A Phenomenological Investigation of Academic Momism: Perceptions of Female College Faculty’s Role Expectations in High-Stakes STEM Courses

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A Phenomenological Investigation of Academic Momism:
Perceptions of Female College Faculty’s Role Expectations in High-Stakes STEM Courses

by
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A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree

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SCHOOL OF EDUCATION AND HUMAN SERVICES

The dissertation of Donna Cempa-Danziger entitled: “A Phenomenological Investigation of Academic Manism: Perceptions of Female Faculty’s Role Expectations in High Stakes STEM Courses” in partial fulfillment of the requirements for the degree of Doctor of Education in the School of Education and Human Services has been read and approved by the Committee:

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Abstract

This qualitative phenomenological study looked at how female faculty in higher education who teach high-stakes courses may experience a role of academic momism (AM) and how they negotiate their roles and responses within a patriarchal system. Gender bias and prescriptive stereotyping of women as communal may lead female STEM instructors to be perceived more as “academic mothers” (Bernard, 1964) rather than respected academicians. Within higher education institutions, students often perceive their female professors as more concerned about their emotional well-being, nurturing, service oriented, and less academic when compared to male faculty members. The demanding nature of high-stakes courses in STEM-oriented programs within higher education can increase student demands. This has been further exacerbated by the COVID-19 pandemic. The culminations of these oppressive factors may play a role in female STEM faculty’s career path, thus affecting their presence in academia.

Interviews were conducted with 15 female participants teaching at community, state, and private colleges in Northeast metropolitan and suburban areas. Themes included systemic stereotyping, teacher-student interactions, and instructor self-actualization. A notable finding included the lack of sisterhood between female faculty members within the same department and with those who hold a higher position. This study adds important findings of female STEM faculty experiences of student–teacher relationships, gender bias, role expectations, the changes brought about due to the COVID-19 pandemic, and more specifically, their experiences of AM.

Keywords: female STEM faculty, academic momism, patriarchy, gender bias
Dedication

For Ariella and Bethany, for being my cheerleaders and fans. You are my greatest source of love and pride.

For Bruce, for being my editor, supporter, and for not allowing me to give up.

This paper is dedicated in loving memory to my father, Thomas M. Cempa.
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The dissertation process is a long, sometimes grueling, and one not traveled alone. Were it not for the support, and sometimes sacrifices, of the following people, I would not have reached my goal of earning my Ed.D.

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Chapter 1

Introduction

“It’s about time they hired another woman.”

- Spoken to me by a female faculty member upon hearing I was hired for a full-time faculty position.

The following statistics show the breakdown of U.S. college teaching positions in 2020: full professors: 67% male, 33% female; associate professors: 54% male, 46% female; assistant professors: 49% male, 51% female; and other faculty: 43% male, 57% female (“Fast Facts: Race/Ethnicity,” 2022). These numbers suggest a discrepancy in the proportion of tenure track female faculty compared to male faculty in higher level teaching positions within colleges and universities. The data also show there is a greater percentage of females holding lower-level teaching positions. A diminished female-to-male presence in higher education can lead to a dampening of female perspectives in the curriculum and maintenance of a gender imbalance.

There appears to be stereotype bias against female faculty, as indicated by a nominal rise in the percentage of females holding positions in colleges across the United States (Treviño et al., 2017). The patriarchal ideology of male dominance within higher educational settings has led to differential treatment, expectations, and perceptions of female faculty promoting bias by both the academic institutions as well as students. Female faculty tend to be employed in lower-tier universities; perform more acts of service; and teach more undergraduate, introductory courses than male faculty (Burke et al., 2017; O’Meara et al., 2017). Also, female faculty tend to earn $0.81 for every dollar earned by male faculty (2023 gender pay gap report, n.d.).
A continuation of stereotypes and gendered expectations of a woman’s role also influence student perceptions of their female faculty. Students perceive and expect their female faculty to be warm, nurturing, compassionate, approachable, and comforting, with male faculty perceived as knowledgeable and authoritative (Anderson, 2010; Basow, 2000; Bennett, 1982; Piatak & Mohr, 2019). Female faculty are seen by students as “teachers” and males as “professors” (Burke et al., 2017). In the context of the high-stakes science, technology, engineering, and mathematics (STEM) courses, student perceptions include the higher incidence of demanding expectations of female faculty teaching high-stakes courses such as anatomy and physiology (McCuskey et al., 2005; Sturges & Maurer, 2013).

Female STEM faculty may experience their classroom roles differently than male faculty due to stereotypes and gendered expectations held by institutions and students. Institutional course offerings and increased service work expectations of female STEM faculty may differ from that of male STEM faculty. Student expectations of female STEM faculty may be more emotional and supportive than their expectations of male faculty. These differing role expectations, which stem from the belief that women should be nurturing, may leave female STEM faculty having perceptions of acting more like an academic mother than a respected academician. This role expectation is referred to as “academic momism” (Bernard, 1964).

Academic momism (AM) refers to student expectations of female faculty to be more patient, lenient, nurturing, and more emotionally supportive, thus acting more like a mother (Bernard, 1964, p. 131). Female faculty may position themselves in “expressive-emotional roles” (Bernard, 1964, p. 143), thereby perpetuating student stereotypical perceptions. Some female faculty may question their role as an “academic mother” with the feeling that too much support may impede student academic goals. Ruzich (1995) stated that teachers will either identify with...
the role of “academic mother” or avoid it. Although this AM theory is over 60 years old and female faculty roles have evolved over time, female faculty still experience gender stereotyping and expectations of more nurturing behaviors from the institutions as well as from students. One goal of this study is to examine whether or not female STEM faculty embrace the mothering role and their reasons for such positions.

AM has been used in numerous studies exploring student perceptions of female faculty (El-Alayli et al., 2018; Pease, 1993; Rubin, 1981; Takiff et al., 2001). Prior studies examined the reasoning behind the differences in terms of address for male and female faculty as well as the expectations that female faculty should display stereotypical feminine characteristics such as warmth and sensitivity (Rubin, 1981; Takiff et al., 2001). Student perceptions of females as being more nurturing lead to an increased emotional workload on female faculty (El-Alayli et al., 2018). In the role of an academic mother, female faculty may have to work twice as hard to appear competent while evoking expected warmth for students. The phenomenon of AM can be one of the contributing factors affecting female STEM faculty members’ career trajectory.

The expectation by students of female faculty to act as their “academic moms” and provide emotional support may increase faculty academic and emotional workload (El-Alayli et al., 2018). Students expect their female faculty to possess nurturing and empathetic qualities while also being knowledgeable, yet consistently rate male faculty higher in this attribute regardless of female faculty degree attainment. In addition, despite knowledge base and availability for student support, female faculty are still rated lower than male colleagues in these areas solely based on gender (Basow, 2000; Basow & Silberg, 1987). This creates a double-bind for female faculty in that they may never be able to attain the same respect and ratings as males despite their increased workload (Bachen et al., 1999). These factors may lead to workplace
burnout and explain a lower presence of female faculty in higher positions at colleges and universities.

Having taught at three types of colleges (private, state, and community) for the past 15 years, I have noticed a low number of female full-time science faculty in higher education programs. From my experience, students also approached me, as a female faculty member, in a different fashion than my male counterparts. For example, students would address me by my first name or “Mrs.” instead of “Professor” while my male colleagues do not report being addressed by their first name unless permitting students to do so. In addition, students seem to approach me more to complain about other faculty, ask for curricular changes, and ask for “life coaching” (which is also a rare occurrence among my male colleagues). These experiences led me to feel more like their “academic mom” and question my role as a female educator.

The focus of my dissertation study was to investigate the lived experiences of female faculty in STEM programs as “academic mothers” (Bernard, 1964). I examined whether the frameworks of the stereotype content model (SCM; Fiske et al., 2002) and feminist oppression characterized the biased treatment of female STEM faculty by students and universities as an organization, thus leading to experiences as academic mothers. Feminist standpoint theory (FST) enabled me to fully describe their experiences of oppression through hegemonic practices as well as patriarchal role repositioning by other women. I looked at the participants’ lived experiences of the AM phenomenon by exploring their perceptions of emotional and academic workload, as well as interpersonal relationships with students as it related to the SCM. This exploration in conjunction with more recent terminology led to the development of a new definition of AM to include socioemotional support based on current cognitive studies. I also delved into how the COVID-19 pandemic exacerbated or diminished female STEM faculty’s experiences of AM. My
goal was to make sense of AM perceptions of female STEM faculty’s classroom role as an influence on their career trajectory and if they will likely remain in academia. Information gathered in this study is significant in that it provided a window into female STEM faculty’s experiences of AM and possible explanation as to why there is a lower full-time female presence in science departments in higher education.

**Chapter Overview**

This chapter provides an overview of the lack of female presence in academia, particularly in STEM courses of study and the factors that may influence this deficit. The following sections (a) outline the statement of the problem, (b) purpose, (c) significance of this study, and (d) the theoretical framework. Next, I feature the (e) research questions, (f) methodology, and (g) design. I also (h) discuss the study’s limitations and delimitations followed by (i) a glossary of terminology used throughout this study. The final section of this chapter is (j) a summary and overview of chapters two through five.

**Statement of the Problem**

Female faculty in higher education encounter many more hurdles than male faculty and are subject to different expectations of behavior and work ethic by both students and the institution (Anderson, 2010; Anderson & Miller, 1997; Bachen et al., 1999). This may lead to increased workload and student demands of female faculty, especially those in STEM courses of study, which include high-stakes courses. Female STEM faculty perceptions of their classroom role may lead them to feel more like they are mothering their students through increased emotional and academic support as well as caring for their institution through acts of service, thereby leading to their experiences of AM (Allen, 1998; Treviño et al., 2017). These experiences, which are perpetuated by patriarchal attitudes, may alter their career path and
provide a possible explanation for a lower presence of female faculty in tenured or leadership positions in higher education, thus warranting investigation.

Women are expected to behave in a warm, nurturing, and empathetic manner (Basow & Silberg, 1987; Cuddy et al., 2004; El-Alayli et al., 2018), leading students to believe that female faculty should be more invested in their emotional well-being. Such gender stereotypes impact student beliefs, leading some students to seek out stronger interpersonal relationships with female faculty as opposed to male faculty (Basow & Silberg, 1987; Bennett, 1982). In addition, students may have unrealistic expectations of female faculty acquiescing to their classroom demands. These demands may include changing exam dates, immediate faculty responses to emails, and altering of course syllabi to meet their needs (Lippman et al., 2009). Such pressure may lead to female faculty feeling more like “academic moms” than educators. Coined by Bernard (1964, p. 131), academic momism refers to the students’ perception of female faculty as being nurturing and like mothers. Students perceives male faculty as competent and agentic in such gendered stereotyping. This study examines female faculty's perceptions of their classroom role through the phenomenon of AM.

**Theoretical Frameworks**

While the overarching framework work of this study is feminist oppression, the frameworks of FST (Hartsock, 1983) and SCM (Cuddy et al., 2008) were used to understand the foundations and experiences of AM. FST examines how women’s viewpoints are socially constructed by focusing on the experiences and viewpoints of marginalized and oppressed groups. Theorized through the works of Smith (1979), Hartsock (1983), Hill Collins (1990), and others, FST can be used to question the experiences of women as subordinates in a patriarchal establishment and questions hegemonic principles (Harding, 2004). FST recognizes there is no
universal truth to certain women’s experiences since the lives of women are so diverse. The use of FST enabled me to examine how female STEM faculty experience AM as they navigate through oppression promoted within patriarchal institutions.

Within SCM, males are viewed as being cold and self-directed while females are expected to possess warmth and nurturance. Deviations from these expected roles may lead to negative perceptions of individuals who do not adhere to these behaviors (Bennett, 1982). Institutions and students may view females in academia who act as leaders adversely since there is a societal expectation that females should be caring and act as homemakers. Institutions may still hold onto the notion that women may not be as dedicated to their career path since they are caring for their families and may be less inclined to promote them or grant tenure. This could provide one possible explanation for the lowered presence of females in higher level teaching positions.

The SCM proposes two dimensions to stereotypes: warmth/nurturance and competence/agency (Cuddy et al., 2009; Fiske et al., 2002). These dimensions have opposing characteristics. Social stereotyping perceives people who are seen as warm as not being competent, while viewing those who are competent as not being warm. Using women as an example, those who fit the mold of the traditional homemaker and are more communal or warm are more likable according to societal perceptions. There is a less likable view of women who conform to more agentic roles and are career-oriented or non-traditional. Students may unconsciously hold such beliefs, explaining why some students will rate female professors lower than males if they appear less communal. Female faculty may thereby perceive increased pressure and workload to meet student expectations. The use of SCM was used to examine
student expectations of female faculty behavior and the faculty’s ensuing perceptions of their classroom role, which allowed me to examine female STEM college faculty more deeply.

**Purpose and Significance of the Study**

The purpose of this qualitative dissertation study was to examine how female faculty teaching in high-stakes STEM courses experience AM and how they negotiate their roles and responses within patriarchal expectations. This dissertation study focused on the faculty’s lived experiences (Bogdan & Biklen, 1998) of student–teacher relationships, gender bias, role expectations, the changes brought about due to the COVID-19 pandemic, and (more specifically) their experiences of AM. Data collected from this dissertation study examined how female STEM faculty make sense of their role as academic mothers to understand how AM may or may not affect their career trajectory and offer a possible explanation for a diminished female STEM faculty presence in academia.

**Research Questions**

This phenomenological investigation examined how female faculty teaching high-stakes STEM programs in higher education may experience AM and how they negotiate their positioning within a patriarchal system.

1. How do female STEM faculty describe their lived experience of AM in high-stakes courses?

1a. In what ways, if at all, does the framework of SCM shed light on the experiences of AM among female STEM faculty?

1b. How do female STEM faculty work with and against the system of patriarchy and the patriarchal expectations of who they are?

2. How do female STEM faculty see AM as contributing positively and negatively to their career trajectory?
(2a) How do they negotiate their roles and positioning as AM in relation to their career aspirations?

**Research Methods and Design**

This qualitative study was a phenomenological investigation with an in-depth exploration of female faculty’s perceived roles in the classroom of STEM courses at Northeastern metropolitan and suburban colleges. A phenomenological study is the “theoretical point of view advocating the study of individuals experiences because human behavior is determined by the phenomenon of experience, rather than objective, physically described reality external to the individual” (Sloan & Bowe, 2014, p. 2). Phenomenological studies gain meaning from the written or spoken word (van Manen, 2014) to gain understanding of a phenomenon as the participants are experiencing it.

This phenomenological approach requires the researcher to be open and sensitive to the experiences of the AM phenomenon. Past arguments on phenomenological studies state that to conduct a descriptive phenomenological study, researcher assumptions about the phenomenon need to be put aside or bracketed, which may not be possible (Dowling & Cooney, 2012). Other researchers state that assumptions are part of our understanding and allow us to build upon questioning as a way to explain what something means (Sundler et al., 2019). This study used phenomenology of practice, which is based on seminal as well as evolving phenomenological works. Phenomenology of practice allows me to use my personal understanding of the AM phenomenon to frame more detailed interview questions and elicit more detail from the participants.

The phenomenon in this study will be AM. To fully present the essence of female STEM faculty experiences of AM, the study uses phenomenology of practice (van Manen, 2014). This
approach incorporates the established phenomenological methods of Husserler (Transcendental) and Hermeneutical (Interpretive) as well as currently developing theories of phenomenology. Specifically, phenomenology of practice looks to explain the meanings of everyday experiences and what role they play in our lives (van Manen, 2014). This study looked for the meaning of AM in the lives of female STEM faculty with key component of reflexivity. Reflexivity involves the questioning of data and themes, with the data sometimes being different from what the researcher understands and added to the validity of the study (van Manen, 2014). Through reflexivity, I was able to acknowledge my role in this study as an insider, which contributed “to the construction of meanings and of lived experiences throughout the research process” (Palaganas et al., 2017, p. 427). Validity was achieved by assuring accuracy of the results through detailed descriptions of participants’ experiences, authenticity as reflected in different voices and perspectives of participants on the topic investigated, and integrity of the researcher being reflective and self-critical of any potential biases.

For this study, I applied a social constructivists lens, which states that “individuals develop subjective meanings of their experiences” (Creswell & Creswell, 2018, p. 8) and that there are multiple meanings to every experience. The participants in this study created their own sense and meaning of AM. My role as the researcher positioned me as a “passionate participant” (Guba & Lincoln, 1994, p. 112), where I interacted with the study’s participants and revised learned knowledge as it developed. I became a passionate participant through engagement, listening, and probing in an attempt to obtain deeper answers of the lived experiences of AM by the study’s participants.
Context, Settings, and Participants

Data collection for this study involved participants teaching at various private, state, and community colleges in a Northeast metropolitan and suburban area. These locations were chosen through snowball participant sampling. These locations have a disproportionate number of full-time versus part-time faculty. Each of these locations offers STEM programs, making them a valid choice to examine female STEM faculty. Participants, specifically female STEM faculty, were selected through a snowball sampling from higher education institutions. The selection criteria of participants were based on several factors: (a) being a female college faculty member, (b) having taught in a STEM course for at least one year as a full-time faculty or two years as an adjunct, and (c) being a faculty member for that current semester. These factors permitted me to examine a variety of perspectives on the phenomenon.

Data Collection and Analysis Procedures

Data collection involved two 60-minute interviews plus an optional focus group interview conducted approximately 2 to 3 weeks apart. The interviews followed a protocol suggested by Seidman (2006) with some deviations. Seidman suggested three 90-minute interviews within a week due to the rationale of keeping participants’ connection with the phenomenon and recollections between the interviews. I modified Seidman’s scheduling protocols by conducting two 60-minute interviews rather than 90-minute interviews. This was due to a time constraint for participants given the extenuating circumstances of the COVID-19 pandemic, which led some courses to be conducted remotely and others face-to-face, as well as faculty teaching at multiple schools.

