculty participants shared that the framework did not account for. Some faculty shared comments that really illustrated how their internal scripts informed them how to engage in matters of diversity. Other faculty members shared comments about how they wanted to be social with their colleagues, but certain aspects of their identity impacted their engagement. In the following section, the comments of the faculty participants that do not fit the framework are shared.

**Faculty engaged socially based on convenience**

Social activities would be a vehicle for breaking down barriers of exclusivity and lack of collegiality at a research institution. The value of social activities is dependent on the culture of the department or the university. One body of literature that helps with
understanding how faculty engage socially is psychological contracts. Rousseau and Tijoriwala (1998) posited that a psychological contract is a balanced relationship between employee and employer that is obligatory in the exchange. Therefore, an employee with high levels of obligation will participate in social activities because there is a sense that the employer also feels obligated to the employee. If they are not obligated, then it is an inconvenience to participate in social activities. Psychological contracts address obligations between employee and employer in this exchange. Noticeably, participants in this category framed their obligations in other areas of their lives. Therefore, participants decided that participation in social activities depended on their availability, not on their obligation to their work environment or to their colleagues.

Marcus shared that he attends functions in general, but he tries to be present if there will be dignitaries or other senior college personnel there.

So we sponsor sort of an annual sort of family picnic/get together for the whole department that I pretty much work on to recognize the students who’ve done really well. Whenever we have, you know, sort of when the chancellor comes, you know, any sort of dignitary comes to the college I’m usually there for those kind of events.

Marcus’s participation in social activities is dependent on who is present at the social activities. Others like Deanna attend social activities if it is convenient to their schedules. Deanna shared: “It is all about does it fit in my schedule. I don’t actually have the flexibility to say no unless I have a conflict.” Marcus’s response shows his engagement in social activities is dependent on who will be present at the social activities. Similarly, Tyler shared
that he attend social activities if he has time to go.

You know, I won’t purposely say I won’t go, it’s usually, “Do I have the time to go?” Sure. And if it’s something I want to go to, of course. If it’s not something I want to go to I’m just going to go because I don’t want to go, you know, but it has nothing to do with because I don’t like the person or don’t like the event. It’s a matter of time.

The data showed that faculty engaged in social activities if important people were there or if it was convenient with their schedules.

**Faculty engage with one another out of obligation**

Deanna, who is an Associate Dean, conceptualized social activities as role modeling for other faculty, in particular women faculty. Therefore, her involvement in social activities is to be an example for other female faculty to witness and hopefully to emulate her attendance at these kinds of events.

You know it’s interesting when I keep saying I think for me it’s important that I’m a role model because I am still a woman in a college where there not as many women as I would hope and I’m in a profession where there are few women.

Deanna’s engagement in social activities is another example of being of service to other faculty similar to decision making processes. Vanessa, who is an Assistant Dean, shared that through her lenses of (race and gender) she made decisions to attend social activities.

You know all of those kinds of events that we do in the college. I try to have my presence there because it’s one of those things. If I’m not there it’s
noticed. If somebody else is not there. Because of a lot of these events since our college is large at these events you’re talking about hundred to two hundred people. So if I’m not there its noticed because I stand out.

Vanessa conceptualized her involvement in social activities as addressing the low number of ethnic diversity in her academic environment at a PWI. If she is not present then others will notice because her ethnicity. Tyler who is a senior faculty shared that his participation was seen as him being part of a bigger group based on race.

I mean, I’m going being a representative, but as I mentioned before, we can’t help but be a poster child, right? We’re there. We represent everybody else. When we do something great, maybe that might help reduce the biases against us. When we do something wrong all of a sudden everybody did something wrong and we’re all implicated and nobody’s the same. It’s an unfortunate part of our existence; we can’t hide our skin and so even if we have different features, we’re different individuals, we’re all lumped into the same box as if we’re not individuals.

Tyler identified with his racial identity group and this informs how he engages in social activities. His conceptualization of engagement is about a collective and not about him as an individual. This could be a reflection of him being at this PWI where underrepresentation of certain races is visible.

**Faculty engage in social activities with other colleagues to break down barriers**

The data collected showed that some participants value social activities because it breaks down barriers or walls between colleagues. Dana shared that faculty find ways to
divide themselves and that these activities help with breaking down walls so people interact as a group.

People find strange ways to divide themselves. All over. I think to me that’s the biggest killer of motivation for across the board for whatever going on so I think in terms of social activities they are really important for having the concept of the group as a group. I think they are way more important than people realize.

Dana values social activities because she feels obligated to her colleagues, which relates to social exchange theory. Sean shared how these events are good for relationship building between students and faculty.

I think it’s important for faculty to participate, particularly on things that interact with students even if they find that the time is inconvenient or something, they should make it a priority because I think the students need that.

From Sean’s response, he conceptualizes social activities as a way of breaking down barriers between different groups, which still relates to social exchange theory because his internal script is based on obligation. Hence, his engagement is about supportiveness just like what’s in social exchange theory. Similar to Dana, Park shared that when he engaged in social activities, he recognizes the barriers that it breaks down between himself and colleagues.

There are a number of social gatherings he has that I attend. I think they are very important because when you invite somebody into your home it sends the message that they are truly welcome. I do think that eating with people
breaking bread with people is a great way to break down barriers of communication. It’s a good way to establish camaraderie and understanding.

**Faculty engage in diversity with other colleagues to get along and enhance their careers**

Reflecting back on faculty socialization, faculty expectations are determined by what they have experienced and learned. According to Tierney and Rhoads (1994) faculty socialization is the process where a professor enters an institution and becomes accustomed to the organization’s norms. It happens in two stages: Anticipatory Socialization and Organizational Socialization. “Anticipatory Socialization is when a person takes on the attitudes, actions, and values of the group to which they aspire” (Tierney and Rhoads, 1994, p. 23) while organizational socialization begins after the faculty member enters the organization. Yolanda shared:

> I feel like I’ve been a dutiful faculty member I’ve done everything I’ve been told to do.