The interview process began after IRB approval. Participants were collected from three institution sites—public, private, and community—through a snowball sampling process in
which enrolled participants recruited others to become part of the study. The criteria were based on gender (female only), faculty status, years of experience, and teachers of high-stakes STEM courses, as well as identification as an academic mother. The participants signed a study permission consent form. The interviews were conducted via Zoom meetings due to social-distancing constraints. The questions were open-ended to allow the participants to fully express their lived experience of their classroom role, enabling me to delve deeper into participant perceptions of AM.

Interview one, the focused life history, acted as an ice breaker and introduction. This interview served as a baseline for exploring whether faculty perceptions changed throughout the semester and examined how female STEM faculty described their lived experience of AM as female educators of high-stakes college courses. The second interview was conducted halfway through the semester and focused on the concrete details of the participants’ experiences of AM. The goal of the second interview was to get a sense of female STEM faculty’s current status and role perceptions. The concept of academic momism was examined in this interview. Another goal of the second interview was to understand the development of student–faculty relationships as they occurred and how COVID-19 and the transition to remote learning have affected both relationships and faculty perceptions of AM. The focus group interview summarizes the participants’ experiences over the semester and reflect their sense and meaning of AM. It also looked into mechanisms used to overcome patriarchal oppression and recommendations for other female STEM faculty members. As the participants reflected, I asked how they make sense of their role as academic mothers; how gendered stereotyping describes and relates to their experience; and the effects this had on their emotional workload, job satisfaction, and impact on their career.
Throughout the interview process, I transcribed data using a secure transcription application, *Trint.com*. I manually double-checked the transcriptions. I added notes to the transcriptions based on my detailed field notes. I also looked for patterns throughout the transcriptions. I repeated this process several times until I no longer found patterns. The transcriptions were then uploaded to the *Dedoose* online coding application in search of themes. I focused on AM, SCM, workload, and perceptions.

**Trustworthiness.** Several measures were used to ensure trustworthiness. This included member-checking to ensure the accuracy of reported experiences. As I reviewed the transcripts, I developed codes (Creswell & Creswell, 2018). The coded materials were then collapsed into categories and emerging themes. To further ensure trustworthiness, I presented all of the interview data, both positive and negative, and acknowledged my own bias in the research. I was reflexive in my analysis of the findings. Being an insider for this study required the need to double-check my findings with the participants. I confirmed that their perceptions and experiences as they experienced them, not through my bias, were being thoroughly presented.

**Limitations**

Limitations of this study included the reliance on participant memories. Over time, perceptions may have changed. Memories can also be biased and may reflect a snapshot of a moment in time. The participant stories may not be fully truthful or may differ if told to another interviewer (Seidman, 2006). Participants may have had differing perceptions of what constitutes emotional workload. A major limitation was the lockdown due to the COVID-19 virus. The move to online teaching dramatically altered faculty–student relations and may have affected student reliance on faculty for support. This may have changed female faculty perceptions of their role when compared to face-to-face teaching. Although I was reflexive and member
checked, my own bias may have been a limiting factor due to my preconceived views of AM and workload.

**Significance of the Study**

Many studies examine student perceptions of teachers (Basow et al., 2006; MacNell et al., 2015). These investigations examine student perceptions of males being more competent (Basow & Silberg, 1987), student expectations based on gender (Anderson & Miller, 1997), and student evaluations of faculty being gender-biased toward males. In each of these studies, there is a bias against female faculty. Other research has examined faculty perceptions of their students (Carabajal & Hughes, 2016; Miller & Chamberlin, 2000; Wilson, 2008). Few studies examine faculty perceptions of their role (Özgüngör, 2013). Most of the faculty–student studies are quantitative and do not focus on high-stakes programs of study. I filled this void by conducting a qualitative examination of gendered experiences of STEM faculty. The use of feminism, FST, and SCM enabled me to fully present female STEM faculty’s experiences of AM and gender bias.

The main benefit of this study was to gain a deeper understanding of female STEM faculty perceptions of their roles. While there has been progress in closing the higher education job gender gap, it still exists. Male faculty are still perceived as competent and tend to obtain higher-level positions; female faculty are thus academic mothers who are viewed as warm and nurturing (Baker, 2016; El-Alayli et al., 2018). This perception of female faculty may lead to increased emotional workload and job dissatisfaction. It is important to gain an understanding of the phenomenon of AM to better comprehend what leads to such feelings and how faculty may address them.
**Definition of Terms**

**Academic momism**: Students expect female faculty to be more patient, lenient, nurturing, and provide more emotional support, thus acting more like a mother (Bernard, 1964). These student beliefs are due to the gendered expectations of students that female faculty will be more concerned about their emotional well-being than male faculty.

**Agentic**: The characteristics are assertiveness, independence, and self-reliance. Those with agentic traits tend to take on leadership roles. Society expects males to exhibit agentic traits (Eagly et al., 1992).

**Communal**: Most associated with females, communal traits include empathy and sensitivity and concern for others’ well-being (Eagly et al., 2002).

**Emotional Workload**: This is experienced by faculty as they mentor, engage, manage, and motivate student learning while keeping their own emotions neutral (Miller et al., 2019).

**Expressive**: Traits include nurturing, caring and being empathetic and communal (Basow et al., 2006). These characteristics are most associated with female behaviors. Society sees females as being more concerned with family and domestics.

**Gender**: A cultural and social construct (Heller, 2019), gender is based on societal perceptions of how individuals should act and take on roles in society (Ellemers, 2018). This differs from one’s sex, which is biological and based on one’s anatomy.

**Instrumental**: This is associated with the expected agentic male characteristics of assertion, independence, self-reliance, and risk taking (Spence & Buckner, 2000). Society expects males in this role to be authoritative and take on leadership positions.

**Hermeneutical Phenomenology**: Phenomenological studies are based on the premise that each person’s perception of an experience is different and unique. In hermeneutical phenomenology,
the researcher is interested in the “lived experiences” of the participants (Bogdan & Biklen, 1997).

**Phenomenology of Practice**: Posited by van Manen (2014), this incorporates both seminal and unfolding works of phenomenology and bisects the traditional methods of Husserl and Hermeneutic phenomenologies.

**Stereotype**: Fixed, generalized beliefs about groups of people (McLeod, 2017). This study focuses on gendered stereotypes in which society expects women to conform to feminine roles of warmth and being a homemaker.

**Stereotype Content Theory**: Posited by Fiske et al. (2002), this theory suggests that people’s exhibited traits are either “warmth (trustworthy and social) or competence (capable, agentic)” (Fiske, 2018, p. 67). Society most often bases these stereotypes on socioeconomic status and age.

**Conclusion**

This chapter presented an overview of the dissertation, including the problem, purpose, and significance of the study. In addition, I have presented the theoretical frameworks, research questions, design methodology, summary of findings, and limitations of the study. This chapter concluded with definitions of the terminology relevant to this study.

Chapter 2 provides an in-depth exploration of the theoretical frameworks used in this study. There is a deeper examination of the use of AM and its influence on female STEM faculty perceptions of their classroom role and how it may lead to increased workload. The role played by students’ perceived stereotypes of females and their influence on student–faculty relationships will be examined through the framework of stereotype content theory. Chapter 3 is a presentation of the method. This includes my worldview of social constructivism, the study’s qualitative phenomenology design, the participants and setting, data collection and analysis procedures,
ethical considerations, and design limitations. Chapter 4 presents my data-analysis procedure. In this chapter, I explain the coding process and analysis, including the development of themes and use of Dedoose. I also elaborate on how I interpreted the themes and used them to answer my research questions. Chapter 5 presents the summary of my study, including a discussion of how my findings relate to the literature and fill a gap, any unexpected findings, and the conclusions.
Chapter 2

Literature Review

Despite an increased presence of females in academia, there is still a disparity between females and males holding tenured, full-professor positions (Hart, 2016; O’Connor, 2019). The skewed numbers favoring males in professor and leadership roles has historically existed, with changes in female involvement occurring based on societal expectations (Parker, 2015). This discrepancy in male-to-female faculty ratio is more apparent in STEM-related programs of study than in liberal arts programs (Begeny et al., 2020; Kahn & Ginther, 2017; LaCosse et al., 2016).

Gendered bias on the part of male-dominated universities, as well as by students, may influence classroom role perceptions of female faculty. Promoted through the patriarchal ideology of male dominance in the higher education institutions, this bias may situate female faculty into a more nurturing and service-performing role versus male faculty, who possess a more academic role. Female faculty may be viewed as less capable than male faculty, thus receiving more introductory than higher level courses to teach. Female faculty are also positioned as caring more about family and domestic issues and thereby may be more likely to be overlooked by administration for promotions. Students may view female faculty as approachable and more caring than male faculty. Female faculty may be expected to worry more about students’ emotional needs as well as be more willing to cave to their demands due to this perception of female faculty as nurturing. Female STEM faculty can be more at risk for student expectations due to the high stakes of coursework within these programs. The additional stresses brought on by the COVID-19 pandemic may compound feelings of AM through increased students’ need for academic and emotional support (Apperibai et al., 2020; Kozimor, 2020).
These perceptions may leave female faculty feeling that their role is more like an academic mother, rather than respected academicians (Bernard, 1964). Female faculty have traditionally been restricted from roles in academia due to societal expectations of women as homemakers. The general hegemonic view was that women did not need to earn an education, let alone hold professional or administrative roles in higher education, due to a lack of career orientation. Patriarchal attitudes limited the role of women to childbearing and rearing as well as household domestic care, such as cooking, cleaning, and laundry (Parker, 2015). Women obtained leadership positions in academia during the mid to late 1800s but were expected to embody feminine characteristics or face disapproval for agentic behavior (Bernard, 1964). Despite advances brought about by the feminist movement, women in academia today are still subject to similar discrimination and expectations as seen in the 1800s due to continued gendered perceptions and stereotypes.

**Perceptions of Female Faculty**

Patriarchy is the system of male domination over women. The gendered roles of women as nurturing and men as powerful are preserved within this social construct (Dlamni & Adams, 2014). These beliefs ignore the abilities, qualifications, and potential of women, and may prevent their career advancement. There are several factors that influence the career path of female faculty in academia as perpetuated by patriarchal attitudes. These factors include students’ beliefs and expectations of female faculty behavior, gender bias, stereotyping as promoted by institutions, as well as course program types (e.g., STEM).

**Students**

Studies show that despite advances against gender stereotyping, there are still deferential expectations of male and female faculty (Bachen et al., 1999; El-Alayli et al., 2018; Mengel et
al., 2019). Student perceptions of how a female faculty member should teach and behave may lead to altered student–teacher interpersonal relationships, thus increasing female faculty’s emotional as well as academic workload. Female faculty must work twice as hard as men to prove their capability yet still may receive poor reviews by students (Bennett, 1982). Students expect female faculty to be more lenient graders, alter the syllabus based on student demands, and have extensive office hours (El-Alayli, et al., 2018; Lippman et al., 2009). Female faculty, as opposed to male faculty, are expected to grant special favors to students and cave to expressive behaviors such as crying (Kopp & Finney, 2013). Students expect female faculty to address their socio-emotional needs (Carabajal & Hughes, 2016; El-Alayli et al., 2018). Increases in academic entitlement, in which students believe they deserve high grades and special treatment without warrant, is another recent concern for female faculty (Chowning & Campbell, 2009; Luckett et al., 2017), with entitled students attempting to coerce female faculty, using threats and bullying, more often than male faculty (Knepp, 2012). Student gender bias based on what they perceive a female faculty member should be like may affect student evaluations by favoring male faculty (Bachen et al., 1999). These perceptions reinforce the notion that students hold female faculty to differing standards than male faculty.

**Gender Bias, Stereotyping and Women’s Perceived Roles**

There are a number of possible explanations for the lack of female presence in higher level positions at universities, many of which have their foundation in stereotype-driven gender bias (Treviño et al., 2017). Gender stereotyping includes the positioning of women as empathetic, nurturing, and acting in a communal fashion by taking on a caring, selfless, more emotional role (Eagly & Wood, 1991; Sprague & Massoni, 2005; Van Veelen & Derks, 2020). In addition to their professional work, women are expected to care more for issues of domestics,
spend more time on care work, and act with more compassion and emotion (Baker, 2010; Maxwell et al., 2019). Males are expected to be agentic and in control of political and social organizations, the head of the household, and concerned with decision making and finances (Eckes, 2002).

Institutions

The gendered imbalance of women in higher education roles is promoted by the masculinization of educational institutions in combination with societal gendered stereotypes of women’s expected roles (Acker, 1990; Hart, 2016; Maphalala & Mpofu, 2017; Sayce, 2012). Deviations from these gendered role expectations can lead to negative repercussions for female faculty in both their career and personal lives (Carbajal & Hughes, 2016; Maxwell et al., 2019; Van Veelen, 2020), with universities denying female faculty tenure or promotion at a higher percentage than male faculty (Burke et al., 2017; O’Connor, 2019). In addition, female faculty tend to be viewed as teachers while male faculty are professors (Burke et al., 2017; Piatak & Mohr, 2019), thus positioning female faculty in a “feminine” and less respected role.

STEM

The underrepresentation of women in academia is most apparent within STEM programs despite an increase in the number of female faculty in the past two decades (Hart, 2016; LaCosse et al., 2016). Female faculty in STEM programs face many obstacles, including gender-STEM stereotyping that positions women as being inferior in STEM fields when compared to men (LaCosse et al., 2016). Female faculty in STEM programs experience barriers and struggles created by lack of departmental or collegial support, undervalued research, and the underlying gendered masculine theme associated with STEM programs. These barriers include delayed
promotion, lack of release time for research, and increased workload due to heavy teaching schedules (Hart, 2016; LaCosse et al., 2016).

Student pressure may also act as an obstacle for female faculty in STEM programs due to the high-stakes nature of such courses. STEM programs follow a sequence in which students must achieve specific minimal grades before being allowed to move onto the course level. Students who need to achieve minimal grade requirements exert assertive action and pressure on faculty teaching such high-stakes courses. Students may feel validated in negative behaviors toward female STEM faculty due to questions of female competence in STEM, promoted by stereotype threat.

Academic Momism

The continuation of gendered role expectations within higher education by both institutions and students leads to female faculty anchored in the care role as an academic mother. Students look toward female faculty more than males for emotional as well as academic support since females fit the gendered stereotype of being “warmer” and more “nurturing.” Referred to as “academic momism,” this role expectation can lead to female faculty feeling their role is comparable to mothers who are caring for their family (Bernard, 1964, p. 131). The COVID-19 quarantine has exasperated the female faculty position as academic mother due to the increased need for communication, technical support, as well as emotional support of students (Christian et al., 2020; Cutri & Mena, 2020). In addition, the pressure of high-stakes STEM courses can lead to greater support needs expected of female faculty, thus influencing female faculty’s experiences as academic mothers.
Purpose of the Study

Female faculty in higher education are viewed differently than male faculty and may be seen as academic mothers. This study looks at how female faculty in higher education who teach in high-stakes STEM programs may experience a role of AM and how they negotiate their role and responses within a patriarchal system. STEM courses are considered high-stakes due to being foundational for program entry.

Significance of the Study

The significance of this study is through the exploration of female STEM faculty’s experiences of AM using a qualitative approach. Previous studies on female faculty and AM have been quantitative in nature. This study fills a gap in the literature through a qualitative investigation of the lived experiences of AM by female STEM faculty in their own words and may provide an understanding of their career trajectory. This knowledge may lead to gaining a greater insight of the underrepresentation of women teaching STEM courses in higher education.

Methodology of Literature Review

Organization

This chapter presents the current literature on the topics of gendered expectations of female STEM faculty members and AM. It begins with a discussion of the theoretical frameworks of the SCM, feminism, and FST, followed by a discussion of the phenomenon of AM. Next, I look at the factors contributing to the phenomenon of AM, followed by concluding thoughts.

Theoretical Frameworks

This study draws upon the feminist frameworks of FST (Harding, 1986; Hartsock, 1983) and SCM (Fiske et al., 2002). Both theories enable an examination of the foundation and characteristics of AM through the positioning of women as subordinate due to a patriarchal
system of oppression. Female faculty’s perceptions and experiences of their role as academic mothers as situated through hegemonic beliefs may negatively influence career satisfaction, and potentially, career trajectory (Hart, 2016; LaCosse et al., 2016), leading to a lowered presence of female faculty in higher education STEM programs.

The feminist movement, which looks toward equality for all regardless of sex (Rampton, 2008), has been an ongoing process beginning with the first wave and the fight of the suffragettes. This study stems from the second wave of feminism and the fight for women’s reproductive rights and equality. During this time, two publications established the second feminist wave’s trajectory. Friedan’s (1963) *The Feminine Mystique* described women’s loss of identity due to societal expectations of men in a dominant role and women as homemakers. Relatedly, hooks’ (1984) book, *Feminist Theory From Margin To Center*, focuses on the concept of oppression. In addition, hooks pointed out that Friedan’s concept of identity loss centers on the struggle of White, middle-class women. She called for the establishment of a sisterhood among women to overcome oppression and the marginalization of women.

While there is no one singular definition of feminism, hooks described feminism as a “movement to end sexism, sexist exploitation and oppression.” Female STEM faculty in higher education experience oppression in their role on many levels, including from the institution, from colleagues, and through student perceptions. Gendered structuring and cultural norms establish masculinized expectations of scientific learning, thus limiting acceptable behaviors of female STEM academicians (Acker, 1990). Examples of female oppression within academic institutions may include lack of equity with male faculty in course offerings and promotions or decreases in research opportunities and discrepancies in service work requirements (Blithe & Elliot, 2020).
This study pivots on the feminist theme of oppression sustained through accepted gender norms brought on by patriarchal ideals and the positioning of women in subordinate roles due to male hegemony. Longino (1996) stated, “there is no one position from which knowledge can be developed, but some positions are better than others.” FST enables an understanding of female STEM faculty’s experiences of oppression in academia through their unique perspective. The SCM provides a deeper view of women’s subordinate role to the agentic and dominance afforded to men. The combination of these theories enabled me to fully present female STEM faculty’s experiences of oppression due to gendered stereotyping in a patriarchal institutional system.

**Feminist Standpoint Theory**

FST was developed in the 1970s and 1980s during the second wave of feminism through the thinking of feminist authors Hartsock (1983), Harding (1986), Hill Collins (1990), Smith (1979), Rose (1991), and Jaggar (1998). Founded on the Hegelian and Marxist tradition of the slave and master analysis, FST looks at how women, as subordinates, are afforded a unique view in the exploration of power dynamics. Rooted in the lived experiences of marginalized groups and stemming from an “outsider” position, FST enables us to better understand how our position in society molds our ways of knowing (Harding, 2004; Kronsell, 2005). The three tenets of FST are as follows: (a) knowledge is socially situated, (b) marginalized groups are socially situated in ways that make them more aware and able to ask certain questions than non-marginalized groups, and (c) research should begin with marginalized groups (Bowell, n.d.). The positioning of female STEM faculty in higher education as oppressed by patriarchal ideologies and institutions validated the use of FST in this study.

Surfacing as a feminist critical theory, FST is considered an epistemological approach to guide feminist research (Harding, 2004). Harding saw FST as “a way to empower oppressed
groups, valuing their experiences and as pointing towards a way to develop ‘oppositional consciousness’” (p. 2). The methodology used to conduct FST studies includes research and thinking gathered from women’s lived experiences and activities as well as discourse. Feminist methodologies question what is self-evident, with FST exploring oppression that appears natural and assumed (Harding, 2004; Kronsell, 2005). Taking a social constructivist stance, FST takes into account the role of social situations such as gender, race, ethnicity, class, and physical ability in the formation of our knowledge (Harding, 2004).

Critics of FST have cited numerous issues with this theory’s approach. If FST begins with exploring women’s lived experiences thus leading to a “standpoint,” then the assumption is that there is one “standpoint” that is universally shared by all women regardless of race, class, or ethnicity (Bowell, n.d.; Longino, 1993). To account for this, there is a recognition of the plurality of experiences as explored through intersectionality. Longino (1993) discussed a lack of “convergence of theory” (p. 212) when criticizing FST. Inasmuch as we can examine experiences with “strong objectivity” (Harding, 1993), we cannot fully share them due to an inability to escape our social positions nor our life histories. This study bypassed these criticisms by incorporating the framework of intersectionality. This allows embracing the lived experiences of women while taking into account the duality of their experiences due to race, ethnicity, color, class, or physical ability.

**Stereotype Content Model**

This study examines female faculty’s perceptions of AM using the lens of SCM (Fiske et al., 2002). SCM expands on the ambivalent sexism theory (Eckes, 2002; Glick & Fiske, 1996), which combines hostile and benevolent sexism together to reinforce traditional stereotyped gender roles, with women being subordinates to men. According to ambivalent sexism theory,
benevolent perceptions of women show them as weak, caring, fragile, thereby “needing” protection by men. People with hostile perceptions of women see them as manipulative and controlling of men. Such stereotypes work to maintain male dominance and a misogynistic society.

Expanding on ambivalent sexism theory, SCM describes stereotypes as being bi-dimensional with groups or individuals possessing warmth or competence. Warmth is associated with kindness, empathy, and communalism. Competence is defined by capability, agency, and leadership (Fiske, 2018). These two dimensions have conflicting intergroup stereotypes. The stereotypes include views that people who are warm are perceived as incompetent, with examples including older people, those with disabilities, and people of certain cultures (e.g., Italian or Latino). Individuals who are stereotyped as cold are viewed as competent, such as wealthy business people.

The stereotype dimensions of warmth and competence correlate with previously studied concepts of communion and agency (Eckes, 2002). Communion is associated with the principles of warmth, morality, and empathy and are generally attributed to women, while competence, decisiveness, and leadership define agency and are associated with men (Fiske, 2018; Rubin, 1981). This stereotyping perpetuates the status of women as homemakers (incompetent but warm). In such views, women in careers (low warmth, high competence) would be perceived negatively (Eckes, 2002). According to these stereotypes, women belong at home on the “mommy track” (Cuddy & Fiske, 2004, p. 701) and not in a professional role. Women who choose to undertake a professional path still take on a greater percentage of domestic chores such as cooking, cleaning, and childcare, thus taking on an increased workload. According to this model, males are afforded the ability to focus on work and career advancement. When females
attempt to blend communal and agentic roles, they face punitive repercussions (El-Alayli et al., 2018).

The views and dimensions of SCM may explain behaviors toward female faculty and the cause of their classroom perceptions. SCM explains that students may provide negative evaluations when female faculty act in a non-communal way. Students may also have increased demands and expectations of female faculty when compared to male faculty since men are seen as agentic and are expected to be more controlling. Perceptions of female faculty as academic mothers correlates with expected views of women as nurturers. SCM may also be a lens to examine perceptions of female faculty having increased emotional and academic workload. Communal traits position females as undertaking more menial, housekeeping, and supportive work. This provides a possible explanation for female faculty teaching more introductory and low-level courses that may require more student support, thus promoting their views as academic mothers.

The following sections present an in-depth literature review of studies of the role of faculty members’ gender in higher education, with a focus on AM. A discussion of the AM phenomenon and prior AM quantitative studies are followed by an examination of the factors contributing to female faculty perceptions of AM.

**Academic Momism Phenomenon**

It is not enough to just define AM to fully understand the experiences of female STEM faculty in higher education. There are many contributing factors to this phenomenon, including gender stereotypes, student expectations, student/faculty member relationships, emotional and academic workload, and gender stereotypes related to STEM. These experiences are unique to each individual. As found in this study, some of these factors may be used to help sustain career
trajectory and not be perceived as patriarchal oppression by the female STEM faculty members undergoing them. These factors are examined in the following section.

The AM phenomenon, coined by Bernard (1964) and examined in this study, focuses on perceptions of female faculty as warmer and more nurturing toward their students than male faculty. Female faculty are expected to be concerned about student emotional well-being and just student academics, thus acting more like an academic mother than a faculty member. Notions of female faculty as academic mothers maintain expectations of the roles of women in society. Society perceives females as nurturing, sensitive, and sympathetic. Any deviation from this role causes negative impressions of women (Anderson & Miller, 1997; Basow & Silberg, 1987; MacNell et al., 2015). Bernard also surmises that female faculty conduct the “heavy, backbreaking load” of teaching introductory courses (p. 121), while male faculty are given more rewarding work such as graduate-level courses. Such perceptions of female faculty often lead to stereotypes about their roles and responsibilities.

Bernard (1964) reflected on factors that lead students to perceive female faculty as academic mothers. One such trait exhibited by females is patience. In an experiment conducted in the field of mathematics, female STEM faculty were shown to achieve better exam scores with struggling students than male faculty (p. 129). The implication of this study was that the less able students scored as well as other students through the support and patience of the female STEM faculty who fit the role of academic mothers. Support is another underlying trait exhibited in academic mothering. Bernard discussed “mothering” relationships between graduate students and their mentors. In several narratives, Bernard discussed several narratives of mentors supporting the writing process of students, as well as protecting and supporting a doctoral candidate presenting to a non-receptive committee. In what would seem contra-supportive,
another anecdote presented the story of a mentor, who was described as “too motherly and too sympathetic with the students” (p. 145), who did not pass a master’s thesis despite the rest of the committee approving it. The female mentor used her AM to show her concern for subquality work and did not use it to cave to pressure.

Being an academic mother does not necessarily mean one has low standards and will cave to student pressure. It means that female faculty, as academic mothers, protect their students as concerned but sympathetic guides. They provide academic as well as emotional support. One may question whether AM is disruptive to the academic process. As stated in Bernard (1964), Ruth Benedict stated, “that the self-realization through congenial work is virtually necessary and that a teacher has an obligation to help the student find himself” (p. 143). AM can be a positive influence for many faculty and students, yet some faculty feel that students who need academic mothering should be weeded out of programs (Bernard, 1964). This concept is of great interest when investigating female STEM faculty of high-stakes courses. The initial courses taken by students who enter STEM programs act as a weeding-out process. The extra support provided through AM may lead some students to progress through the program when they would not pass otherwise.

AM is an expressive role and appears to be in direct conflict with the instrumental institutional goals of academia. This concept aligns with the instrumental and driven traits of male faculty given that institutions are seen as masculine (Acker, 2012). The use of SCM to examine female STEM faculty’s experiences of AM aligned with their perceptions as well as explained the foundation of AM.

The stereotyping of gender behaviors influences classroom expectations by students in that they will have conjectures of female, and not male faculty, that go beyond normal duties.
(Sprague & Massoni, 2005). For example, students expect female faculty to care about their personal lives and emotional states, like a mother would. Female faculty who are deemed as “best,” possess communal behaviors while those deemed as “worst” are considered rigid and mean (Basow et al., 2006). In AM, student expectations of female faculty to be kind and caring cause the faculty to become their academic mothers and may increase the emotional workload of faculty.

The emotional workload expected due to AM includes conducting emotional work as part of one’s job; yet it is not part of the evaluation process and may go unnoticed. Emotional workload includes dealing with student stress or assisting when they go through rough situations. Female professors must handle students more gingerly in order not to be deemed too harshly (Carabajal & Hughes, 2016). They are expected to assign less work, grade easier, and inflate grades (El-Alayli et al., p. 137) or otherwise be viewed negatively (Rubin, 1981). Perceptions of female faculty as being caregivers of their “academic family,” meaning their department and school, is also perpetuated by institutions (Guarino & Borden, 2017). Expectations of female faculty to conduct significantly more service work to their department or institution in comparison to male faculty may promote their positions as academic moms.

Previous studies have used AM to explain perceptions of female faculty (e.g., Pease, 1993; Rubin, 1981; Takiff et al., 2001). A more recent study conducted by El-Alayli et al. (2018) has shown that female professors report more work, demands, and special requests than male faculty. The study protocol suggests that female faculty perceive such demands as increased workload yet may experience the same frequency of requests and demands as male colleagues (p. 142). Female faculty more frequently reported student-initiated friendships than male faculty. It may be possible that female faculty automatically perceive relationship requests as part of their
AM. Female faculty actions may be opening the door for such behaviors through their empathetic personality. Rubin (1981) pointed out that female faculty are rated more negatively than male faculty. They are also expected to be more lenient and are found to be less credible than male faculty, thus remaining in an academic mother position. In their role as academic mothers, there is an expectation for female faculty to display “stereotypically feminine characteristics” (Takiff et al., 2001, p. 142) and fulfill student expectations or face penalty through poor evaluations.

Data from these studies suggest that special requests by students may be dependent on faculty’s gender (Basow & Silberg, 1987; El-Alayli et al., 2018). In addition, negative student reactions to denial of requests or being told “no” were more likely toward female rather than male faculty (Anderson & Miller, 1997; Basow et al., 1987). Studies also suggest that female professors may suffer from more work burnout due to increased workload and emotional labor (El-Alayli et al., 2018). Female faculty undertake increased university commitments, adding to the threat of burnout and their role of taking care of the academic family, as opposed to male faculty. The contribution to greater stress caused by being an academic mother may lead to lower job satisfaction and alter female faculty’s decisions to remain in academia. This provides a possible explanation for the decreased presence of females in higher or tenured positions as well as decreased female presence in STEM programs.

Quantitative Studies of AM

Prior studies referencing AM have been mostly quantitative in methodology. El-Alayli et al. (2018) examined female faculty’s experiences of student expectations using SCM. The study looked at how stereotype-driven gender expectations of students lead to female faculty experiencing greater perceptions of workload compared to male faculty. SCM explains the
perceptions of women as being “warmer and more nurturing” (El-Alayli et al., 2018), with males viewed as “competent and agentic” (p. 137). The authors cited AM as describing female faculty’s perceptions of increased fostering, which would lead to their enhanced perceptions of workload. The study tested female faculty’s \((n = 88)\) perceptions of emotional workload, including work demands and emotional labor, as well as how students \((n = 121)\) would react to receiving “no” responses from female versus male faculty. Findings from the study supported the ideas of student entitlement influencing expectations of female faculty and increasing workload and emotional demand perceptions of female faculty.

Rubin (1981) also looked at the stereotyping of college faculty in a quantitative study that examined students’ \((n = 127)\) views of ideal male and female faculty as well as how student gender correlates with terms of address used for faculty. Citing Bernard’s AM, Rubin pointed out that students expect female faculty to be “more nurturing, more lenient and more patient than male professors” (Rubin, 1981, p. 967), leading them to be academic mothers. In addition, she mentioned that despite women proving themselves, they receive lower ratings than males on their evaluations. The presented discussion supports the idea that female faculty are stereotyped. This is reflected by more familiar terms of address used by students towards female rather than male faculty. The concept of AM was supported by the finding that students expected female faculty to possess traits that correlate to nurturance and openness with female faculty. Rubin’s study suggested that students judge professors based on traits that have nothing to do with competence and ability and expect female faculty to adhere to traits that correspond to AM.

Takiff et al. (2001) looked at student terms of address, implications, and AM in their quantitative study. Leading to hindrance in female faculty’s career advancement were student \((N = 243)\) perceptions of female faculty as having nurturance as well as gender bias by institutions.
This study showed that males are more likely to be addressed by a professional title than females. The possibility that male faculty tend to teach larger and higher-level courses, with females instructing introductory-level courses, can explain differences in faculty member terms of address. Female faculty appeared to be at a disadvantage due to student ratings of accessibility and status. Students rated female faculty who were referred to by professional title as inaccessible, while female faculty referred to informally received accessible ratings. This may be due to students’ unconscious bias positioning of female faculty as academic mothers.

Burke et al. (2017) investigated student perceptions \( n = 544 \) of faculty member competence based on gender, noting that as one looks at faculty member rank, male faculty are more likely to reach full professorship than females. Reasons cited could be due to “differential work responsibilities” (p. 1) and lack of support and encouragement of female faculty. Citing Bernard’s AM, female faculty are more prone to “academic burnout” (p. 2) due to student demands of nurturance from female faculty. This leads to increased workload. Female faculty who deviate from expected feminine characteristics tend to receive lower ratings from students. An additional finding of the study was that female faculty were more likely to be referred to as “Mrs.” with male faculty as “Doctor,” thus not affording females the same level of respect, even if they held the same title. The idea of gendered expectations of faculty by students was supported through this study.

Each of the presented studies utilized AM as an explanation of student perceptions of female faculty. None of the studies have been qualitative, nor do they delve into female faculty’s lived experiences of AM and how it impacts their perceptions of their classroom role. The studies are also very broad and do not focus on a specific program of study. This dissertation study filled a gap in the literature by conducting an in-depth exploration of the essence of female
STEM faculty’s lived experiences of AM. This study also examined the context of how the COVID-19 pandemic contributed to female STEM faculty member experiences of AM by looking at reflections from prior semesters.

**Factors Contributing to the Phenomenon of Academic Momism**

In the sections below, I examine the multiple contributing factors that prior research identified in relationship to AM: (a) gender stereotype related to STEM, (b) student perceptions, (c) faculty job satisfaction, (d) work-life balance, (e) faculty workload, (f) high-stakes courses in STEM, and (g) effects of COVID on faculty role. Each of these factors may play a role in the reasons for student perceptions of female STEM faculty as AM or as foundations for why female STEM faculty may perceive themselves as academic mothers.

**Gender Stereotypes Related to STEM**

There are a number of possible explanations for the lack of female presence in higher level positions at universities, many of which have their foundation in stereotype-driven gender bias (Treviño et al., 2017). Gender stereotyping includes the positioning of women as expected to take on caring, selfless, more emotional roles (Eagly & Wood, 1991; Sprague & Massoni, 2005; Van Veelen, 2020). In addition to their professional work, women are expected to care more for issues of domestics, spend more time on care work, and act with more compassion and emotion (Baker, 2010; Maxwell et al., 2019), while males are able to focus on their agentic roles (Eckes, 2002).

Gendered stereotypes of expected female behaviors may cause female STEM faculty’s experiences of AM. Stereotypes related to STEM begin early in education. Within this stereotyping, females are seen as less capable than males in STEM subject areas. While many of these stereotypes fade throughout childhood, STEM stereotype does not fade and may lead to
altered career goals for women (LaCosse et al., 2016; McGuire et al., 2020; Watt et al., 2013).

As seen by their lack of representation, potential gender bias against women in STEM fields is of particular concern due to the lack of role models for female students and potential lack of diversity in the learning environment (LaCosse et al., 2016; McGuire et al., 2020). The lower female presence in STEM perpetuates the gender STEM stereotype of female inadequacy in these programs of study, which alters career choices for many girls since they are led to feel they cannot succeed in this career path (Watt et al., 2013). There is still a notion of an inherent lack of science ability by girls and women in STEM-related courses of study (Kang et al., 2019; LaCosse et al., 2016; McGuire et al., 2020) with the mindset of females underperforming in science beginning early on in education (Kang et al., 2019; Pregaldini et al., 2020) and altering female STEM career paths.

Studies on the setting and environment of STEM courses continue to present the association of warmth with females, positioning them more as academic mothers and as such may contribute to the lack of female continuance and presence in STEM education (Hart, 2016). Technical tools and laboratory objects used in STEM courses may create an impression of masculine setting (Cheryan et al., 2009) and lead to a more tense atmosphere between male and female colleagues in STEM programs (Thoman et al., 2013). This can lead to female STEM faculty members feeling unwelcomed and sensing that their abilities are not valued in the same way as their male counterparts (Watt et al., 2013).

A lack of collegiality and support by department members may also dissuade continuance within a STEM academic career (LaCosse et al., 2016). Minimal institutional support and perceptions of low efficacy by female faculty prompted by gender stereotyping and bias may contribute to a lack of female presence in STEM programs. Institutions may be reluctant to
promote or grant tenure to female STEM faculty if their work is not valued. This is due to being positioned as academic mothers based on expected stereotype-based behaviors, leading female faculty to leave STEM positions for more fulfilling or welcoming careers (Watt et al., 2013), thereby decreasing their presence in academia. The lack of both institutional and collegial support may increase female STEM faculty member perceptions of AM by perpetuating STEM stereotyping and positioning female faculty in less agentic roles. Female STEM faculty members may feel their academic role is relegated more to that of support rather than of esteemed and valued faculty member and thereby acting more as an academic mother to their institution.