Here in this brief statement Yolanda shared that she has done what she understood was expected of her as a faculty member. This showed that she perceived that she had done what she understood it took to be perceived as a contributing faculty member in her department by her colleagues. Similarly, Park shared:

> Particularly when I was non-tenured faculty or before I got tenured, I felt like I wanted to be very careful about people’s impressions of me. I wanted to be viewed by others as being an acceptable candidate for tenure.

Park’s comments show that as a non-tenured faculty he wanted others to see him as an acceptable candidate, which means that he sought approval of his colleagues. Austin (2010)
defines early faculty as faculty that have not yet been awarded tenure. Both Yolanda and Park’s comments show their desire to be accepted by others in their organization. Organizational socialization is important in Yolanda’s and Park’s case because it could be assessed that they may have done something different upon entering academe until they understood the culture of their work environments which informed them how to behave. While this literature of socialization lends itself to this study because it evidences that faculty expectations stem from their experiences it does not take into account how faculty identities also inform their expectations. The data shows that expectations are influenced by two points of reference: their experience and their personal identities. Referencing Chapter Four both Yolanda and Park have personal identities that inform them how they understand interactions to go and how they should behave.

Engaging socially for some faculty participants was about providing opportunity for the participant’s advancement or advancing an agenda. For instance, Vanessa shared that she engaged in activities based on what it can provide for her in the future.

So, that’s one way I make the decision where is it and what is it. But now if it’s the 4-H gala if it’s in [exclude city] or [exclude city] I’ll go to that. It’s the where it is and what is it. It’s mainly what is it. Where it is and honestly what can I leverage by being there? That sounds bad but it’s the truth. What can I leverage by being there? Is that gonna put me in conversations with some people that may can support or help me further and advance my work.

**Expectations of faculty inform how they engaged in matters of diversity**

The data showed that faculty participants had an internal desire to excel in their jobs
and they also valued being able to collaborate with colleagues. However, participants had their own expectations of how the interactions and collaboration should proceed based on their experience and understanding. Therefore, when expectations of intellectual exchanges and collaborations went to the opposite from how their internal scripts informed them how it should go, depending on their professional background (employment position/status), personal identities (race, gender, etc.) or training of the participant, that would determine how each participant remained engaged with other colleagues. For instance, Sean talked about his actions in participating in the development of the Gay Lesbian Bisexual Transgender (GLBT) center at his institution, but he reflected on how his mindset gave him the expectation that something bad might happen when in fact he should have waited to see what happened.

But all the reaction has been positive, you know, it’s just I expected I would have to deal with some negative flack and it just didn’t happen, but I think that’s a good example of how we let ourselves be held back needlessly. It’s in our own heads.

Sean’s experience informed him that sharing ideas about developing a center focused on the GLBT community would make others uncomfortable and lead to opposition from his colleagues. Further, Sean went in to the meeting with his colleagues to share data that justified how a GLBT Center would enhance the institution by educating the university community on the community and help develop allies across the campus. Sean expected opposition from faculty members, to his involvement in the development of the GLBT center being a faculty member. Solely focusing on the perceived opposition would have prevented
Sean from moving forward. Also referring to Sean’s perception of diversity being “a rocky road” it is understandable how he perceived his colleagues would receive his involvement in the GLBT center. As Tierney and Rhoads (1994) suggests, his experience with diversity informs his expectations. However, he moved ahead and learned that his expectation was met with support. Thus this changed his expectation of receiving opposition to expecting support to his involvement with the GLBT center. The issue with Sean’s experience and with academia is that in academia success of faculty is relegated to collaborations with other faculty and is dependent on how others perceive their work (Austin, 1990). Faculty members who engaged in diversity in the academic environment are up against systemic inertia and daily routines that contribute to diversity still not successfully realized in the academy.

Summary

The purpose of Chapter 5 was to present and discuss the participants’ experiences based on their in-depth interviews. Participant’s individual stories were analyzed by the theoretical framework “faculty vitality” combined with Saldana’s verbal exchange coding scheme. The participants’ stories and comments were responding to the research question for this study:

*How do STEM tenured faculty members understand and engage diversity in routine day to day duties?*

Engagement in intellectual exchange and collaboration is defined as the healthy sharing of ideas among colleagues (Huston, et. al, 2007). In this study all of the participants engaged in intellectual exchange and collaboration in matters of diversity because of an internal motivation to excel and work with others. There were five findings in this dimension
and they were:

- participants of color and women framed intellectual exchange and collaboration through their lens of race, ethnicity and gender;
- faculty of color try to mentor other faculty of color and women faculty try to mentor women faculty when engaged in matters of diversity;
- participants that identified as a person of color would either overlook any mistreatment to do their job or they made sure their diversity work was inclusive of others because they see their position as opportunistic in helping other faculty or students to progress in their careers;
- professional background and position influenced how participants framed intellectual exchange and collaboration by either seeing it as something they engaged in it to help individuals selectively or collectively with regard to personal identities or they framed it ways that would enhance their academic departments;
- and faculty that engaged in diversity before tenure will continue engaging in diversity after they earn tenure, but before earning tenure faculty are very careful how visibly they share their engagement in their department among colleagues.

In this dimension there were differences between participant’s understanding of intellectual exchange and collaboration that was attributed to their personal identity and their professional background. Other dynamics that affected participants’ understanding were their work environments and working a Predominately White Institution (PWI). Tenure played a
huge role in participants visibly engaging in diversity related initiatives in their work environment.

Decision making processes was defined as when faculty participate in activities that have an impact on their work environment and also impacts others (Huston, et al.2007). The findings showed that in decision making processes some faculty struggle with the duality of proving their worth or earned status to their colleagues while simultaneously advocating or fighting for others. In this dimension the data showed that participants have an interrelated process going on in their mind where they walk a line of fighting for self and fighting for others. The findings in this dimension were:

- participants engaged in diversity more openly in their academic environments after earning tenure;
- participants viewed their engagement in diversity as a risk because the culture of their workplace environment did not value diversity like they did;
- women experience difficulty as a result of their gender after reaching the pinnacle of their careers;
- participants recognized they had to push against colleagues to engage and promote diversity;
- participants viewed engagement in decision making processes as advocating for others.

Both decision making and intellectual exchange and collaboration had a common link with tenure because it influenced how participants engaged in matters of diversity in STEM environment. Participant experiences were also a reflection of their identity. In this
dimension participants felt they had to push against their colleagues when engaging in matters of diversity because of the culture in disciplines. Further, participants shared that their engagement in social activities was about helping other faculty and students.

Mentoring relationships are needed to help junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al.2007, p. 516). Like intellectual exchange and collaboration, the way that faculty frame mentoring relationships is a reflection of their socialization. Intellectual exchange and collaboration showed what faculty experience reveals what they do or what they expect. The findings in this dimension were:

- every participant believed mentoring for diversity is important for faculty to be successful;
- every participant understood mentoring for diversity can be complicated;
- and every participant believed that it is their responsibility to mentor other faculty to be successful.

Every participant shared the same ideas that mentoring is required for success. However, this dimension really brought how mentoring for diversity complicates experiences of some because what is required for successful diversity recruitment is also required for successful diversity retention in STEM environments at a PWI. Also participant accounts suggest that when a faculty member is a person of color, they think about two dynamics being at a PWI and a research institution. As a white person the only dynamic that impacts their engagement is that the institution is a research university. Regardless dynamics influence their decision to engage in decision making processes. The other finding showed that mentoring is something
participants all believed was their responsibility.

The social activities dimension of faculty vitality was not significant to this study. Further, there were other factors that affect faculty member’s engagement in matters of diversity that were not captured by the theoretical framework. Some of the major findings from the other comments of participants that were shared were engagement socially were heavily influenced by the internal process of each participant. This dimension really highlighted each participant values because it was about how they viewed their time, their position or their colleagues. Some faculty members engage with other colleagues to break down barriers, while some engage to enhance their careers. In the next chapter implications for practice and recommendations for research are presented.
CHAPTER SIX

IMPLICATIONS FOR PRACTICE, RECOMMENDATIONS FOR RESEARCH, AND CONCLUSIONS

In Chapter 6, an overview of the purpose and the significance of the study are presented, followed by how this study has contributed to literature and theory. Next, the implications for practice and recommendations for future research based on the findings are presented. The final section of this chapter presents conclusions of the research and parting comments from the researcher.

Overview of the Study

The purpose of this qualitative study was to gain a richer understanding from tenured Science Technology Engineering and Mathematics (STEM) faculty on how they engage in diversity during their day to day work duties.

The significance of this research was to provide a more holistic approach to understanding faculty engagement in diversity. This study provided empirical insight into the micro or ‘taken for granted’ ways that STEM tenured faculty understand and enact diversity within their specific contexts. Knowing that diversity is not an element that is traditionally valued in promotion and tenure, faculty that value matters of diversity shared their experience with diversity.

This study examined STEM tenured faculty at a southeastern research university that is a predominately White Institution (PWI). The data was collected by interviewing participants and transcribing their interviews. An analysis of the participants’ interviews documented each of their experiences throughout their professional careers. Understanding
that faculty learn their roles through socialization, faculty experiences informed the
participants what to expect in their work environments and informed them what they should
do as faculty (Tierney & Rhoads, 1994). As the participants responded to the overarching
research question: How do STEM tenured faculty members understand and engage diversity
in routine day to day duties? The framework of faculty vitality provided four dimensions that
faculty could have engaged in diversity:

1. Intellectual exchange and collaboration
2. Decision Making Processes
3. Social Activities
4. Mentoring Relationships

Vital faculty are passionately involved in and committed to their work, committed to the
goals of the institution, continually developing their abilities, and growing in and
suggests that faculty vitality impact faculty’s department, students, and the institution.
Huston’s dimensions in addition with Saldana’s verbal exchange coding provided better
methods for exploring participants’ personal meaning of key moments by examining the
practices or the “cultural performances of everyday life” (Saldana, 2009). The use of this
combined framework and coding schemata (Huston and Saldana) was too confining to
capture every element of what faculty shared. Further, participants shared experiences that
were a response to other identities that the framework could not capture. Thus, a
miscellaneous findings section gave more accounts from faculty participants that showed
how faculty engaged in matters of diversity.
This chapter also shares how this study contributes to the literature and to other theory with regard to diversity. Based on the findings, implications for practice were generated, and tailored for STEM departments. A section on recommendations for future research follows implications for practice, and the chapter closes with conclusions of the research.

**Significance of the Study**

This study examined STEM tenured faculty at a southeastern research university (RU) that is a Predominately White Institution (PWI). Knowing that diversity is not an element that is traditionally valued in promotion and tenure, faculty that value matters of diversity shared how they engage in it during their day to day activities. Faculty experiences were explored from their stories which were very diverse in nature because their stories covered their careers which also meant that each of the participants approached diversity from different perspectives as well as they all had different experiences throughout their careers that shaped how they understood diversity. Further, the faculty participants that shared how they engaged in diversity on a day were all successful since they had earned tenure and they were vital meaning they were engaged in their work environment. The processing of each faculty participant was connected back to their salient lens (i.e. identities in diversity like race, ethnicity, gender, etc.) that informs how they understand diversity and understand their role as a faculty member enhancing diversity in their work environments. Depending on the experience of faculty, their engagement in diversity can be personal and/or professional. Understanding how and why STEM tenured faculty engaged in matters of diversity from the faculty’s perspective gave insight on how to better design diversity
initiatives at institutions and how to develop and/or shape policies that enhance and integrate diversity in the STEM academic culture.

**Contributions of this Study**

Historically diversity has been conceptualized in the following major thematic ways: membership, recruitment and retention, affirmative action, diversity training, and institutional integration. Also, when diversity has been studied in academia there has been a major focus on how diversity affects student populations. Further, when diversity has been studied in STEM, significant amounts of funding has been allocated to address this struggling phenomena of diversity, but still it has been not actualized in STEM disciplines.

In this study, diversity was examined by the faculty participants’ conceptualizations of diversity in their daily worklives. As mentioned earlier, the faculty participants were STEM faculty and they were tenured faculty. This study looked diversity from faculty of STEM disciplines that are struggling to enhance diversity as well as the perspectives shared were from faculty that are engaged in their work environments. This research did not produce a new model on achieving more successful diversity in STEM, but it did offer a more holistic approach to understanding faculty engagement because it looked at the dimensions of engagement (intellectual exchange and collaboration with colleagues, decision-making processes, and mentoring relationships).