Students who adhere to the belief in gender STEM stereotypes may perceive female faculty more in a role as academic mother, rather than as respected academicians. Such a perception can lead to increased workload and emotional demands by students of female STEM faculty members as they feel they can assert grade changes, make demands, and look for increased support in high-stakes STEM courses. Like mothers feeling pressure to bend to needs, female STEM faculty may feel pressure to bend to student demands, thus promoting feelings of AM. Female STEM faculty who act in ways that are more agentic, such as authoritative, can be seen as “pushy, overbearing and unfeminine” (Elias & Loomis, 2004, p. 943).

Student pressure may also act as an obstacle for female faculty in STEM programs due to the high-stakes nature of such courses. STEM programs follow a sequence in which students must achieve specific minimal grades before being allowed to move onto the course level. Teaching such high-stakes courses subject faculty to pressure and assertive behaviors by students. Students may feel validated in negative behaviors toward female STEM faculty due to questions of female competence in STEM, promoted by stereotype threat.
Student Perceptions of Female Faculty

Another factor connected with the phenomenon of AM is student perceptions of faculty. Many colleges and universities use student evaluations as part of the promotion and tenure process (MacNell et al., 2015; Treviño et al., 2017). Student gender stereotyping and unconscious bias may skew evaluations and favor male faculty (Basow et al., 2006). Numerous studies exist on student perceptions of faculty (Bachen et al., 1999; Basow & Silberg, 1987; Hart, 2016; MacNell et al., 2015). Cultural and societal norms can mold these perceptions. According to gender schema theory (Bem, 1983), these beliefs take root beginning in pre-school. Students hold beliefs that female faculty should present feminine characteristics of warmth, approachability, and availability (Bennett, 1982). Male faculty are expected to be assertive, knowledgeable, and possess leadership characteristics (Carbajal & Hughes, 2016; Kierstead et al., 1988).

Students expect the personality of their ideal professor to include a combination of expressive and instrumental traits (Basow et al., 2006). Expressive traits are associated with females and include nurturance and empathy as well as more domestic interests such as family care and housekeeping. Instrumental traits are associated with males and include leadership and decision-making skills (Parsons, 1955). Veering from these expected roles can lead to negative opinions of females who are in the workforce. This creates a double-bind for female faculty in that they may meet student expectations of a traditional gender role but may still be viewed harshly for taking on a more agentic role (Bachen et al., 1999). Students also expect female faculty to make themselves readily available for office hours and out-of-classroom instruction and yet will still evaluate them as “inaccessible” (Anderson & Miller, 1997). Female faculty are more often referred to as “Ms.” or “Mrs.” “teacher” or addressed by their first name, while male
faculty are referred to as “Professor” or “Doctor” despite the fact that both groups possess the same degrees (Burke et al., 2017; Muller & Chamberlain, 2000; Takiff et al., 2001). These more familiar terms of addressing female faculty perpetuate their marginalization of female faculty as well as an elevated status afforded to male faculty through more professional titles (Rubin, 1981).

The increase in academic entitlement exhibited by students is a recent concern for female faculty. Academic entitlement leads to unrealistic expectations of earning high grades or a degree without putting forth effort and submission of mediocre work (Cain et al., 2012; Chowning & Campbell, 2009; Lemke et al., 2017; Luckett et al., 2017; Twenge, 2006). Entitled students may also have irrational expectations of their faculty members, especially female faculty (Chowning & Campbell, 2009; Kopp et al., 2011). Students will use coercive actions such as threats and bullying more often against female faculty members than male faculty to achieve grade goals (Knepp, 2012). Such actions increase emotional workload for female faculty.

**Faculty Job Satisfaction**

It is a misconception that the world of academia and college instruction is one of the least stress-inducing professions in the United States (Jiang et al., 2017). Studies show that being a tenured professor is the fifth-best low-pressure, high-pay position (Ward, 2017). However, other studies suggest that this is far from the truth. College faculty face many daily obstacles, including student demands and incivility (Jiang et al., 2016), lack of interfaculty collegiality and support (Lee et al., 2017), pressure to publish and service work (Muramalla, 2019), and most recently, an immediate transition to remote teaching due to the COVID-19 pandemic (Kitchner, 2020). These factors can lead to diminished job satisfaction since they increase academic and emotional workload. Student behaviors have changed over the past year due to the COVID-19
pandemic. Students are more stressed over their own health as well as learning remotely, thus having a greater need of support from female faculty as academic mothers. STEM courses may create greater stress and a need for support due to a concern of achieving lab goals when face-to-face class time has been discontinued. Female faculty who perceive themselves as academic mothers may feel increased pressure to assist and support these students, thus increasing their own workload.

Job satisfaction is an expression of “the feelings a worker has about their job or experiences in relation to previous or current experiences or an alternative” (Romig et al., 2011, p. 4). According to Gappa and Trice (2009), faculty member job satisfaction is dependent on a “core of respect”: “professional growth, academic freedom and autonomy, flexibility, employment equity and collegiality” (Romig et al., 2011, p. 7). Student relationships play a key role in faculty member satisfaction within this last category. It is crucial to have positive professional relationships and mentorship opportunities, fulfilling student relationships and a sense of community to enhance faculty’s level of job satisfaction.

Faculty experience pressure to “publish or perish” (Rawat & Sanjay, 2014, p. 87; Van Veelen, 2018). Many universities push research and service, along with teaching, to promote their campuses and increase student population and retention (Romig et al., 2011). Job security via tenure and promotion are tenuous and conditional (Wilson, 2008). Sexism through inequitable hiring practices and salary scales between men and women also increases faculty member stress (August & Waltman, 2004; Webber, 2018). Female faculty are still victims of gender wage gap in their perceived role as academic mother. Female faculty may not achieve the same promotion and salary levels as their more assertive male colleagues, based on a mother’s expected role as being agreeable and warm.
Recent studies on faculty member job satisfaction have cited several other categories leading to dissatisfaction in the college setting. Faculty point to the lack of family support and paid maternity leave as a reason for dissatisfaction (Weber, 2018). Females are still considered the primary caregivers, which may be of great concern for female faculty (Malisch, 2020). Females are more likely to take on non-tenured or adjunct positions. This affords them the ability to take time off for child bearing and rearing—being a mother. The lack of work-life balance between male and female faculty is never met by accepting these positions (McCutcheon & Morrison, 2016), thus limiting women to less senior roles and cementing institutional views of female faculty as academic mothers.

In many college and university settings, there is a lack of a sense of belonging and a lack of collegiality due to inflated egos of department members (Weber, 2018). Work expectations have increased due to an increased bureaucracy on many college campuses. This includes increases in department and campus-wide service work without any rewards. The tenure process at many colleges is vague, leaving faculty confused and without career advancement due to questions about whether increased service goes toward promotion and tenure (Weber, 2018).

Faculty also cite student interactions as contributing both positively and negatively to their job satisfaction (Ruzich, 1995). While many faculty members enjoy and seek out interpersonal relationships with their students, others must also deal with the recent phenomenon of increased academic entitlement, which has been shown to lead to instructional stress and dissatisfaction (Jiang et al., 2017). This disposition may lead to behaviors that are disruptive to the learning environment and possibly set a cynical tone on the part of the faculty member. Addressing students who act entitled may lead to increased faculty member tension, emotional
exhaustion, and cynicism regarding the education process (Jiang et al., 2017). Such responses may lead female faculty to have increased feelings of AM due to tending to student demands.

**Work-Life Balance**

Ascription to gender demands creates a double burden for female faculty as they try to manage the work-life balance of career goals while maintaining a family (Bingham & Nix, 2010; Guarino & Borden, 2017; Malisch et al., 2020), thus casting them in a negative light professionally. Female faculty are not being taken as seriously as male faculty due to stereotypes of women being more domestic. Gender-expected roles position females as being expected to follow the career choices of the higher salaried and more established partner, causing geographic mobility to be a limiting factor for job prospects (Baker, 2010). Freedom to travel for conferences and research opportunities may also be impeded by domestic obligations. Female faculty who care for children or elderly parents must juggle care work with increased student enrollment, research, and other instruction-related tasks (Helvaci et al., 2017; Akanni & Oduaran, 2017). On the other hand, male faculty, as non-primary caregivers, appear to have more time to dedicate to research and other venues of career advancement (Guarino & Borden, 2017; O’Meara et al., 2017). Women still bear a higher percentage of domestic chores, including housework, cooking, and child rearing, despite holding the same academic position as their partner, due to the pressures of traditionally held gender roles. Such workload affects research availability, publications, and career advancement (Maphalala & Mpofu, 2017).

Most recently, the quarantine caused by the COVID-19 pandemic has been especially hard on female academics. There has been the additional stress of a rapid transition to remote learning, in addition to their normal workload. Female academics are now juggling increased shares of family responsibilities and care. This has greatly affected the output of female research
publications (Kitchner, 2020). Students are relying on female faculty members with increased urgency for support as they navigate unfamiliar learning platforms and adapt to social distancing (Christian et al., 2020; Kozimor, 2020; Willard, 2020).

**Faculty Workload**

Female faculty report perceptions of higher workload, both academic and emotional, brought on by student support, when compared to male faculty. The number of overall assignments completed by a faculty member in a given amount of time contributes to workload (Muramalla, 2019; O’Meara et al., 2017). At the college or university settings faculty workload includes: (a) contact and instructional hours, (b) class size, (c) grading, (d) mentoring, (e) scholarly activities, and (f) administrative and committee service (Muramalla, 2019). Workload expectations can change over time due to factors such as the number of students, research demands, and contingency work. These workload expectations may contribute to female faculty perceptions of AM through the institutional and student support time required as compared to male faculty.

Female faculty have increased perceptions of workload due to the increased amount of institutional service work undertaken by them. Chairpersons may approach female faculty before male faculty to undertake service work. Female faculty may have difficulty saying “no” to requests to avoid deviating from expected gender stereotyping and negative views by administration (Baker, 2016). Females also must work harder to prove competence, showing more expertise and proficiency than male colleagues, leading them to overcompensate by acting more professionally and putting in more effort in lesson preparation (MacNell et al., 2015). Female faculty may still receive more negative student evaluations than male faculty despite the additional effort to their teaching (Carabajal & Hughes, 2016). Female faculty live by a double
standard in that they must possess masculine characteristics yet still act feminine in their personality traits (Basow & Silberg, 1987). All the combined factors may lead to female faculty member perceptions of increased workload (Jiang et al., 2017).

Course type may also alter perceptions of workload, with female faculty being more likely to teach introductory courses (Burke et al., 2017). Teaching introductory courses includes increased work demands of grading, student communication via emails, and availability outside of class for office hours (Allen, 1998; Basow & Silberg, 1987; Burke et al., 2017; El-Alayli et al., 2018). Student demands can lead to faculty member burnout due to the amount of time delegated to addressing their needs (Jiang et al., 2017; Pease, 1993). Many faculty feel an increased workload and time constraints due in part to accommodating and negotiating with students and acting as their academic mother (Wilson, 2008). Adding to faculty member perceptions of workload is the occurrence of student entitlement. Studies have shown that faculty of entitled students felt more negatively about their jobs than those who did not perceive their students as entitled (Heffernan & Gates, 2018).

An examination of faculty member-student relationships and the role in faculty member job satisfaction are critical for creating positive learning environments and educator retention. It is crucial to understand which factors may dampen STEM professor job satisfaction given the 25-31% increase in demand for nursing and other STEM careers (STEM careers are growing in demand, 2022). Such information could be used to increase the retention of faculty and as an indirect effect, of students as well.

Positive student relationships increase student motivation and satisfaction and can lead to greater faculty member satisfaction. Both faculty members and students may become more motivated when there is a mutual positive classroom engagement. There appears to be an
increased capacity to work more productively together and increased opportunities to learn from one another. Affirmatory views of one another create increased self-efficacy of both student and faculty member, thus possibly leading to greater job fulfillment (Anderson & Carta-Falsa, 2002). Conversely, reports have cited faculty member burnout due to high demands of students, whether it be for relationships (Wilson, 2008) or due to entitled behaviors (Jiang et al., 2017). Greater job fulfillment is not necessarily attributed to having positive relationships with students. Student time demands and faculty member desire to meet such demands may lead to “academic melancholia” (Wilson, 2011, p. 225). Such negative feelings can cause faculty to resent students, despite feeling satisfied with their job. For many female faculty, positive student relationships may create a welcoming role as AM. For others, negative student relationships may discourage their desire to be perceived as an academic mother, due to bullying or increased workload.

**High-Stakes Courses in STEM**

Many introductory STEM courses, such as anatomy and physiology and chemistry, are considered high-stakes course in that they are foundations for many health-related programs as well as architecture, civil engineering, and construction (McCuskey et al., 2005; Meaders et al., 2020; Schutte, 2016). Many STEM programs are increasing enrollment (Schutte, 2016) due to workforce demands (New England Board of Higher Education, 2011). As technology becomes more advanced, the demand for knowledge from introductory STEM courses becomes more crucial. In addition, most STEM programs follow a highly defined path and require certain grade achievement before allowing progress onto the next level of study (Meaders et al., 2020; Sturges et al., 2016; Sturges & Maurer, 2016). Introductory STEM courses may be considered difficult due in part to connections to various other courses of study, an abundance of material to memorize, and ever-changing complexities as new research develops as well (Sturges & Maurer,
2016). First-year students entering STEM programs of study may also grapple with transitioning from high school to college learning (Akiha et al., 2018). The current generation of Millennial students has exhibited growing rates of depression due to grade-related stress (McAllum, 2016).

STEM courses can be considered high stakes given the pressures associated with grade achievement. Students feel more pressure and distress by taking higher weight courses, and one such manifestation of this is that students expect female faculty to act more like academic moms. Students may have unreasonable demands and expectations of their female faculty member as they feel pressure to achieve specific grades. These actions can affect female faculty’s job satisfaction, perceptions of AM, and decisions to remain teaching in STEM programs (Cain et al., 2012; Clark & Springer, 2007; Muliira et al., 2017). Fear of not achieving minimal grades and permission to progress to the next program level can create reactions of distress from some students (Baer, 2011). Such distress may cause students to rely on their female faculty for more emotional support, thus increasing their role as academic mothers.

**Effects of COVID-19 on Faculty Role**

The most recent challenges for faculty relate to an ongoing and immediate transition to online education due to the pandemic caused by the COVID-19 virus. Administrators have exponentially increased pressure on faculty to enhance distance learning and technology skills (Bower, 2001; Cutri et al., 2020). There has been a rapid transition to distance and online learning since the spring of 2020. This has led to increased stress on the part of students and faculty (Christian et al., 2020). Faculty have been forced to quickly adapt to remote-learning delivery and possibly unfamiliar new technologies in a relatively short amount of time and without institutional direction (Kozimor, 2020; Willard, 2020). Some faculty have cited suffering
from “techno-overload,” which leads them to work faster for extended periods of time (Christian et al., 2020).

Female faculty gain additional stress stemming from job uncertainty and insecurity. More students can be grouped into online classes, decreasing the number of faculty needed (Willard, 2020). Fear of abilities using technology compounded with a skills gap has also added to faculty member stress (Kozimor, 2020; Son, 2020). Pressure on female faculty has increased due to teaching from home while simultaneously attending to children and other domestic roles. Female faculty find it particularly challenging to balance instructional and household responsibilities (Apperibai et al., 2020; Malisch et al., 2020).

Students are also suffering from stress and mental health issues due to the pandemic (Son et al., 2020). Student isolation due to social distancing is a growing concern over students’ health and that of their loved ones, resulting in difficulty concentrating and academic achievement (Son et al., 2020). Apprehension over the ability to learn online, class quality, and isolation may lead to an increased reliance on faculty for socio-emotional support (Apperibai et al., 2020; Kozimor, 2020). Now more than ever, students are looking toward faculty for social interaction, even if through video meetings, as well as technical support and academic support. This has exponentially increased faculty member workload and stress (Apperibai et al., 2020; Bogaert et al., 2014).

**Conclusion**

There is a need to examine the lack of female presence in higher education, particularly in STEM programs. Many of the reasons for the disparity between male and female faculty’s positions are due to the maintenance of gendered stereotypes. Patriarchal-based institutions themselves promote a masculine environment by doling more introductory courses and service
work to female faculty, thus increasing perceptions of workload. More male faculty are assigned higher-level courses and release time for research with greater frequency than female faculty. Lack of clarity in the promotion process, lack of collegiality within department faculty, and non-recognition of service work may also lead to female faculty member career dissatisfaction, thus altering their professional trajectory.

Students possess differing expectations of male and female faculty. Male faculty are viewed as competent and agentic, while females viewed as warm and nurturing, yet not as competent. Such gender-biased perceptions may lead to students expecting female faculty to be more nurturing, acquiesce to demands, inflate grades, and care more for students’ emotional needs than male faculty. This leads female faculty to feel more like academic mothers than respected faculty.

The perceptions of female STEM faculty of their classroom role as academic mothers are of great importance to gain an understanding of their career trajectory. Many introductory STEM classes are rigorous courses of study and are considered high stakes due to the requirement of a letter grade of C or higher for students to move on to higher level classes. Students in these courses may have greater academic or emotional demands of female faculty due to the high-stakes level, thus increasing the sense of faculty member “momism” and workload.

An investigation was warranted to examine the combination of pressures on both the teaching as well as transition to remote learning due to the effects of COVID-19. Female faculty feel the effects of AM more so than ever due to an increased need to support their institution and students. An additional pressure on female faculty aligns with the SCM of warmth and communalism: caring for their family while teaching. This study also investigated the
phenomenon of the COVID-19 pandemic on the lived experiences and perceptions of AM in female faculty in higher education.

The use of AM helped examine possible female perceptions of their classroom role. SCM provided an explanation for societal stereotyping of women. This may perpetuate the notion of empathy and concern by female faculty rather than their role as educator, thus altering their job trajectory. In addition, the feminist theories of oppression and FST enabled me to examine female STEM faculty experiences of oppression as promoted through patriarchal policies. This study filled a gap in the literature in that many gender-biased studies in academia are quantitative and do not examine faculty’s lived experiences, especially that of female STEM faculty. The results of this study may help address the factors leading to decreased female presence in science-based programs of study.
Chapter 3

Method

The purpose of this chapter is to describe the research methods used to conduct a qualitative dissertation study of female college STEM faculty’s experiences of AM (Bernard, 1964). There are many perceived and expected classroom roles held by faculty such as lecturer, facilitator, discussion guide, skills developer, advisor, and assessor (Keiler, 2018; Xhemajli, 2016). Perceptions of the roles held by female STEM faculty members may be molded by beliefs perpetuated by a patriarchal system within institutions and society. This study focused on how STEM female faculty members navigate their professional roles and their perceptions of being academic mothers within a hegemonic belief system.