This study was administered by getting the stories of faculty on how they engage in diversity through their intellectual exchange and collaborations, decision making processes, social activities, and mentoring relationships. The faculty participants were from different levels of faculty administration at this particular institution. Stories were shared from faculty
members that were newly tenured, senior tenured faculty, and those that were administrators (department heads, assistant/associate deans). The participants in this study gave insight on how and why they engaged in matters of diversity. For most of the participants their engagement in diversity was informed by an internal script that guided how they should engage in matters of diversity. This study showed that for some participants, engaging in diversity intellectually was a personal investment while for others engaging intellectually was mostly for professional gain to enhance their department or their position. There were some participants that identified that when engaged in decision making processes for diversity, there was an internal struggle because they were up against disciplinary and departmental cultures while also trying to advocate for themselves and/or other faculty and students. There were some participants that saw their engagement in diversity for mentoring others as a responsibility to help other faculty members and also students to progress in their careers.

While this study examined the experiences of tenured faculty members, it also gave the participants an opportunity to go back over their careers from graduate students to current faculty and share how their experiences informed their conceptualizations of diversity. Thus faculty socialization theory was very instrumental to this study because it accounted for how faculty learned to be faculty. In this study, the participants were able to look at their identities and see how their identities influenced how they engaged with their colleagues and their students in their work environments. The interview questions were designed based on the framework, to extract stories from participants that informed what common activities faculty members engaged in that enhanced diversity in their work environments and not through any
additional initiatives like special diversity workshops or diversity conferences.

The theoretical framework of faculty vitality was very useful in this study because it allowed for examining day to day work duties of the faculty participants by looking at specific ways faculty engaged in diversity in their work environments. One dimension of faculty vitality that was not significant in this study was social activities. Social activities did not show to be very important in the experiences of the majority of the participants. Faculty vitality also did not account for all experiences of faculty that informed how they engaged in diversity. Therefore, this study also provided extra insight with other factors that impact faculty engagement in matters of diversity like their identities, their status as tenured faculty, their lived experiences, and their understanding of their roles as faculty in this movement of diversity. This study also gave insight to the idea that faculty with different identities engage in diversity in different ways, which can be significant to enhancing diversity in STEM.

**Implications for Practice**

A key goal of qualitative research is to learn about participants through their accounts of experiences within particular contexts. Creswell (2003) notes that when we conduct qualitative research that we empower individuals (participants). Merriam (2002) posits that qualitative research makes meaning from the interaction of individuals with their own world. Therefore, studying a group or population produces variables that explain a phenomenon in its context (Creswell, 2007, pg. 40). There were many concepts that were pulled from other theorists about unique approaches to use for engaging in diversity. There were three implications for practice to improve diversity in STEM environments at a research university that is a PWI that resulted from the study.
Identity Affects the Way Faculty Frame Their Engagement in Intellectual Exchange and Collaboration in Diversity

Engagement in intellectual exchange and collaboration is the healthy sharing of ideas among colleagues (Huston, et. al, 2007). Healthy sharing indicates that faculty ideas result in relationships developing from collaborating. Establishing collaborations and accessing resources, balancing work roles, and understanding the unwritten rules of academe help faculty be productive and thus creates more collegial relationships (Bland, et al. 2009; Russell, 2010).

Faculty of color, women faculty, and also GLBT faculty framed their engagement in intellectual exchange and collaboration in diversity at a PWI through their personal identities (i.e. race, ethnicity, gender, sexual orientation) while white male faculty framed their engagement through the lens of their professional background and position or rank. The most central duty that research faculty have is to engage in intellectual exchange and collaboration. “The Social identity theory proposes that individuals exhibit preference toward their own group and as a consequence favor its members in the distribution of resources” (Brown, 2004, p. 27). This study showed that faculty of color, women faculty, and GLBT faculty practice what Brown (2004) suggests which is to work with people of their own group; however these faculty members did not favor their members over others. They are just intentional about engaging with people that have shared identities while still working with people that have different identities. People of color and women do not have the privilege to not work with people of different backgrounds, while those that identify as GLBT may or may not have that privilege depending on if they openly out with this part of their identity.
White males on the other hand have the privilege to engage or not engage in intellectual exchange and collaboration in diversity with colleagues. Brayboy’s (2003) theory posits that diversity becomes something that certain populations have to address while others can continue to be scholars and teach (Brayboy, 2003). Brayboy (2003) also suggests that white faculty, remain unmarked, and continue to operate under the expectation that they can be faculty members while faculty (scholars) members of color are called upon to assist with implementation of diversity.

When PWIs are implementing diversity initiatives there needs to be clear expectations that everyone is required to participate. One of the benefits of being a tenured faculty member is that faculty members have freedom to do other activities in their department without fear of challenges to employment and they have decision making power. Leaving it up to faculty whether or not they engage in matters of diversity makes it easy for faculty to choose not to be a part of it. Furthermore, the university also needs to have clear recommendations and suggestions on what faculty can do to engage in diversity instead of leaving it up to faculty to develop their own agendas. Universities can provide options on how faculty can participate in the movement to enhance diversity, but faculty do not have to be limited to the options. Universities need to do a better job of owning and stating what they want their institution to accomplish with regard to diversity by being explicit in what they want to accomplish. These terms can be put into policies across for the institution and in the mission and vision of the institution.

The data showed that there are other drivers that influence how and why faculty engaged in intellectual exchange and collaboration for diversity. Administrators (Presidents,
Chancellors, Provosts, Deans, Department Heads) at PWIs need to be aware that diversity means different things to different people. Therefore, faculty may engage in diversity where they feel the most comfortable to engage. Furthermore, administrators need to understand that faculty members engage in diversity for different reasons and that some faculty may view attempting changes related to diversity are perceived as risk-taking acts. The finding indicates faculty members engaged in diversity from their lived experience and identities and how they understand that their institution valued diversity. The other side of that is if faculty members do not have experiences engaging in diversity it is unlikely that they will engage diversity and if the environment is not supportive of diversity then certain faculty will not engage in matters of diversity.

Tierney & Rhoads (1994) suggest that lived experiences inform faculty what they should do. Leaders at research universities and PWIs need to do a better job of capturing how their faculty understand diversity to inform them how to initiate diversity activities and hold faculty accountable for enhancing diversity while faculty are busy trying to be successful at administering research. Just because someone is a faculty of color does not mean that they engage in diversity and because someone is white does not mean that they will not engage in diversity. Also, leaders need to learn if faculty members have experience engaging in diversity upon entering the university and those that are already at their university. Perhaps inviting faculty to get other faculty engaged in diversity is a better method instead of trying to impose mandates from the top down. Lastly, leaders need to know how faculty members have engaged diversity whether it was through race or sexual orientation. The data showed that identities inform how faculty frame their engagement in diversity. Therefore, before
asking faculty to engage in all aspects of diversity they may want to be informed how their faculty members understand their role in diversity and conceptualize diversity. Meaning if race is salient for a faculty member, perhaps working on sexual orientation issues is not their forte. It does not mean that they cannot work on other diversity issues, but universities should want their personnel to be successful and success can also be tied to the expectations placed on the faculty.

**The Internal Battle that Tenured Faculty Struggle with in Decision Making**

Decision making processes are defined as moments when faculty participate in activities that have an impact on their work environment and also impacts others (Huston, et al. 2007). The kinds of decision making processes that faculty engage in are hiring committees, graduate school admission committees, and promotion and tenure committees. All of which impact other faculty and students careers.

In decision making processes for diversity, tenured faculty struggled with an internal battle because they had to prove their worth or earned status to their colleagues while advocating or fighting for other colleagues and students. This finding indicates that in decision making processes, faculty members are constantly questioning ‘should they fight for themselves and try to fit in the academic culture,’ or ‘should they try to fit into the academic culture and not fight for themselves and others.’ Therefore, faculty members are trying to decide if they should pushing against or advocate for the change of academic cultural practices. Academic cultural practices could be that process that determined whether faculty members have earned tenure, how graduate students are chosen, or how faculty members are hired into STEM departments.
One body of literature that contributed to this dimension was ethicality. Ethicality is a function of a well-developed identity that results from a conscious and deliberate commitment to one’s role expectations (Reybold, 2008). Ethics are principles or standards related to moral conduct and ethicality is how one conforms to those principles and standards. Reybold (2008) also suggest that “early career faculty members, having little training and even less experience, and are left to rely on personal standards of integrity when faced with professional dilemmas” (p. 280).

Leaders of institutions should be clearer about what is expected of faculty when engaged in decision making processes for diversity. Support should not just be a memo of expectations but something more tangible like a reward or acknowledgement that shows the institution is dedicated to faculty affecting diversity in decision making processes. One way to demonstrate support for diversity is for the institution’s leadership to let faculty members know the position of institution and follow the position of the institution in their own practice. Next, leaders should clearly articulate what the institution is willing to do to support faculty in decision making processes for diversity. Leaders should keep in mind that faculty’s experiences inform them what they should do; therefore, leaders should develop guidelines that show faculty members how they should govern themselves when dilemmas of diversity arise.

Brayboy’s theory on diversity adds evidence why these steps for leaders are important. As Brayboy (2003) posits the way diversity is viewed is that it can be implemented without necessarily changing the underlying structure of the institution and its day to day operations (Brayboy, 2003). Faculty members can work to improve diversity but
their efforts are not effective because the culture of the department or institution does not change. Therefore, it would behoove universities to have more unified methods of addressing diversity issues across the institution. This will show that the institution is progressively enhancing diversity and this may help reduce the internal battle that faculty go through in decision making processes.

Another thing leaders of PWIs can do is to be intentional to make core cultural changes that cultivate a more welcoming and inclusive environment, and also send a message that the institution is dedicated to diversity, and not just dedicated to its reputation or research agenda. Core cultural changes can be changing how institutions assess how faculty qualify for tenure, reconsider using standardized exams for assessing how potential graduates enter academic programs, and have unified processes that include how diversity is important to incoming faculty across the institutions in departmental hiring processes.

*Mentoring for Diversity is Important and Complicated*

Mentoring relationships help junior faculty members establish themselves and transition through different facets of their professional lives (Huston, et al. 2007, p. 516). Effective mentoring can cut across different lines like culture, race, and gender (Johnson-Bailey, 2002). Cawyer, et al. (2002) suggests that mentoring is frequently recognized as a method for facilitating the growth of new faculty.

In this study every participant understood mentoring was important and that mentoring for diversity can be complicated. This finding indicated that mentoring is a necessity for faculty to be successful but there are challenges with mentoring for diversity. From participants’ stories faculty member’s journey began in graduate school and mentoring
was a part of their journey, but after they joined the academy as a faculty member there was an unspoken expectation from each participant that they would be supported by their faculty colleagues. Not all faculty expectations for mentoring were actualized.

Sands (et al., 1991) suggests mentoring has resonated loudly among minority group members and women that tend to be excluded from informal, interpersonal means of career development. Brown’s (2004) Social Identity Theory proposes “that individuals exhibit preference toward their own group and as a consequence favor its members in the distribution of resources” (p.27). For faculty to be successful mentoring is required but for mentoring relationships the sharing of identity is not necessarily required for faculty to work together. The desire for the junior faculty to be successful in both the mentor and the mentees internal script is what is required for successful mentoring.