As described in Chapter 2, the frameworks of FST (Harding, 1986; Hartsock, 1983) and of SCM (Cuddy et al., 2009) were used as lenses to understand the lived experiences of female STEM faculty as they negotiate their role as academic mothers. Through individual interviews, I examined female STEM faculty’s perceptions of stereotypes held by students and the administration. These stereotypes included gendered expectations that women are warmer and more empathetic, should worry more about student emotional needs, are team players, and will take on more acts of institutional service (e.g., committee work) than male faculty.

This study also examined the female STEM faculty’s perceptions of their roles as academicians (e.g., lecturer, mentor, guide, researcher, and leader) as well as their experiences of institutional expectations and perceptions of workload (both instructional and emotional). The current context of the study also accounts for the COVID-19 pandemic and ways it has exacerbated or diminished the experiences of AM among female faculty. The combination of student and institutional expectations and perceptions, stereotypes, and self-perceived roles, both
before and during COVID-19, led to female STEM faculty’s experiences of AM. A better understanding of the lived experiences of AM among female STEM faculty can help make sense of their perceptions as educators. This may lead to a deeper insight into why there is a lack of female presence in STEM courses.

**Study Overview**

This section presents the central phenomenon of AM. I summarize the existing literature and associated methods. This section also includes the purpose of the study and positing of the research questions.

**Problem**

Female faculty can experience many obstacles and challenges promoted by patriarchal beliefs, leading to a noticeable lack of female faculty in tenured or higher-level positions within higher education settings (Hart, 2016; LaCosse et al., 2016; O’Connor, 2019) and especially in STEM fields (Begeny et al., 2020). The lack of opportunities for securing promotions and career advancement of female college faculty may be due to several roadblocks founded in gender bias. One such hindrance may be the higher education institutions themselves. Described as being gendered or “male,” universities and colleges can perpetuate inequality for women compared to men (Acker, 1990; O’Meara et al., 2017). Female faculty are expected to take on roles that go beyond teaching and differ from the expectations of male faculty. Female faculty are expected to take on more service work and are assigned introductory courses more than male faculty, limiting the potential for career advancement (Guarino & Borden, 2017). Male faculty are also allotted more release hours for research and opportunities for publication, which are crucial for institutional promotion (O’Meara et al., 2017).
Another challenge for females in academia relates to the students themselves. Students may have expectations of women as being warmer and more nurturing when compared to male faculty (Bennett, 1982; Carabajal & Hughes, 2016). Such communal expectations of female faculty may lead students to also expect greater grading leniency, caving in to syllabus change demands, more availability outside the classroom, and more concern about the student’s emotional well-being (Anderson, 2010; El-Alayli et al., 2018). These presuppositions may leave female faculty feeling more like “academic mothers” (Bernard, 1964) rather than valued faculty. In addition, students are more likely to seek interpersonal relationships, including communication outside of the learning environment (Dobransky & Frymier 2004), with female faculty than male faculty. Student expectations and demands are greater in high-stakes STEM courses. High-stakes courses in this paper are defined as those requiring a minimal proficiency score that will enable a student to move on to the next higher course level in a program of STEM study. Students have more support demands of female faculty due to the need to achieve specific grade goals. Despite all the efforts and additional roles that female faculty take on to meet student and academic expectations, they may still receive poor student evaluations and may be looked over for promotion and tenure.

A third challenge affecting female STEM faculty in higher education is related to administrative challenges leading to possible risk for more workload demands (O’Meara et al., 2017). Chairpersons will ask female faculty to take on departmental and institutional service work (e.g., committees) more often than male faculty (Baker, 2016). There can be an unequitable distribution of course work offered to female faculty when compared to male faculty. Female faculty are more likely to be given a larger number of introductory courses to teach and less release time for research (Burke et al., 2017). Teaching introductory courses leads to increased
workload outside of classroom time, including grading, answering emails, and office hours (Allen, 1998; Basow & Silberg, 1987; Burke et al., 2017; El-Alayli et al., 2018). Student concerns to achieve minimal required grades increases demands by students in high-stakes STEM courses. This is due to these courses acting as a weeding-out process in undergraduate programs (Ballen et al., 2018). The increased support work expected by teaching introductory courses enhances female instructor perceptions of AM.

The COVID-19 pandemic has compounded female STEM faculty instructional and emotional workload as well as student relational demands and expectations. In addition to the expected support provided by female STEM faculty, faculty have been forced to move to various, possibly new, online teaching platforms with little to no transition time (Kozimor, 2020; Willard, 2020). Institutional demands to move learning to fully remote (synchronous and asynchronous), hybrid, or hy-flex has created tremendous increases in workload, especially for faculty who may not have been familiar with online platforms. The lack of face-to-face interaction and the urgency to transition to remote learning also led to student demands of faculty (Christian et al., 2020). Student fear of isolation and concern over technology (wi-fi access, online learning ability) has created the need for an exponential increase in the level of support offered by faculty (Aperribai et al., 2020; Kozimor, 2020). STEM programs are of particular concern due to attempts to transition labs to online platforms. Online learning does not provide proper experience for the skills needed to conduct lab work (George, 2020). Female faculty are looked to now more than ever by students to provide socio-emotional as well as academic support (Handel et al., 2020). These factors may have a critical effect on female STEM instructors’ experiences of AM.
The combination of institutional workload demands, stereotyped student expectations, teaching high-stakes courses, and the COVID-19 pandemic may lead to female faculty perceptions of increased workload. Prior studies have shown that workload perceptions may lead to job dissatisfaction (Anderson & Carta-Falsa, 2002; Baker, 2016; Wilson, 2008), especially when female faculty’s perceptions of being more like an “academic mother” takes away from the view of a respected faculty member. An examination of female instructors’ perceptions of their classroom role of AM through the framework of the SCM may provide a greater understanding of their job challenges and trajectories that can justify limited female presence in tenured and higher-level roles.

**Purpose and Significance**

The central phenomenon of this study was AM (Bernard, 1964), which refers to the students’ belief that female faculty will be more nurturing and caring about their personal and academic lives, leading to increased emotional workload and labor for female faculty (Burke et al., 2017; El-Alayli et al., 2018; Pease, 1993). Emotional workload may increase through students seeking out-of-the-classroom interpersonal relationships with faculty, causing a sense of obligation to help students cope with stress, anxiety, and other personal problems (Anderson & Carta-Falsa, 2002; El-Alayli et al., 2018; Frisby & Martin, 2010; Wilson, 2008).

The frameworks selected for this study were FST (Harding, 1986; Hartsock, 1983) and the SCM (Cuddy et al., 2008). FST explores the oppression of marginalized groups through their unique perspectives or standpoints of being able to view society. A key role of FST is to give voice to those who otherwise are subjugated (Harding, 2004). The authors of the SCM posit that stereotypes fall under two categories: warmth and competence with stereotypical perceptions of women as being warm and communal and men as competent and assertive (Fiske et al., 2002).
Prior studies have used the SCM to examine female instructors’ role perceptions as well as institutional and student–instructor expectations. Research has suggested that female faculty who deviate from these roles are viewed negatively, including in student evaluations (Anderson, Carbajal & Hughes, 2016; Cuddy et al., 2004; El-Alayli et al., 2018) and may be addressed differently than male faculty (Rubin, 1981).

Female faculty’s concerns over defying expected behaviors may lead to less job satisfaction and greater acquiescence to student demands. Previous studies on instructor gender and student ratings have shown that student expectations of female faculty include warmth and support (e.g., Bennett, 1982; Cuddy et al., 2004; El-Alayli et al., 2018; Rubin, 1981), while perceptions of male faculty include authority and intelligence (e.g., Anderson & Miller, 1997; Bachen et al., 1999; MacNell et al., 2015). These gendered profiles fit within the SCM. The aforementioned studies utilizing the SCM are quantitative in design and do not focus on STEM faculty. The SCM is foundational to the understanding of AM and enables the full and complete presentation of the female STEM faculty’s lived experiences through their own words, thus filling a gap in the literature.

Prior studies of student–instructor relationships have been mostly quantitative in nature (Dobransky & Frymier, 2004; Frisby & Martin, 2010). Other studies on student–instructor relationships, while qualitative, did not distinguish gender (Anderson & Carata-Falsa, 2002; Frisby & Martin, 2010). The data on AM are also limited and are quantitative in design (Burke et al., 2017; El-Alayli et al., 2018; Rubin, 1981). Qualitative studies citing AM are very limited (Baker, 2016). A possible reason for limitations in research on AM may be the view that the instructor gender gap in academia has significantly closed since the coinage of the phrase.
“academic mother” in 1964, and yet research has shown that the gap, while smaller, still exists (Baker, 2016).

The purpose of this phenomenological study was an examination of how female faculty in higher education who teach in high-stakes STEM programs may experience a role of AM and how they negotiate their role and responses within a patriarchal system.

Research Questions

This study answers the following questions:

(1) How do female STEM faculty describe their lived experience of AM in high-stakes courses?
(1a) In what ways, if at all, does the framework of SCM shed light on the experiences of AM among female STEM faculty?
(1b) How do the female STEM faculty work with and against the system of patriarchy and the patriarchal expectations of who they are?
(2) How do female STEM faculty see AM as contributing positively and negatively to their career trajectory?
(2a) How do they negotiate their roles and positioning as AM in relation to their career aspirations?

In the following sections of this chapter, I discuss procedures used to complete my study through a social constructivist lens using qualitative methods. My study protocol includes research approach, the role of the researcher, participants and setting, data collection and analysis, validity testing, and limitations of this study.

Research Design

This dissertation used a qualitative methodology with a phenomenological approach. Phenomenological approaches are used when a researcher is looking for “a profound
understanding of human experiences common to a group of people” (Padilla-Diaz, 2015, p. 104), making it the best choice to gain understanding of AM as it is experienced by female faculty in STEM. As I analyzed the data collected through in-depth, open-ended interviews, I also gained an understanding as to whether or not SCM explains the participants’ experiences of AM.

**Worldview**

My worldview espoused for this research study was one of social constructivism. Within social constructivism, there is a belief that “individuals develop subjective meanings of their experiences” (Creswell & Creswell, 2018, p. 8) and that there are multiple meanings. Looking at female faculty’s lived experiences of AM within this worldview meant that there were a variety of meanings for each participant. The worldview of social constructivism aligns with feminist theory research, which enabled me to co-construct an understanding of the social issue of women’s oppression by “relying as much as possible on the participant’s view of the situation being studied” (Creswell & Creswell, 2018, p. 8). Within my qualitative study, I listened and attempted to gain an understanding of participants’ experiences through open-ended questions and dialogue. This enabled me to examine the “lived experiences” of each participant of teaching STEM in a male-dominated field. In turn, I then co-constructed an in-depth understanding of the multiple experiences AM by the female faculty through interviews done via video conferencing over the course of a semester.

**Design and Procedures**

The design chosen for my dissertation study was an inquiry design (Creswell & Creswell, 2018) using a social constructivist lens. Inquiry design in qualitative research is a wide-ranging means of examination in which the meanings and interpretations of the participants are critical in gaining understanding of a social issue (Liampittong, 2019). This constructivist approach uses
participants’ experiences of what they have seen, heard, or perceived to make sense of an experience—in this case, perceptions of their classroom role as an academic mother. Inquiry design via open-ended questions enabled me to gather information regarding the participants’ lived experiences of their perceived classroom role of AM.

Choosing an inquiry design aligned with a qualitative research approach. According to Creswell and Creswell (2018), qualitative design incorporates “purposeful sampling, collection of open-ended data, analysis of text and personal interpretation” (p. xxii). One could conduct a quantitative study on female STEM faculty perceptions of their role, but the data gathered would not provide detailed information about their experiences and how they have come to develop these perceptions. The use of a qualitative phenomenological approach allowed me to reconstruct the participants’ experiences of oppression and AM (Seidman, 2006).

This study used a phenomenology of practice design (van Manen, 2014). Phenomenology is a form of qualitative research that explores the “theoretical point of view advocating the study of individuals’ experiences because human behavior is determined by the phenomenon of experience, rather than objective, physically described reality external to the individual” (Sloan & Bowe, 2014, p. 2). The goal of a phenomenological study is to gain meaning by analyzing spoken or written language. Phenomenological studies occur as a group of people are experiencing a particular circumstance. Through participant stories and descriptions, the researcher can gain an understanding of the “essence” of the phenomenon (Creswell & Creswell, 2018, p. 13). Phenomenology was chosen as the research design for this study since it was best suited to explore the experiences of women as they undergo the phenomenon of AM.

Phenomenology of practice, postulated by van Manen (2014), bisects the traditional methods of Husserl and Hermeneutic phenomenologies. Husserl phenomenology is a form of
descriptive philosophy that looks to explain the “essence” of experiences, whether they are “real or imagined, empirically measured or felt” (van Manen, 2014, p. 94). According to Husserl, one must “bracket” or suspend their previous opinions to describe a phenomenon fully. Husserl’s transcendental phenomenology also suggests that there can be no clarity if there is more than one reality (Rapport & Wainwright, 2006). This perception would limit my study in that each participant’s experience of AM may be different, leading to multiple realities. Hermeneutic or interpretive phenomenology studies are concerned with the lived experience of the participants as they experience the phenomenon. As posited by Heidegger, the goal of hermeneutic phenomenology is to create meaning and understanding from described encounters of an experience (Laverty, 2003); thus, there are multiple realities. Hermeneutic phenomenology explores lived experiences as they are occurring. While this study occurred during the semester, it also incorporated reflective narratives, thus eliminating the full reliance on hermeneutic phenomenology.

Phenomenology of practice incorporates both seminal as well as unfolding works of phenomenology as characterized by feminist research methodology (Beetham & Demetriades, 2007). The use of phenomenology of practice is applicable to professional practice as well as the “personal and social practices of everyday living” and looks to describe the “meaning of meaning in human life” (van Manen, 2014, p. 213). Using phenomenology of practice for my study enabled me to incorporate a variety of unfolding theories in my attempt to present the lived experiences of AM that align with the feminist methodological approach (Hesse-Biber, 2013). I incorporate de Beauvoir’s gender phenomenology (Heinämaa, 1999), in which she attempted to understand dominance by men and oppression of women, as an exploration of AM within the SCM. Schutz’s sociological phenomenology (Natanson, 1966) opened up a discussion of the
multitude of realities developed from everyday human encounters. Romano’s eventual phenomenology (van Manen, 2014), which attempts to explain meaningful events and how factual encounters may become profound, assisted with an investigation of the event of AM. The multiplicity of exploration offered phenomenology of practice positions as the best methodology choice for this study.

**Sampling/Participants/Setting**

The sites selected for this study included various higher education institutions across Northeastern U.S. metropolitan and suburban areas. Participation solicitation requests were sent to community, state, and private colleges that offered many STEM courses. In addition, expanding the participant selection beyond a suburban area provided a greater diversity in participant responses, thereby following feminist research by exploring gender perspectives and integrating diversity (Beetham & Demetriades, 2007).

The selection process was through a homogeneous snowball sampling (Etikan et al., 2016) of female STEM faculty from colleges throughout a Northeastern metropolitan and suburban region. The sampling size was 15 female STEM faculty based on Creswell and Creswell’s (2018) recommendation of a range of 3-10 participants and stopped at a point of data saturation (Creswell & Creswell). Saturation occurs when there is no uncovering of new themes through faculty member interviews. While interviewing to the point of saturation is desired to gain a deeper understanding of the phenomenon, a limiting factor in the sampling size was due to the fact that there appears to be fewer female faculty than male STEM faculty at some locations.

**Study Participants**

Participants were chosen based on their sex, faculty status, and years of experience. Specifically, I sought female faculty who teach high-stakes courses, defined here as being pre-
requisite requirements for majors such as physical therapy assistant, nursing, and engineering. Should a student score below C+, they may not continue on to other required courses within their program. Faculty teaching these courses may experience a higher-than-average level of work demands, either through the needs of emotional support or academic entitlement, such as pressure to give extra credit or give a higher grade so students can enter the next course of study (Cain et al., 2012; Scott et al., 2014). The participants in this study were both full-time and part-time female STEM faculty. One reason to interview full-time as well as part-time faculty was to examine any differences in their experiences of AM. The lower number of full-time female STEM faculty could lead to an inadequate number of participants for this study, adding to the reasoning in choosing to interview both full-time and part-time faculty.

Initial participant selection occurred via oral invitation with a clear definition of AM and study parameters fully discussed. More participants were elicited via snowballing sampling, which involved asking selected participants for recommendation of others who may be interested in being a part of a study. These decisions sped the process of participant recruitment and directed me to otherwise unreachable recruits (Ghaljaie et al., 2017). By asking participants to recommend other female faculty, I was ensured of being directed to those who are interested in participating in the study and who shared the same social experience of oppression due to a male-dominated institutional system. Once I was contacted by potential participants, I provided an email with an outline of the study for their consideration (Appendix B).

I sought faculty who have been teaching a STEM course(s) for at least two semesters as a full-time faculty member and four semesters as a part-time faculty member. The time requirements were based on ensuring that the faculty have enough classroom experience to fully discuss their experiences of AM, to allow for reflection on several semesters and to ensure they
have taught before and during the COVID-19 pandemic. Full-time faculty teach a greater number of courses per semester than part-time faculty, thus the semester number requirement in this study. Given that there are fewer full-time female faculty at the three college locations, I anticipated that many of the participants would be adjunct faculty.

**Data Collection**

For this phenomenological study of AM and gendered classroom role perceptions, I conducted a series of three 60-minute, in-depth, open-ended interviews focusing on the participants’ lived experiences and perceptions of their classroom roles as academic moms. The rationale for conducting three interviews was to follow the female faculty’s lived experiences over the course of a semester. The interviewed conversations overlapped in discussion topics, with the goal being to delve deeper into the phenomenon of AM as the semester progressed.