Mentoring for diversity can be complicated. This finding indicates that STEM environments are not cultivated for faculty members positioned as diversity hires to be successful, and special attention to mentoring these faculty relationships may be necessary, because the culture of STEM is not changing or developing for diverse faculty careers to be enhanced. Xu’s (2007) theory on STEM environment culture evidences that isolation and competitiveness make it difficult for diversity to be enhanced. Therefore, STEM departments need to do a better job of cultivating a welcoming and inclusive culture by constantly preparing their faculty to be more comfortable with diversity. Departments can have sessions for faculty on how to improve professionally and personally by examining their privilege how it can be used to enhance diversity in their disciplines and their departments. Leaders of STEM departments can demonstrate allied behavior to faculty members of marginalized
group identities by inviting faculty all faculty members to go through collective experiences where they learn about how they make their work environments more welcoming for these populations. Leaders of STEM departments can also focus efforts on helping faculty learn about their unconscious bias that influences how they make decisions by bringing in outside professionals to help faculty see how their bias can play out in hiring practices, in how they do research, and how they teach. Leaders of STEM departments can enhance diversity by making it a requirement that senior faculty mentor junior faculty by ensuring that they engage in activities that lead to tenure. Leaders can develop mentor guidelines that give both the mentor and the mentee earmarks to aim for that keep the mentee on a path to tenure and holds the senior faculty accountable to the junior faculty. Promotion and tenure criteria can be promoted as a collective initiative that says “a culture of collective success equates to departmental success.” Therefore, when a faculty member gets tenure then the department gets recognized for contributing to their discipline by helping a fellow colleague advance to the next level.

**Recommendations for Future Research**

Faculty vitality was combined with Saldana’s verbal exchange coding to get more understanding of the everyday aspects of what faculty shared in their responses. Combining the two helped with capturing how faculty engaged in matters of diversity in specific aspects of their everyday work duties. Combining the two also helped with understand why faculty engaged in matters of diversity. To understand how both Huston’s work and Saldana’s work contribute to this study individually, they are both broken down to show how they were useful to this study, but what part(s) were not significant to this study.
Faculty Vitality

Faculty vitality as a theoretical framework was useful to this study, because it showed how three dimensions contribute to how faculty engage in matters of diversity. Faculty vitality was useful in learning how faculty engaged in intellectual exchange and collaboration, decision making processes, and mentoring relationships because it guided how questions were developed to help faculty reflect on their engagement throughout their academic careers. Two of the dimensions, intellectual exchange and collaboration and mentoring relationships, were factors that contributed to faculty being successful in their disciplines by earning tenure. Intellectual exchange and collaboration showed that faculty work well with their colleagues while mentoring relationships showed that faculty received guidance from a mentor on how to be successful. Decision making processes was an indicator that faculty were successful because earning tenure added to the validity of their participation in decision making in their work environments.

Social activities was the one dimension of faculty vitality that was not significant in this study. Faculty participants overall did not share accounts that evidenced that social activities was important to their engagement in matters of diversity. The framework was not inclusive of all of the experiences that inform how faculty members engaged in matters of diversity. This led to other subsections discussed in Chapter five surrounding how faculty engaged in matters of diversity.

Saldana’s Verbal Coding Exchange

Saldana’s verbal coding exchange had five dimensions as part of this coding scheme and they were useful in understanding faculty’s practices or the cultural performances of
everyday life. This coding exchange helped with exploring what activities for faculty members were routine and rituals meaning these activities were commonly done in their work environments. Surprise and sense making episodes was useful to this study because it captured what occurred to faculty that they did not anticipate happening. Many faculty participants shared that their involvement in diversity was at times a risk-taking episode or a face-saving episode particularly based on their status of tenure. Lastly, the rites of passage dimension of Saldana’s exchange was useful in exploring what occurred to faculty that altered how they saw themselves or activities that happened that impacted their social status or identity. Unfortunately, the crises dimension of Saldana’s exchange did not deem valuable to this particular study because participants’ stories did not account for some kind of verbal exchange or overarching pattern of lived experience that occurred in the faculty member’s work environment that impacted their positions.

Follow-Up Studies

When considering follow up studies on engagement in diversity, the framework(s) should be more inclusive of what and how faculty members engage in their environments, but also why faculty engage in their environment. The framework(s) should be inclusive of numerous areas that faculty engage and not just the four identified with faculty vitality. It would be useful if the framework could stand alone and not have to be joined with another framework to develop meanings from participants’ perspectives.

One limitation to this study was that the participants were identified as being champions or supporters of diversity initiatives. One follow up study for this topic would be to identify faculty that are not actively engaged in diversity and inquire why they do not
engage in diversity. STEM departments may be made up of those that value diversity and those that do not value diversity. Also some people may not engage in diversity because of a negative experience they had that informed them to repel diversity activities. This study would inform STEM departments at PWIs how to develop diversity initiatives that are inclusive of all faculty members. Those that are working on diversity initiatives in STEM environments at PWIs can get an understanding of their colleagues perceptions of diversity before trying to implement a diversity initiative.

Another limitation to this study was that all of the participants were tenured faculty members. This study did not look at faculty members that are just entering the academy as recent graduates of graduate programs which means non-tenured faculty were not part of this study. Also faculty that are solely teaching faculty or solely research faculty were not interviewed. Thus it would be helpful to understand how faculty at different status levels understand diversity engaged in matters of diversity.

Another follow up study for this topic would be to examine how STEM faculty think diversity is valued at their institution and how that influences how faculty engage in diversity. This information would inform those that work in diversity how to develop diversity initiatives that align with faculty’s bottom line and the institution’s mission and vision. Faculty are already overworked and have so many requirements on them to stay ahead in their disciplines, to add something else for them to do while it may appear to be good it could still be taxing. Making diversity initiatives that align with faculty’s understanding can be encouraging for faculty to actively engage in diversity because it allows them to have ownership of the process and not be victimized or felt they are being
made to do something that they do not want to do.

Another follow up study is to ask faculty how they think diversity helps them do their job more effectively because this will help university personnel find out how their employees value diversity and if it is something that their constituents really want. As this study is based in the university setting, some of the participants shared they had industry experience before coming to the academy. This study did not examine how faculty members understand their industry outside the academy values or understands diversity. Further, asking this question would also inform how faculty members understand their industry outside of academia values diversity because STEM disciplines are not just based at universities, but it’s the universities that prepare students to go out into industries. Academic cultural, disciplinary cultural and departmental practices have to change in order for diversity to be successful. Further, academic culture, disciplinary culture and departmental practices all need to be aligned in order for diversity to be successful because all three of these areas feed one another.

Conclusions

The purpose of this qualitative study was to gain a richer understanding from tenured Science Technology Engineering and Mathematics (STEM) faculty on how they engage in diversity during their day to day work duties. With the framework of faculty vitality overlaid with Saldana’s verbal exchange coding the research provided a perspective on the lived experiences of individuals through a narrative lens. Using an autobiographical narrative allowed people to illustrate their past and relate it to the present (Richardson, 1995, p. 209). Every narrative helped to examine participants on an everyday level.
The 12 participants directly informed this study by giving an in depth account of their engagement in diversity. The participants were representative of different STEM disciplines, personal identities, and ranks. Their stories all showed how their socialization to faculty, lived experience and identity informed how they understood their role in diversity.

This research study though rich, has limitations. A major limitation to this qualitative study is the number of participants interviewed. While these participants all have credible experience for this study, it may be difficult to transfer some of the findings to a broader population, even though the data is specific to these participants and the narratives are their personal accounts.

The researcher approached the project from the perspective of a diversity professional that has a STEM background. The participants were chosen through purposive sampling and they are in a protected position having tenure. However, other identities were not considered for this study.

For anyone who wished to transfer these results to a different context and had questions, the researcher would be accessible to discuss the findings and questions about the research. Otherwise, the decision to assign results to a different context is up to the practitioner.

**Parting Comments**

It is appropriate that this study end on an inspirational note since it was started by inspiration. The researcher has a STEM background and is an African American male that experienced isolation at times in his profession. However, when the researcher started venturing into the social sciences he saw that diversity was an idea that was discussed and
explored openly. This led to the development of the topic.

One commonality across all of the participants in this study is that they all valued mentoring and saw that mentoring is needed to be successful. Mentoring takes two parties the mentor and the mentee which shows that the participants value working with others. The term “Diversity” is not limited to cross racial differences, but also intra-racial differences as well as socioeconomic status, religion, diversity of thought, lifestyle, culture, dress, and numerous other attributes (Almeida-Neveu, 2010; Edelman, et al., 2001; Sims, 2006). This study focused on faculty’s understanding of diversity there are so many ways people understand diversity which is a reflection of their experience. To embrace diversity is to appreciate another’s experience without funneling it through our personal lens.

STEM environments are characterized as exclusive, isolating and competitive (Xu, 2007) but STEM disciplines also have power in our culture to change the world (Blackwell, et al., 2009). Therefore, diversity can be accomplished because discipline wise it is already diverse and touched the world. Now it is time for diversity to touch us individually by valuing each individual for what they have to offer which is something we all have to offer, uniqueness.
REFERENCES


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APPENDIX A

LETTER/EMAIL SENT TO DEAN AND DEPARTMENT FOR FACULTY NOMINATIONS

Email and letter that will go out to the Deans and Department Heads and it will be titled Study on Perceptions of Diversity

Greetings:
My name is Thomas R. Easley and I am a doctoral candidate in Adult Education and Continuing Education in the College of Education at North Carolina State University. I am conducting a study for my research. The title of my research is STEM faculty perceptions on Matters of Diversity. I want to understand how Science Technology Engineering and Mathematics (STEM) faculty understand and engage diversity during their day to day work routines.

I am requesting that you please identify two tenured (associate and/or full) faculty members in your college/department that you think might be interested in participating in a study on diversity. If they participate in programs that address various diversity issues around race, gender, age, gender orientation, and sexual orientation then I would like to interview them.

This study will require two face to face interviews and both interviews should go from one to two hours. The participants may be asked to be observed while engaging in day to day work activities to add more to the data collection. Observations will help with viewing how faculty engage in diversity. Each interview will be transcribed and given to the participant for their input before it is used in the research study. Your college/department will remain anonymous in the results of this study. This study has already successfully gone through the Institutional Review Board (IRB).

Your response is greatly appreciated and I hope that you will assist me in this research endeavor. If you have any questions please contact me at Thomas_easley@ncsu.edu or 919-513-0534.

Warmest Regards,

Thomas R. Easley
Greetings:

My name is Thomas R. Easley and I am a doctoral candidate in Adult Education and Continuing Education in the College of Education at North Carolina State University. I am conducting a study on STEM faculty perceptions of Matters of Diversity. I want to understand how Science Technology Engineering and Mathematics (STEM) faculty understand and engage diversity during their day to day work routines.

Are you willing to participate in this study on diversity? I would like to invite you to two face to face interviews and ask questions about how you engage in matters of diversity. When we meet please indicate if you would be willing to let me observe you for a day in your work environment. Your participation is this part of the research will help with understanding how you engage more in diversity in your daily work activities. The interviews should last one to two hours. The research question guiding this study is:

How do STEM tenured faculty members understand and engage diversity in routine day to day duties?

You will be asked open ended questions reflecting these research questions. Your participation will remain anonymous. You will be given an alias to conceal your identity, plus your college and department will not be identified. We can meet at your leisure and where you feel most comfortable speaking about this topic. You will receive a copy of the transcript and be able to address any inadequacies. Participants’ time in this study will only be between 2-4 weeks. Should you feel uncomfortable in any part of this study you may withdraw at any time. Your participation will not only help conclude my study, but it will help contribute to literatures dealing with diversity issues and other higher education literature. I hope that you will participate in this study and I look forward to hearing from you soon.

Warmest Regards,

Thomas R. Easley
An Informed Consent Statement has two purposes: (1) to provide adequate information to potential research subjects to make an informed choice as to their participation in a study, and (2) to document their decision to participate. In order to make an informed choice, potential subjects must understand the study, how they are involved in the study, what sort of risks it poses to them and who they can contact if a problem arises (see informed consent checklist for a full listing of required elements of consent). Please note that the language used to describe these factors must be understandable to all potential subjects, which typically means an eighth grade reading level. The informed consent form is to be read and signed by each subject who participates in the study before they begin participation in the study. A duplicate copy is to be provided to each subject.

If subjects are minors (i.e. any subject under the age of 18) use the following guidelines for obtaining consent:

0-5 years old – requires signature of parent(s)/guardian/legal representative
6 – 10 years old - requires signature of parent(s)/guardian/legal representative and verbal assent from the minor. In this case a minor assent script should be prepared and submitted along with a parental consent form.
11 - 17 years old - requires signature of both minor and parent/guardian/legal representative

If the subject or legal representative is unable to read and/or understand the written consent form, it must be verbally presented in an understandable manner and witnessed (with signature of witness). If there is a good chance that your intended subjects will not be able to read and/or understand a written consent form, please contact the IRB office 919-515-4514 for further instructions.