**Interview Process.** The interview process began after IRB approval of the study (Appendix A). I orally discussed the study with several colleagues, with the hope that they would direct me to potential participants. An interview protocol (Appendix C) was presented to potential participants, who were female STEM faculty teaching high-stakes courses. A summary of the study’s purpose was included as well as a definition of AM. Interviews were conducted at times convenient for the participant via Zoom conference calls due to COVID-19 campus restrictions as well as campus distance restrictions. Prior to each interview, the participants signed an informed consent form (Appendix D), which is secured on my personal computer.

Although Seidman (2006) recommended three 90-minute individual interviews, this study deviated slightly to include a focus group for the third interview. Incorporation of a focus group is suggested when utilizing feminist research methods. Focus groups, which are considered informal discussions, can enhance studies by enhancing meaning making and moving
the interview focus from the researcher to the interviewees (Wilkinson, 1999). Feminist methodology suggests the use of focus groups to gather information from a group of people in a short amount of time (Hesse-Biber, 2013). By conducting interviews as well as a focus group session, I was able to better explore the participants’ thoughts and ideas that have been silenced through male-dominated research practices (Reinharz & Davidman, 1992).

The topics for the first interview included (a) a focused life history, (b) details of the experience with the focus group, and (3) a reflection on the meaning (Seidman, 2006, pp. 17-18). I asked the participants permission to audio-record our conversations and secured written permission in a consent form. As per Seidman, the first interview was on a focused life history putting their experience of AM into the context of their family, school, and work. This interview consisted of questions focusing on how the participant came to become an educator. I inquired as to why they chose to teach STEM, whether they have had any other careers, and whether they taught other courses. The initial interview served to create rapport with the participant. Within feminist research methodology, there is a reduction of hierarchy between the interviewer and interviewee. Feminist theory and research attempt to explore the oppression of marginalized groups, so research methods must move away from the positioning of the researcher in a dominant role. The dynamic of feminist interviews is that of dialogue and collaboration, thus providing support and encouragement to allow the participants to fully express their experiences (Hesse-Biber, 2013). I encouraged the participants to narrate their experiences in academia from the past to present time.

A second interview was conducted approximately three to four weeks later. This interview focused on the concrete details of female faculty’s experiences of AM as well as the influence of stereotypes on their feelings. I asked the participants to reconstruct the details of
Their experiences of the AM phenomenon through stories of encounters with students and colleagues. Questions were positioned in relation to the AM phenomenon. The goal of this interview was to examine perceptions of the female faculty’s perceived role by providing firm details of their lived experiences of AM and stereotype. I asked the participants to fully describe a day or two of their experiences in rich detail. The participants were asked to compare, through memories and reflection, their experiences of AM pre and post COVID-19. This enabled the participants to place their experiences of AM within context.

The third interview, the focus group, was conducted approximately at the end of the semester. The purpose of the final interview via focus group was to reflect on the meaning of the participants’ experiences as female STEM faculty. I looked for the intellectual and emotional connections between work and life as well as reflections on past experiences with successes and failures and how these impacted their career (e.g., self-efficacy questions as they relate to the phenomenon of AM). The interview focused on what it meant to the participants to be an AM as well as how they made sense of their experiences of AM. This interview provided a final reflection on the participants’ experiences of AM and allowed me to summarize their past and present classroom experiences. Utilizing a focus group for the final interview allowed the emergence of previously unspoken dialogue since some participants may have felt more liberated with the knowledge that other women share the same feelings (Haig, 1997).

As the interviews were recorded, I took field notes, making note of when participants emphasized points, their comfort level, body positioning, and changes in demeanor as the conversation progressed. After each interview, I made sure I followed up with the participants for accuracy in data collection. This check-in procedure ensured the validity of data collection and allowed me to correct any inaccuracies. During the first interview, I focused on the accuracy
of the complete career trajectory of the participants. Any thoughts on student interactions and relationships were also noted. The second interview delved deeper into the participants’ lived experiences of stereotype and AM. Reflections on pre and post COVID-19 were examined. The final interview provided an opportunity for reflection and final thoughts.

**Role of the researcher.** The foundation of my role in this study comes from my 16 years of experience as a full-time faculty member of anatomy and physiology at a community college and as an adjunct at two four-year colleges. I am responsible for teaching a core course to pre-health program students. In addition, I am a course coordinator for anatomy and physiology and am responsible for curriculum development. The course I coordinate and teach, Anatomy and Physiology I, is a prerequisite for acceptance into health programs. Anatomy and Physiology I is a high-stakes course since it is a requirement for entry into health care programs. From my own teaching experiences, I have found that the level of pressure experienced by students who hope to gain acceptance into a program leads some students to prefer to cultivate relationships with their female faculty. Relationship seeking is due in part to a need for a nurturing and non-threatening classroom environment (Anderson & Carta-Falsa, 2002).

Learning within a high-stakes course is enhanced with academic “hand holding” for some students; thus, they seek out relationships with their female faculty. I have had many experiences of student relationships, including roles as an “academic mother.” While I have firsthand experience of academic mothering, I sought to avoid any personal bias in my role as the researcher. My job was to describe the participants’ experiences clearly and fully. Through phenomenology, the researcher describes what individuals may share in common while experiencing this phenomenon (Creswell & Creswell, 2018). My role as the researcher was to examine and gain an understanding of female faculty perceptions of AM.
My personal experience as an educator allowed me to easily engage in interview discussions with colleagues. My epistemological approach was that of an insider since I have experiences of AM and increased emotional workload. The interview protocol was standardized and open-ended, meaning that each participant was asked the same set of questions but given an opportunity to elaborate on their responses. I chose this procedure as opposed to a semi-structured design, such as informal interviews, to account for my personal bias. I limited my opportunity to interject my experiences and possibly skew participant discussion by providing more structure to the interview process. The conversations focused on participants’ experiences and feelings with AM and the perceived influences these experiences may have had on their academic role perceptions and possible career trajectory. The interview process, discussions, and analysis of data allowed me to become part of the world of the interviewed participants (Hycner, 1985) to understand their experiences of AM.

In my role as a social constructivist, my personal understanding of AM enabled me to delve more deeply into the participants’ experiences and enabled me to form a connection with the participants that an outsider would have difficulty achieving. This shared connection created a comfortable environment, allowing the participants to express their experiences freely and fully. My insider status was also advantageous in formulating interview questions that were relevant and relatable to their experiences.

While being an insider, it was important for me to remain unbiased. My questions were semi-structured and consistent for each participant. I member-checked to clarify perceptions and experiences. I was open to any answer and did not have preconceived expectations of participant responses. Participant data was presented accurately through their own words, with no harmful or identifying information disclosed.
Data-Analysis Procedure

The data-analysis process applied feminist research methods. In addition to using gender and oppression as lenses, my analysis expanded on my role as an insider. I relied heavily on reflexivity to account for my personal bias since I am an insider to this study. This allowed me to account for my own personal bias as I interpreted the data (Hesse-Biber, 2013). While the data analysis was conducted using feminist methodology, I also hoped to analyze the data through the lens of intersectionality. Using this approach would enable me to look for patterns and themes within populations of women and apply my findings to a range of women looking at the intersection of class, race, and ethnicity (Hesse-Biber, 2013) and consider the diversity and uniqueness of each participant’s experiences (Beetham & Demetriades, 2007). Unfortunately, the participant pool lacked diversity; this is addressed in Chapter 5.

Data analysis occurred throughout the study. Interview transcription and organization of field notes occurred immediately following data collection. Transcription of notes occurred using a secure online application, Trint.com. Pseudonyms protected the participants’ identity. After the online transcription process, the transcripts were double-checked for accuracy by reviewing the recorded interview and generated notes. Any errors were manually adjusted for and followed Hycner’s (1985) guide to phenomenological analysis.

Following the transcription process, I looked for emerging themes and patterns. Hycner (1985) stated that the researcher will be more open to understanding “whatever meanings emerge” (p. 280) from the interview process. This process enables the researcher to gain a “sense of the whole” (Hycner, 1985, p. 281) participant experience. This required listening to the interview recordings multiple times and then reviewing and confirming the accuracy of my
transcriptions. The field notes were reviewed, followed by in vivo coding, making note of words directly from participants and using their own language (Saldana, 2013). Language, both spoken and unspoken, is crucial in conducting feminist research to get at the essence of the situation or phenomenon studied (Hesse-Biber, 2013). Reviewing the field notes enabled me to better understand the participants’ experience and increased my awareness of non-verbal cues, any intonations or inflections, emphasis, pauses, and body posturing during the interview.

I followed the coding process based on Saldana (2013) and Marshall and Rossman (2014) guidelines. The process that was followed is similar to Saldana’s approach of theming the data. This inductive approach “allows categories to emerge from the data” (Saldana, 2013, p. 177) as opposed to approaches that begin with predefined categories. After the transcription process was completed, each transcription was re-read and included an initial scan of the content, with any ideas or thoughts that stood out to me were noted. Comments that were aligned with the theories of AM and SCM were also scanned for. These included perceptions of AM, gender, workload, or perceptions of faculty member role. I followed the same procedure with the field notes, noting any body language or changes in intonation regarding my developing themes. After the readings and note taking, I assembled thoughts and commentaries into more specific recurring categories or themes. After the initial categorization, I repeated the entire process with the goal of creating subcategories.

Once the recordings, transcriptions, and field notes were reviewed, they were uploaded to the Dedoose coding platform. This enabled me to look for patterns and themes of expressed feelings and experiences. Hycner (1985) referred to such patterns within an interview as “units of general meaning” (p. 281). To gain this knowledge, I had to examine the spoken words of the participants and relate these units of meaning back to my original research questions.
Follow-up emails allowed me to review the final processing of the transcriptions and to ensure that the participants agreed with my summary of their experiences. The goal of a follow-up email was to ensure full understanding of the essence of the participants’ experience. I verified whether the participants had anything more to add. If they did, the themes and summary were reviewed and modified as needed. The recurring themes within all the interviews were identified, common ones being clustered and outliers noted. The themes were placed into context to create a melded summary of all the interviews, with the themes relating to my research questions. This organization of information created a window into the participants’ world and their perceptions of classroom role as AM.

**Validity.** The purpose of validity is “to check for accuracy and credibility” (Creswell & Creswell, 2018, p. 199) within the findings. A variety of procedures were used to ensure validity. Using a three-interview procedure, the participants’ descriptions were placed into context and ensured consistency across all three interviews (Seidman, 2006). Member checking permitted my reports of participant experiences to be accurate. I member-checked my detailed field notes and the collected interviews of female faculty. Any other materials the participants wished to share with me to elaborate on their experiences, such as personal class notes or anonymous emails, were also welcomed.

My data analysis added to the validity of this study through the establishment of themes (Creswell & Creswell, 2018). In addition, all interview data accounted for both positive and negative aspects presented by the participants. Also, the acknowledgement of my own biases in relation to the topic of this study further enhanced its trustworthiness. To diminish personal biases, I was reflexive in the analysis of findings and was aware of my positionality. As an insider for this study, I needed to verify my findings with the participants. This confirmed that
their perceptions and experiences were presented as they lived through them, not through my own biases.

**Reliability.** The purpose of reliability is to ensure that the data-analysis procedures are consistent and appropriate (Creswell & Creswell, 2018). According to Leung (2015), reliability in qualitative research is more difficult to ascertain than quantitative research and relies on the consistency of results. In this study, the interview recordings were transcribed and double checked for accuracy, with correction of any process errors. The data presentation was comprehensive. Coding definitions were written down and referred to throughout the coding process. This ensured no deviation from the meaning of the original coding.

**Ethical Considerations**

Following ethical guidelines ensures the protection and trust of participants in the study by anticipating any ethical concerns. Creswell and Creswell (2018) provided a checklist of ethical concerns, which I referred to throughout the research process. The initial step in my research was the provision of informed consent forms for participants to sign. The informed consent was written in language understood by all participants and included the number of meetings, the interview process including the anticipated length of time, the data-collection procedure, an overview of the study, and a broad explanation of topics to be discussed. The use of pseudonyms ensured the protection of the participants’ identities. I informed the participants that they may withdraw from the study at any time.

Ethical concerns were foundational in the collection and analysis of data using the internet (Creswell & Creswell, 2018). All collected data transcriptions, electronic documents, and recordings were stored on my personal computer. My computer has facial recognition for authentication and is secured for data storage. The use of pseudonyms and use of cloud-based,
password-protected files assured privacy of data. I asked for permission to use quotes, email information from other sources, as well as photographs or other personal items within my study. Data were presented in entirety and will be stored for three years on my personal computer and Dedoose coding platform (Creswell & Creswell, 2018, p. 90), which is password-protected on my personal computer. I honored any participants’ requests not to use certain pieces of collected data. Data files are also password protected and saved in a cloud-based system.

The interviews were conducted via Zoom due to the COVID-19 pandemic restrictions. This online platform also prevented any privacy concerns of students or other faculty seeing a participant working with me. I made sure that participants were aware that I was audio-recording our interviews as well as taking field notes. The interview process consisted of open-ended questions. This enabled the participants to express their lived experiences freely. Any probing questions delved deeper into their perceptions and feelings of student relationships, AM, and emotional workload.

**Limitations**

There were several limitations to this study. One such limitation was that the location of one study site was at a suburban community college. The student–instructor dynamic may be different from a larger four-year college. Admissions at community colleges generally do not require SAT scores. This may reflect on student academic skills in that the admitted students may not have met certain academic landmarks (Wyatt et al., 2011). Lack of college readiness may influence the students’ academic neediness, thus altering student–instructor relationships and faculty perceptions of AM. There is the possibility that the findings would differ in an urban or rural setting. Other parts of the country may have differing perspectives of AM as well as areas with demographics different than this study’s site locations. Another delimitation of this
study was the focus on female faculty as “academic mothers.” It may be possible for male faculty to have perceptions of “academic dadism.” This study does not examine the possible relational dynamic between male faculty and students and limits the ability to make generalizations about AM. “Academic dadism” could be worth exploring in another study.

A reliance on faculty member memories and interviews can act as a limitation. The reflections may represent biased perceptions. The narratives are also only a snapshot of an instance and may not fully capture the full experience of AM. In addition, what one faculty member perceives as “emotional workload” may not be the same for another. Given this potential discrepancy, I made sure to ask probing questions to fully understand each participant’s definition and perception of “emotional workload.” Participant limitations include whether participants are truthfully describing their experience or if their story would be different if told to another interviewer (Seidman, 2006).

My biases may act as a limitation through my preconceived perceptions of workload as well as AM. Although my insider status can create a blind spot to the context of the AM experience of the participants, it also enables me to reflect on my own role as a faculty member and academic mother. COVID-19 is a major limiting factor in this study due to the resulting lockdown. The student–instructor dynamic has been radically altered due to the lockdown and the move to online learning. Teaching experiences have changed from everyday face-to-face contact to remote/synchronous, hybrid, asynchronous, and hy-flex learning platforms and require little or no visual interaction. In these contexts, such interactions between faculty and students may alter female faculty’s perceptions of their role. Student online learning comfort levels may also exacerbate their neediness of female faculty in ways not normally experienced in face-to-face learning environments.
Conclusion

Using qualitative feminist research methodology and a phenomenological design, I examined female college faculty’s perceptions of their classroom roles as *academic mothers* (Bernard, 1964). This concept suggested that female STEM faculty are viewed as being like mothers and should be “more lenient and patient” with students than male faculty (Rubin, 1981, p. 967). I used the stereotype content theory, which describes the perception of women as warm and nurturing (Cuddy et al., 2009). Through feminist lens of oppression and FST, I examined female faculty’s perceptions of AM. This provided an understanding of faculty’s experiences of their classroom role as academic mothers and how it relates to student interactions, institutional expectations, and the potential presence of increased emotional workload. This may lead to an explanation of the lack of female faculty member presence in STEM programs of study.

Although a number of quantitative studies have examined AM and faculty member perceptions (e.g., Burke et al., 2017; El-Alayli et al., 2018; Rubin, 1981), there is only one qualitative study focusing on AM (Baker, 2016). This study addressed a gap in the literature by adding to the scant qualitative research studies through a phenomenological, inquiry-based approach. I presented the perceptions of female college faculty’s roles over the course of a semester. This study involved the transcription and coding of interviews. I also reviewed field notes and any artifacts, such as student emails, that participants wished to share with me. Based on the information provided, I member-checked all presented information and materials to gain a deeper understanding of the participants’ experiences.

Using the utmost ethical consideration, I looked for recurring themes using *Dedoose* software. Such thematic analysis helped me to examine the female faculty’s experiences.
Information collected was elicited through open-ended, non-leading questions. I was sure to present all views and feelings, both positive and negative, regardless of my own views.

It is important to gain a deeper understanding of female faculty’s perceptions of their roles. The higher education job gender gap still exists despite progress towards closing it. (Hart, 2016; LaCosse et al., 2016; O’Connor, 2019). Male faculty are still perceived as competent and tend to obtain higher-level positions, while female faculty are viewed as warm and nurturing, thus being academic mothers (Baker, 2016; El-Alayli et al., 2018). This perception of female faculty may lead to increased emotional workload and job dissatisfaction. It is important to understand the phenomenon of AM to better comprehend what leads to such feelings and how faculty may address them. Chapter four presents a detailed discussion of the development of categories thorough data collection, analysis, layers of coding and organization into themes. These steps are presented along with excerpts of participant interviews to give a clearer view of the process involved for analysis and theme development.
Chapter 4

Results

*I know colleagues who would say that they feel like they have been held down every step of the way by being a woman.*

– Beth (personal communication, October 19, 2021)

The research conducted in this study explored female STEM instructors’ experiences of the AM phenomenon within the context of teaching high-stakes courses. Gendered expectations may position female STEM instructors into more oppressed roles than their male colleagues. Teaching high-stakes courses may add another level of stress for female academicians due to student grade demands. In addition, student perceptions of their female instructors as academic mothers may play a role in career navigation, with some female instructors using this position as a navigating tool to succeed in their career and others rejecting the role. These predetermined perceptions guided the structuring of the research questions and were discussed during the participant interviews. These perceptions also align with the frameworks of feminist theory and the stereotype-content model (Cuddy et al., 2008).