*For your convenience, attached find a sample consent form template that contains necessary information. In generating a form for a specific project, the principal investigator should complete the underlined areas of the form and replicate all of the text that is not underlined, except for the compensation section where you should select the appropriate text to be used out of several different scenarios.

*This consent form template can also be adapted and used as an information sheet for subjects when signed informed consent is waived by the IRB. An information sheet is usually required even when signed informed consent is waived. The information sheet should
typically include all of the elements included below minus the subject signature line; however it may be modified in consultation with the IRB.
North Carolina State University

INFORMED CONSENT FORM for RESEARCH

Title of Study: STEM Faculty Perceptions of Matters of Diversity

Principal Investigator Thomas R. Easley Faculty
Sponsor (if applicable) Dr. Susan Bracken

What are some general things you should know about research studies?

You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. The purpose of research studies is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above.

What is the purpose of this study?

The purpose of this study is to gain understanding on how faculty in STEM disciplines understand diversity issues. This study will help inform the literature on how STEM faculty experience diversity issues in the workplace and how faculty engage in diversity issues in the workplace.

What will happen if you take part in the study?

If you agree to participate in this study, you will sign a consent form. Next, interview dates will be designated. Then you will be asked to be interviewed in twice. Both interviews will span between one to two hours. You will be asked to fill out a profile sheet after the first interview. This sheet will provide the researcher with information on your background (age, gender, ethnicity and discipline). After transcriptions of the interviews are done, you will be asked to look back over them to ensure your responses were recorded and transcribed accurately. Your participation in this study should only be between four to eight weeks. This includes interviews, transcriptions and your input on the final transcriptions. The interview can be done at a place of your choosing (office, other campus location, or a designated off campus site).
Risks

Since you are providing information about your perception of diversity issues based on your experience the interview could get uncomfortable depending on the nature of the information you provide. You may choose to withdraw from the study at any time. The information provided will identify parts of your identity (race, gender, general study area). If others read this study there may be some general familiarity with you, but specific identifiers will not appear. Aliases will be provided not only for your, but also the college and institution.

Benefits

This study will help inform others in higher education about STEM faculty experiences to diversity issues. In addition, the findings from this study will provide insight to how faculty understand their roles in diversity issues. We hope this study will inform other disciplines and institutions on perceptions and potentially serve a resource to help guide in developing policies and practices to addressing diversity. List the benefits you anticipate will be achieved from this research, either to the subjects, others, or the body of knowledge. If there is no direct benefit expected to the subject, but knowledge may be gained that could help others, state this.

Confidentiality

The information in the study records will be kept confidential to the full extent allowed by law. Data will be stored securely in state measures taken to protect the security of data. No reference will be made in oral or written reports which could link you to the study. You will NOT be asked to write your name on any study materials so that no one can match your identity to the answers that you provide.

Compensation

You will not receive anything for participating.

What if you have questions about this study?

If you have questions at any time about the study or the procedures, you may contact the researcher, Thomas R. Easley, at 2601 Valley Haven Drive, Raleigh, NC 27603 or 919-607-6150.

What if you have questions about your rights as a research participant?

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may
contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514).
Consent To Participate

“I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled.”

Subject's signature__________________________________ Date _________________

Investigator's signature______________________________ Date _________________
APPENDIX E

1st SESSION INTERVIEW QUESTIONS

**Purpose**: The purpose of the research is to highlight how tenured faculty members within the STEM disciplines understand and engage diversity as reflected through their day to day work duties.

**Opening** Thank you for meeting with me. I’m going to work not to keep this interview too long.
1) Tell me how you became a faculty member.
2) What are some of the most interesting things you enjoy about being a faculty member?
3) Please describe for me a common day (including day to day routine) for you as a faculty member. What’s a typical week look like?
4) Is diversity important to you as a faculty member? Can you explain?

5) Please share an example when you noticed something diversity related was happening. How was it addressed? Did you ignore it or address it?

**Intellectual Exchange and Collaboration**
6) As a faculty member how does diversity influence how you engage in research?
7) What kind of research projects are you involved in? In what ways is diversity reflected in that work (If at all)?

8) What do you teach? In what ways does diversity come up?

9) What kind of service are you involved in? What kind of diversity issues manifest themselves in your service?

10) How has the way you handled diversity issues with colleagues in your department changed over the course of your career?

**Decision Making Processes**

11) Tell me about decision making processes you participate in? For example, committees, admissions, tenure promotion

12) How did these experiences influence your perception of diversity?

13) How does your perception of diversity influence how you handle situations.

14) Please tell me about a time that you felt you handled a tricky diversity issue or situation especially well?
15) Tell me about a time you handled it poorly
16) Tell me about a time you avoided it

**Mentoring Relationships**

17) How have your perceptions influenced your participation in mentoring relationships (Mentor-mentee or mentee-mentor)?

18) Any other experiences that influence your perception?
19) If there is anything I didn’t ask related to the topic of diversity that you would like to talk about?
APPENDIX F

2nd SESSION INTERVIEW QUESTIONS

**Purpose**: The purpose of the research is highlight how faculty members who have been successful (tenured) within the STEM disciplines understand and engage diversity during their day to day work duties.

**Opening** Thank you for meeting with me. I’m going to work not to keep this interview too long.
The last interview we focused on your perception now I want to focus on how you engage in your role.

**Mentoring Relationships**

1) When it comes to matters of diversity who do you talk to for guidance on how to handle it?
2) Are you a person that colleagues come to for guidance on discussing matters of diversity?
3) In your professional mentoring does the subject of diversity come up? How?

**Social Activities**

4) What work sponsored social activities do you participate in?
5) How do you think diversity is reflected in them? What have you noticed regarding diversity?
6) How do you decide whether or not to participate in a departmental or college social activity?
7) As a tenured faculty member how do you think diversity is valued in your workplace?
8) How does being a tenured influence how you act when you see diversity issues unfolding?
9) If there is anything I didn’t ask related to the topic of diversity that you would like to talk about?