The perceptions of female STEM instructors’ roles within the institution and classroom could have an impact on their career path. Feelings of being an academic mother can influence this path either positively or negatively on many levels. There is a lack of studies examining female STEM instructor experiences in their own words, indicating the importance of this dissertation study.

Role of the Researcher

To fully present the participants’ experiences, this chapter is divided into three parts. Part 1 provides a description of the data collection and analysis process. Part 2 presents the
phenomenological analysis and emergent themes of the instructor perceptions of teaching and AM. Part 3 provides a discussion of the categories and themes used to describe the participants’ experiences of AM as expressed in the transcribed interviews.

Data Collection and Analysis

Participants

The participants in this study were female STEM faculty members who teach at community colleges, four-year state colleges, and private universities across Long Island and the metropolitan area. There were 15 female participants who volunteered in the study and were obtained through snowball sampling. There were 73.3% (n = 11) full-time (tenured and non-tenured) and 26.7 (n = 4) adjunct (non-tenure track) faculty members. The participants taught various STEM areas that included allied health science, biology, engineering, mathematics, and physical science. Teaching assignments included both high-stakes and low-stakes courses. The participants were asked demographic questions to ensure the diversity of lived experiences. Pseudonyms, chosen by the participants, were used to ensure anonymity. I am the only person with access to their true identities. A summary of the participant demographics is presented in Table 1.

Although there is diversity in the number of years of teaching among the participants, there is a notable absence of racial/ethnic diversity. Only 26.7% (n = 4) of the participants identify as non-White. This is further discussed in the limitations of the study section in Chapter 5. The majority of the participants identified themselves as middle aged, while one participant identified themselves as mature, and another identified themselves as young. The institution types included the following distribution: 46.7% community (n = 7), 33.3% private (n = 5) and 20% state (n = 3). Two participants reported teaching concurrently at two different institutional categories, with
one teaching at a state and private institution and another teaching at a state and community college. Most of the participants taught at institutions given a Carnegie ranking of teaching, while two participants taught at research institutions. There was an even distribution of participants teaching biology courses compared to anatomy and physiology. Only one participant reported teaching mathematics, two taught physics, and two taught engineering. The majority of the participants had full-time positions (73.3%; \( n = 11 \)) and were tenured (60%, \( n = 9 \)), with 26.7% \( (n = 4) \) holding part-time, non-tenure track positions. None of the participants reported teaching solely low-stakes courses. The majority of the participants reported teaching only high-stakes courses (60%, \( n = 9 \)), with 40% \( (n = 6) \) reporting teaching both high-stakes and low-stakes courses. Years of teaching experience ranged from 3 to 37 years.
Table 4.1  

Participant Demographics

<table>
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<tr>
<th>#</th>
<th>Pseudonym</th>
<th>Age</th>
<th>Race/Ethnicity</th>
<th>Institution Type</th>
<th>Carnegie Classification</th>
<th>Subject Area</th>
<th>Workload</th>
<th>Type of Position</th>
<th>Course Type Taught</th>
<th>Years Teaching</th>
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<td>White</td>
<td>Community</td>
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<td>Full-time</td>
<td>Tenured</td>
<td>Both high and low stakes</td>
<td>37</td>
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<td>White</td>
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<td>Teaching</td>
<td>Physics/Math</td>
<td>Full-time</td>
<td>Tenured</td>
<td>Both high and low stakes</td>
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<td>State</td>
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<td>Part-time</td>
<td>Non-tenure track</td>
<td>Both high and low stakes</td>
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<td>Community</td>
<td>Teaching</td>
<td>Biology</td>
<td>Full-time</td>
<td>Tenured</td>
<td>Both high and low stakes</td>
<td>20</td>
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<td>Young</td>
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<td>Biology/Microbiology</td>
<td>Full-time</td>
<td>Tenure track</td>
<td>High stakes</td>
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<td>6</td>
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<td>Young</td>
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<td>Private</td>
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<td>Mathematics</td>
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<td>High stakes</td>
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</tr>
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<td>Institution</td>
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<td>Full-time?</td>
<td>High stakes</td>
<td>Status</td>
<td>Notes</td>
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<td>----------</td>
<td>------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Bella</td>
<td>Middle</td>
<td>White</td>
<td>Community State</td>
<td>Teaching</td>
<td>Part-time</td>
<td>Non-tenure track</td>
<td>High stakes</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Tia T</td>
<td>Middle</td>
<td>White</td>
<td>Community Teaching</td>
<td></td>
<td>Full-time</td>
<td>Tenured</td>
<td>High stakes</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Science Female</td>
<td>Mature</td>
<td>White</td>
<td>Community Teaching</td>
<td></td>
<td>Full-time</td>
<td>Tenured</td>
<td>High stakes</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Kathy</td>
<td>Middle</td>
<td>White</td>
<td>Community Teaching</td>
<td></td>
<td>Full-time</td>
<td>Tenured</td>
<td>Both high and low stakes</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Beth</td>
<td>Young</td>
<td>White</td>
<td>State</td>
<td>Teaching</td>
<td>Full-time</td>
<td>Tenured</td>
<td>High stakes</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Tiffany</td>
<td>Middle</td>
<td>White</td>
<td>Private</td>
<td>Teaching</td>
<td>Full-time</td>
<td>Tenured</td>
<td>High stakes</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Elora</td>
<td>Middle</td>
<td>White</td>
<td>Private</td>
<td>Research</td>
<td>Part-time</td>
<td>Non-tenure track</td>
<td>Both high and low stakes</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Hannah</td>
<td>Middle</td>
<td>Middle Eastern (Iran)</td>
<td>State</td>
<td>Teaching</td>
<td>Engineering</td>
<td>Full-time</td>
<td>Tenured</td>
<td>High stakes</td>
<td>15</td>
</tr>
<tr>
<td>15</td>
<td>Anna</td>
<td>Young</td>
<td>Asian (India)</td>
<td>State</td>
<td>Research</td>
<td>Engineering</td>
<td>Full-time</td>
<td>Tenure track</td>
<td>High stakes</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: Age was not considered as a variable in this study but is briefly discussed in Chapter 5. The age range was determined based on overt statements and field notes. The definitions are: young (up to 40 years), middle (41-64 years), and mature (65+).
Data Collection

Data collection occurred during four months, from September through December 2021. The data were collected from a series of three interviews, which included two individual interviews per participant lasting one hour each, plus an additional optional focus group interview that lasted approximately two hours. The individual interview questions focused on personal classroom experiences and perceptions, while the questions for the focus group centered on advice for future teachers. The parameters of the study (voluntary participation, ability to stop at any point in the study, interview sequence) were reviewed with the participants prior to the interviews. Participant permission to record the interviews (via video and audio) was also secured. The purpose of doing two recordings was to have a back-up in case the Zoom recordings did not convert and save properly. While probes were used to clarify questions or information recollection, they were not used to sway the results in a biased direction.

While conducting the interviews, I took detailed field notes that reflected the demeanor, tone, mannerism, and mood of the participants. I also made note of the participants’ setting. My purpose was to keep a record of participants’ comfort level, freedom to speak freely, as well as emotional weight of the responses to the questions. Facial expression can convey more meaning than words alone and I wanted to be able capture the nuances. While taking field notes, I also recorded my personal thoughts and observations about their responses. This process acted as a foundation for what would become some of the in-vivo codes.

After each interview, I immediately uploaded the audio recordings to an online application (Trint) for transcription. I listened to the recordings again and manually reviewed what the application had transcribed, taking time to correct punctuation, spelling, and remove irrelevant words or phrases such as “ummm” and “uh.” This created an “intelligent
transcription,” which was used for coding purposes. In several transcriptions, this manual step clarified the meaning of what was transcribed via the application. The edited versions were saved on my personal laptop that are double-password protected. After completing the edits, I immediately uploaded the edited transcriptions onto the Dedoose software, which is a coding platform. Using coding software helped me visualize and organize my transcripts. I was able to view parent and child codes simultaneously in the coding key. The software also permits color assignment to codes, easing the visualization of overlapping emerging themes.

Coding

The initial codes were derived based on the frameworks of the SCM and feminist theory. Additional codes were constructed from the literature review as well as the participants’ words. Some narratives overlapped in categories and were coded multiple times. Table 4.2 presents the codes used to analyze collected data.

Data Analysis

The nature of qualitative research is to gain meaning of an individual's experience in a given moment of time (Merriam, 2002). Qualitative coding uses words or phrases to capture the essence of the individual's experiences. Saldana (2013) referred to the first and second cycles of coding. The first cycle of coding can involve in-vivo coding where one makes note of repeating or emphasized terms as well as initial codes derived from theories. The second cycle of coding in this study was axial in which the data were organized to create links between the participants’ experiences. In my first cycle of coding, I re-read each transcript, highlighting thoughts that the participant emphasized or were important to the context of the research questions. Through this in-vivo coding or descriptive coding step (Saldana, 2013, p. 70), I looked for repeating words and thoughts and used them as “parent codes” in Dedoose. The first layer of coding included
broad descriptors such as “support” or “role perception.” Sub-codes described the parent code and were established as “child codes” (Saldana, 2013, p. 77). Examples of sub-codes for support included institutional, colleagues, and family, whereas the examples of sub-codes for role perception included mentor, approachable, and mother.

Additional codes were created, which aligned with the theoretical framework and literature review. I read through each transcript and assigned codes to portions of the text, which I aligned with each code. Repeating this process twice ensured that almost all the participants’ keywords and phrases were categorized and assigned a code.

**Table 4.2**

*Theory-Driven and In-Vivo Coding*

<table>
<thead>
<tr>
<th>Theory-Based Codes</th>
<th>In-Vivo/Descriptive Codes</th>
<th>Expectations and Effects of Prescriptive Stereotyping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency</td>
<td>Stereotype</td>
<td></td>
</tr>
<tr>
<td>Communal</td>
<td>By the institution</td>
<td></td>
</tr>
<tr>
<td>Gender Roles</td>
<td>By colleagues</td>
<td></td>
</tr>
<tr>
<td>Patriarchy</td>
<td>By students</td>
<td></td>
</tr>
<tr>
<td>Stereotyping</td>
<td>Females are nicer/</td>
<td></td>
</tr>
<tr>
<td>Work-life Balance</td>
<td>Males more academic</td>
<td></td>
</tr>
<tr>
<td>Workload</td>
<td>Student gender</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Systemic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No perceptions of stereotyping</td>
<td></td>
</tr>
<tr>
<td>Burnout/Tired</td>
<td>Service Work Expectations</td>
<td>Not/Affected by gender</td>
</tr>
<tr>
<td>Emotional Workload</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Opportunities</td>
<td></td>
<td>Workload</td>
</tr>
<tr>
<td>Held back</td>
<td>Expectations of women</td>
<td></td>
</tr>
<tr>
<td>Not held back</td>
<td>Burnout/Tired</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emotional Workload</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Job Opportunities: Held back</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not held back</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student-Oriented Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student relationships</td>
</tr>
<tr>
<td>Avoid</td>
</tr>
<tr>
<td>Seek</td>
</tr>
<tr>
<td>Enjoy</td>
</tr>
<tr>
<td>Boundaries</td>
</tr>
</tbody>
</table>
The transcribed interviews were uploaded into the Dedoose online coding platform. Codes derived from reading the interviews were programmed as parent codes, with sub-codes labeled as child codes. Text from the transcribed interviews were assigned codes. This process was repeated twice. Post Dedoose coding, I developed a chart of the coding along with participant quotes that best exemplified each code (Table 4.3). Through the process of axial coding (Saldana, 2013), I organized and collapsed the smaller codes into broader chunks or
concepts. Saldana referred to this reorganization as the *second layer of coding*. Seeing which codes shared similarities allowed me to focus on dominant or best representative codes and use them to create the foundation for establishing my categories. Table 4.4 presents how I organized the data through the first and second layers of coding.

**Table 4.3**

*Excerpts of Codes: First Layer*

<table>
<thead>
<tr>
<th>Code</th>
<th>Code Definition</th>
<th>Excerpt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oppression</td>
<td>Sense of being held back from roles, advancement, and respect by males.</td>
<td>“I said, to defer to him, ‘Would you like me to be listed as Dr. Elora instead?’ And he went, ‘Oh, yes, absolutely. Yes, because you're not a professor. I understand that students will call you that, but yes, but you're not a professor, and so it wouldn't be appropriate for you to be listed as a professor.’” – Elora</td>
</tr>
<tr>
<td>Job Equity</td>
<td>Lack of equitable pay and course offerings as male colleagues.</td>
<td>“I’m pigeonholed in what I can teach, and no matter what qualifications I have, it’s scrutinized a lot harsher than other people.” – Kathy</td>
</tr>
<tr>
<td>Work-life Balance</td>
<td>Struggle to maintain a career while fulfilling societal expectations of being the home maker and care giver.</td>
<td>“I started my master's degree thinking, you know, you can do your master’s with having still little kids, and I used to bring my daughter to the laboratory with me, but it became too much. So it is expected for me to stay home and raise the children, and not him.” – Peeled Grapes</td>
</tr>
<tr>
<td>Communal</td>
<td>Sense of fulfilling societal expectation of women as warmer and kinder.</td>
<td>“I think in the classroom, that as a female prc we show we are caring or accommodating.” – Apex</td>
</tr>
<tr>
<td>Overcoming Stereotyping</td>
<td>Ways in which female STEM faculty have overcome the patriarchy.</td>
<td>“When you need to, you need to stand up for yourselves. I think a lot of the time, we tend not to; that’s not what women do but strong women do.” – Tia</td>
</tr>
</tbody>
</table>
| Role Perception       | Perceptions of classroom role by                                              | “Well, they’re expecting that of us. We are taught to be mom in that. And even if
phenomenological studies look to explain how people “make meaning” of an experience within a specific context (Creswell & Creswell, 2018). To fully present the participants’ experiences of AM, I needed to establish categories that best organized shared perceptions, thoughts, and feelings. I accomplished this by creating a visual overview of my codes. I wrote each code on index cards and color-coded them according to 23 in-vivo or open codes (blue) and five theory-driven codes (red). The first round of categorizing the codes was organized around the theories of SCM and feminism. After reflection, I reorganized the cards based on clusters of coded perceptions. It appeared that the parent codes revolved around stereotype, instructor perceptions/experiences, and student behaviors (Figure 4.1). Laying out the index cards gave me a greater, more tangible visualization of the codes and enabled me to see how I might collapse them more. I reviewed the codes and looked for similar patterns in order to group them. I conducted this process twice.

Based on the layout, I divided the cards into groupings relating to institutional and systemic stereotyping (institution), instructor perceptions (self), and student behaviors (student) (Table 4.4). These groupings lead to the formation of categories. The developing categories were defined further in the theme section, where I more clearly described the relationship of stereotype, faculty members, and students in my study.
Figure 4.1:

*Step 1: Organization of codes to categories*

![Image of coding organization](image)

**Table 4.4**

*Layers of Coding into Themes*

<table>
<thead>
<tr>
<th>Theme: Systemic/Institutional Stereotyping</th>
<th>First Layer of Coding</th>
<th>Second Layer of Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency</td>
<td>Systemic Stereotyping</td>
<td></td>
</tr>
<tr>
<td>Communal</td>
<td>Stereotype-Driven Expectations</td>
<td></td>
</tr>
<tr>
<td>Gender Roles</td>
<td>Gender roles</td>
<td></td>
</tr>
<tr>
<td>Patriarchy</td>
<td>Communal</td>
<td></td>
</tr>
<tr>
<td>Stereotype</td>
<td>Agency</td>
<td></td>
</tr>
<tr>
<td>By the institution</td>
<td>Patriarchy</td>
<td></td>
</tr>
<tr>
<td>By colleagues</td>
<td>Stereotyping by institution, colleagues, students</td>
<td></td>
</tr>
<tr>
<td>By students</td>
<td>Oppression</td>
<td></td>
</tr>
<tr>
<td>Females nicer</td>
<td>Job opportunities held back</td>
<td></td>
</tr>
<tr>
<td>Males more academic</td>
<td>Lack of equity</td>
<td></td>
</tr>
<tr>
<td>Student gender</td>
<td>Lack of support</td>
<td></td>
</tr>
<tr>
<td>Systemic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ACADEMIC MOMISM

No perceptions of Service Work Expectations
Affected by gender Not affected by gender
Work-life Balance
Workload
Expectations of women
Burnout/Tired
Emotional Workload
Job Opportunities: Held back Not held back

Service work expectations Work-life balance/boundaries Expectations of women

Theme: Teacher-Student Interactions

<table>
<thead>
<tr>
<th>First Layer of Coding</th>
<th>Second Layer of Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student relationships</td>
<td>Student Behaviors</td>
</tr>
<tr>
<td>Avoid</td>
<td>Student low self-efficacy/locus of control</td>
</tr>
<tr>
<td>Seek</td>
<td>Negative behaviors:</td>
</tr>
<tr>
<td>Enjoy</td>
<td>Lack of motivation</td>
</tr>
<tr>
<td>Boundaries</td>
<td>Demands</td>
</tr>
<tr>
<td>Students</td>
<td>Pressure on faculty members</td>
</tr>
<tr>
<td>Expectation: Gender</td>
<td>Taking advantage of faculty members</td>
</tr>
<tr>
<td>Course stakes</td>
<td>Excuses</td>
</tr>
<tr>
<td>Support</td>
<td>Socioemotional Support</td>
</tr>
<tr>
<td>Excuses</td>
<td>Student relationships</td>
</tr>
<tr>
<td>Neediness</td>
<td>COVID</td>
</tr>
<tr>
<td>Negative behaviors</td>
<td>Emotional</td>
</tr>
<tr>
<td>COVID-19</td>
<td></td>
</tr>
</tbody>
</table>

Theme: Instructor Self-Actualization

<table>
<thead>
<tr>
<th>First Layer of Coding</th>
<th>Second Layer of Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role perceptions</td>
<td>Instructor Perceptions</td>
</tr>
<tr>
<td>Role model</td>
<td>Career support</td>
</tr>
<tr>
<td>Facilitator</td>
<td>Role perceptions</td>
</tr>
<tr>
<td>Firm</td>
<td>Instructor motivation</td>
</tr>
<tr>
<td>Instructor</td>
<td>Overcoming stereotypes</td>
</tr>
<tr>
<td>Mother</td>
<td>Going against stereotype driven</td>
</tr>
<tr>
<td>Partner</td>
<td>expectations</td>
</tr>
<tr>
<td>Therapist</td>
<td>Equity</td>
</tr>
<tr>
<td>Equity</td>
<td>Equal job opportunities</td>
</tr>
<tr>
<td>Perceptions of equity</td>
<td>Courses offered</td>
</tr>
<tr>
<td>Perceptions of inequality</td>
<td></td>
</tr>
<tr>
<td>Stereotype Driven Expectations</td>
<td></td>
</tr>
<tr>
<td>Went against SDE</td>
<td></td>
</tr>
<tr>
<td>Overcoming Stereotype</td>
<td></td>
</tr>
<tr>
<td>Push harder</td>
<td></td>
</tr>
<tr>
<td>Women before</td>
<td></td>
</tr>
</tbody>
</table>
STEM is genderless
Sisterhood
Success: Do this
Avoid this

Support
Institutional
Colleague
Mentor
Family
Lack of support
Types of support: Child/family care
Encouragement
Mentoring
Instructor Motivation

<table>
<thead>
<tr>
<th>First Layer of Coding</th>
<th>Second Layer of Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Mother</td>
<td>Mother</td>
</tr>
<tr>
<td>Approachable</td>
<td>Nurturer</td>
</tr>
<tr>
<td>Empathy</td>
<td>Support</td>
</tr>
<tr>
<td>Nurturer</td>
<td>Positive affect</td>
</tr>
<tr>
<td>Supportive</td>
<td>Negative affect</td>
</tr>
<tr>
<td>Contribution</td>
<td>Identifies with AM</td>
</tr>
<tr>
<td>Positive</td>
<td>Does not identify with AM</td>
</tr>
<tr>
<td>Negative</td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td></td>
</tr>
<tr>
<td>Identification: Does identify as an AM</td>
<td></td>
</tr>
<tr>
<td>Does not identify as an AM</td>
<td></td>
</tr>
</tbody>
</table>

The final step in the data analysis was to establish the themes based on the information collected from the interviews. A theme is “an extended phrase or sentence that identifies what a unit of data is about and/or what it means” (Saldana, 2013, p. 175). According to DeSantis and Urgarriza (2000), themes “bring meaning and identity” (p. 358) to a variety of experiences, fusing them into a “meaningful whole” (p. 362). To give meaning to the participants’ experiences, I needed to more clearly describe the categories. My final themes for this study are (a) patriarchal role repositioning due to systemic stereotyping, (b) care and nurturing through student–teacher interactions, and (c) perseverance of female STEM faculty members through
self-actualization. These themes encompass the lived experiences of the participants and address the research questions. The next part of the chapter presents the findings as they relate to the themes of female STEM faculty members’ experiences.

**Summary of Findings**

This section describes the role perceptions as experienced by female STEM faculty members teaching high-stakes courses in higher education using AM as a lens. The feminist lens of oppression and the SCM framed the study and guided the structuring of the research questions. This study looked to the model for greater understanding regarding experiences of AM as a possible explanation for the lack of female presence in STEM programs of study.

The evidence of themes is organized around the following findings that align with the frameworks of feminism and SCM. Within these models, women are positioned as communal, leading to negative reactions when they deviate from expected stereotyped behaviors, resulting in potential oppression within their career track.

**Patriarchal Role Repositioning**

Within Theme 1, female STEM faculty are expected to be softer, act more nurturing, be more caring, and adhere to gendered role expectations. Due to patriarchal oppression, participants felt they needed to be compliant and were unable to say “no” or turn down job expectations early in their careers. In addition, the participants expressed experiences of stereotyping and being viewed as “second-class citizens,” though this appeared to be discipline dependent. Other key findings included a lack of promotion for full-time participants, struggles with work–life balance due to caregiving (childcare or other) that can lead to lost job opportunities, and inequity in the timing of course offerings where they want equity but need time flexibility. While participants reported changes in stereotyping and patriarchal expectations,
they appear to be maintained by older male faculty. A final finding included the patriarchal role repositioning of women in lower status levels by women in higher positions, which may be due to women seeing one another as competition, thereby maintaining a hierarchy by holding other women in lower roles and showing a lack of sisterhood.

**Student–Teacher Interactions**

In accordance with the SCM, students possessed communal expectations of female STEM faculty members, thus positioning them as academic mothers. The participants acknowledged the stereotypical expectations of being nicer, more empathetic, and more nurturing than male faculty members. The participants reported that they are also perceived as patient, sweet, understanding, but would like to be viewed as knowledgeable, understanding, fair, and organized. Participant discussions included student demands, expectations of female faculty, student need for support (both academic and emotional), and increased academic and emotional workload. Course stakes (high versus low) and student sex played roles in demands as well as support needs, with needs varying depending on the course/program. Many participants discussed the need for setting boundaries, such as time limits on answering emails or availability outside of the classroom. Additional boundary setting included seeking or not seeking student relationships. A concerning finding is the negative ratings by students if they are not “made happy,” leading to increased emotional and academic workload. Compounding all these experiences was the COVID-19 pandemic that exacerbated student demands and needs.

**Perseverance**

The third theme looked at the mechanisms female STEM faculty used to sustain their careers within patriarchal institutions. Many participants described getting ahead by pushing
harder, not taking “no” for an answer, and making their presence known. Support played a large role in enabling the participants’ trajectory. Support from family was mentioned most frequently, followed by friends. Colleague support helped participants establish themselves at the onset of their careers, while institutional support was not mentioned. Positive student experiences were also mechanisms mentioned as sustaining and motivating female STEM faculty. Some participants felt a sense that they were meant to be in this career. A final tool necessary for the participants continuing their career path was working with their role perception to enable student success as well as their own self-fulfillment.

The Phenomenon of Academic Momism

The previous themes led to the participants’ experiences of AM. In their role as academic mothers, the participants spoke of student expectations of their female faculty members to worry about their personal lives, be more nurturing and caring, be more lenient, and provide emotional as well as academic support. Some participants mentioned the increased emotional workload due to these expectations. Although most of the participants acknowledged their perception as academic mothers, a few rejected it. Interestingly, despite rejecting this role positioning, they described “parenting” the students (e.g., teaching them responsibility) and wanting to help them succeed. Those who embraced the idea of being an AM felt it has positively contributed to their career in that they experienced student engagement, rapport, felt they made a difference, and also received positive student feedback. Only a few participants saw AM as negatively contributing to their career, citing a lack of student respect, increased workload, and being perceived as less competent compared to male faculty.
Theme Analysis

Theme 1: Patriarchal Role Repositioning Due to Systemic Stereotyping

Oppression of female STEM faculty members has been promoted within patriarchal institutions due to systemic stereotyping. Role repositioning can occur by female faculty and administrators as well as by men. This is done by place-holding female faculty who are in lower positions as “less than,” thus acting in an oppressive way. Participants such as Tiffany and Kathy noted being “kept in their place by female administrators.” Patriarchy within institutions is characterized by the suppression of female faculty members by placing them in subordinate roles (Acker, 1990). This oppression can be exemplified by female faculty receiving fewer course offerings, fewer research opportunities, unequitable service work expectations, as well as the unfair granting of tenure or promotion based on instructor sex rather than merit (Burke et al., 2017; Dlamini & Adams, 2012; El-Alayli et al., 2018). While some participants discussed obvious oppression due to hegemonic practices, others did not have the same experiences. The discrepancy lies in the department/program of study the participant taught in. Participants teaching in programs that are “male dominated,” such as physics or engineering, discussed promotion denial and gendered service work expectations.

The sub-themes presented below describe participant experiences of prescriptive stereotyping, in which females are expected in act in certain ways, such as being caring (Eagly & Karau, 2002), oppression in career advancement as a function of female STEM faculty being less competent or respected, and the struggle to find work–life balance due to stereotyped expectations of women as caregivers.
Sub-Theme 1: Prescriptive Gender Stereotyping

Gendered stereotyping posits women as communal, meaning warmer and more nurturing, and exemplified as homemakers (Cuddy et al., 2008). According to the SCM, these attributes, while welcoming, are viewed more negatively when compared to the contrasting personality trait of agency that is associated with men. This may lead to expectations of female STEM faculty members to be less intellectually competent compared to male faculty members (Cuddy et al., 2008), take on higher workloads, and have lower career aspirations, leading women to have to prove themselves.

When asked about how they are perceived by their institutions and students, the participants repeatedly used terms such as “nice,” “nurturing,” “caring,” “sweet,” and more empathetic. “People still look to women that we're supposed to be soft and we're supposed to be nurturing and we're supposed to be, you know, we have these expectations [of being warm]” (Science Female). These perceptions align with the idea of women as communal in nature. While these views fulfill expected societal behaviors, they can have a negative impact on student expectations of female STEM faculty. Tia echoed this belief, “Sometimes, they mistake my affect and my warmth as being a pushover.” Female STEM faculty members are still susceptible to gendered role expectations of “making a lasagna” for a committee meeting (Ana Phylaxis) or complete menial tasks, such as committee or departmental paperwork, that a male superior could not be bothered with (Jennifer).

Within the SCM framework of warmth versus competence, those who appear more agentic tend to receive more student respect and are regarded more highly in the area of competence. Participants in this study mentioned lack of respect and needing to work harder to
appear as competent as male colleagues. Hannah saw female STEM faculty members being placed as “second-class citizens,” adding the following statement,

You can contribute, but you know, you always work harder still. There was never a time in my life that I thought that ‘OK, I can calm down; I can be just more relaxed.’ No, I have to always work harder to show that I can do the same thing that, you know, I know my male colleagues don’t ever have to do that.

Other participants also expressed feelings of disrespect from both colleagues as well as students. Several participants felt that their male counterparts receive higher levels of respect overall. For example, Peeled Grapes was angered that male professors receive more respect, while she is looked down upon professionally and expected to be “soft and cuddly.” Another participant mentioned having ideas ignored, not receiving credit for work, and for being “cut down” during meetings (Hannah).

When asked how they would like to be perceived, participants mentioned “understanding,” “fair,” “organized,” and “knowledgeable.” While the first two terms align with perceptions of being warmer, caring, and more communal in nature, the latter two descriptions are of interest in that they are more associated with the agentic traits of leadership and being in control. The systemic stereotype of males perceived as being better in STEM programs of study is still pervasive, given that female STEM instructors still report that they are perceived as having lower competence, as reported by Anna. Such inequity and feelings of lowered ability can lead to increased workloads, perceptions of lowered status as well as oppression, thus possibly affecting career trajectory.
Sub-Theme 2: Oppression

Gender stereotyping and perceptions of women as “less than” within hegemonic institutional systems lead to pay discrepancies, lack of achieving tenure, and an impediment to promotions, thus holding them back along their career path. Some female participants cited competition and lack of support from colleagues as well as their institution, as playing a role in hindering their promotion and propelling their careers. Experiencing unfair treatment within male-dominated departments, Jennifer and Kathy both described promotion denial despite going beyond the requirements and being awarded a grant. In her interview, Kathy recalled:

Going for my promotion last year, it was the most horrific thing I could think of going through. I knew I had a competitive group going in and I knew I was, I felt, very solid in my application, but coming out of my department, it was torn apart. And I don't know what the issue was, but I think in my department, it's extremely cutthroat and not for professional reasons. And it could be because you have very few females in the department and maybe they feel like they need to edge each other out.

Kathy’s story brought up an important idea of hierarchal positioning through oppression by other females, including a lack sisterhood and a lack of female support. Tiffany also mentioned female-based oppression by individuals who were in higher positions than her. While some participants did experience support from other females, there were numerous participants who commented that women are difficult to work with, can be cutthroat, and that many of them would rather work with men. This intra-sexual role repositioning contradicts feminist goals of equality and overcoming oppression by reinforcing the patriarchal ideal of suppressed career advancement.
Some participants felt they had diminished status, they were viewed as less smart, and perceived as inferior by male colleagues and high-positioned females. Part of this positioning and perpetuation of hegemonic beliefs appears to be based on the age of the male. Elora has a doctorate but still has encounters with male full-time faculty members of equal degree status who position her in a lower rank due to her part-time position. She recounted a story of an older male student who refused to acknowledge her as “professor,” since that title holds a higher status than “doctor.” Beth also mentioned “older age” when discussing a patriarchal experience, stating “I mean, the male faculty are much more and were much, much older. So, I've always felt more that that's been an age thing. I'm sure the gender part of it doesn't help.” Jennifer added that her perception was that older male colleagues feel a sense of “power” over younger female faculty members.

Discipline and field of study may play a role in the oppression of female STEM faculty members. Beth described a scenario she witnessed frequently while participating in a panel as the only female. The male panelists held the idea that females “don't know what they're talking about” and ended up “having their own work cited to them, when the person talking to them doesn't realize that they are the one who's like the expert in that field.” She explained that she has seen this in male-dominated disciplines where female expertise is not expected.

On the other hand, Anna, while in a male-dominated field is in a unique situation. Her perception of lack of career oppression is in contrast to what some other participants felt:

In terms of opportunities, I know that there is nothing like, “Oh, I'm not getting a promotion because I'm a female” or “I'm not able to apply for a grant because I'm a female.” It's honestly, it's actually a little opposite to that because the funding agency and overall, the education system on the engineering level, they want to encourage more
females so they are more supportive; there are special awards for which only females can apply.

**Sub-Theme 3: Work–Life Balance/Setting Boundaries**

Work–life balance appears to be another factor affecting female STEM instructor career paths. Gendered role expectations still position women as the primary caregivers for children as well as other family members. For some participants, the flexibility in teaching schedules allowed them to spend time with their family and caring for their children. While women seek equity with men in their careers, the timing of course offerings can adversely affect their work–life balance. Science Female explained that since STEM is a male-dominated field, “There is just very little understanding that if you're a mother, the raising of the children still falls to mom,” thus causing pressure in juggling home and work obligations.

Discriminatory course offerings based on the time of day created childcare struggles and career oppression early in the careers of the participants. Hannah experienced an exhaustive workload while raising a young child. Although she requested not to teach night classes, her course offerings still kept her on campus from early morning until 10 p.m., reiterating the notion that “women don’t say no.” Hannah felt she could not request time changes or turn down work. Kelly affirmed the perception of biased scheduling and a woman’s fear of saying “no” or being “non-compliant.” As she began her teaching career, she was navigating raising children while being offered courses at times she had requested off. Being young and female, she felt “You want to be compliant. You want to go along with, you know, be in the good graces and stay on everyone’s good side.”

Expectations of childcare responsibilities can lead to the denial of a position. Ana Phylaxis’s story demonstrated a woman’s double-bind of mixing a career with family as well as
overcoming oppression through the denial of career opportunities. She was asked by a new chairperson why she was not working full-time. She had been denied interviews due to the hegemonic assumption of her inability to work full-time due to childcare provisions. She pondered, “I wonder if that played any role in me, not even getting an interview the two previous times that I had applied for a full-time job.”

While some of the participants spoke of family support as a mechanism to achieve work–life balance, many more relied on setting boundaries and establishing firm work hours versus out-of-work hours. Tools such as setting strict time limits for work (no work on weekends or after 5 p.m., not answering email past 7 p.m.) have proven effective in allowing the participants to negotiate their workload with personal life.

Despite numerous stories of stereotyping and oppression, the participants sensed an ongoing change in perceptions of female faculty members. A driving force in this transition is systemic changes in the stereotyping of gendered roles. As there is an ongoing need for both parents to be working, expectations of childcare and housework are moving from solely a woman’s job to equal divisions of labor. Ana Phylaxis pointed out that in previous generations, it was more common for women to stay home compared to now. Another mechanism leading this change is the age of male faculty. Oppressive hegemonic practices remain within institutions where male faculty are older. Science Female suggested that as faculty migrates into a younger generation, there may be a positive change in perceptions of female faculty. One such example has been seen in engineering programs in New York, which appear to be looking for a stronger female presence. Anna mentioned, “They want to encourage more females, so they are more supportive. There are special awards for which only females can apply. So, it's also the opposite to that of what probably was the case several years ago, and it's changing now.”
Participants discussed how the COVID-19 pandemic exacerbated their feelings of workload due to assisting others during the transition to remote learning, lack of student work ethic, and emotional support needs. Science Female created PowerPoint presentations to be used by all the microbiology faculty members: “There were really no PowerPoints that words are appropriate for micro labs. And then I had to turn the labs into an online type of laboratory and that was, you know, took a lot of work. A lot a lot of work.”

Over time, increased work expectations can lead to female STEM instructor burnout. Burnout can be a function of keeping up with current pedagogical practice, research demands, or student expectations. Jennifer confirmed the notion of student expectations and burnout by saying, “In the courses I teach, the students expect a lot of me. Well, that's my opinion and, you know, can be draining.” Peeled Grapes has been particularly struggling with burnout the last few semesters: “burnt out—definitely, that's the big word up there.” During the focus group discussion, it was stated that the demand to keep up with current curricular trends can be exhausting:

    The pandemic happened. I feel like them. Why am I doing so much still? And I know in our profession I agree that a good educator should always be re-creating and reinventing just to stay current in the trends. But sometimes it just seems like a little much.

While many female STEM faculty members feel burnt out by institutional research demands, Apex has been lucky enough to teach in a location where she feels the pressure has been taken off in part because she is tenured: “If you want to do your research, you can do it at your own pace and there's no pressure. That's the part I really like, you know, because I enjoy doing research, but they don't give me pressure.”
The narratives presented above highlighted how systemic stereotyping influenced participants’ perceptions of how they are perceived by others. Such role expectations of male colleagues and male-driven STEM programs led to oppression in their career paths and affected their work–life balance.

**Theme 2: Nurturing Students Through Student Teacher Interactions**

Gendered role expectations and the SCM position women as warmer, more nurturing than males and in a role as caregiver. Fulfillment of this expectation is achieved through the instructor–student dynamic, which plays a pivotal role in female STEM instructor role perceptions, academic as well as emotional workload, motivation, and career trajectory. While many participants perceived student–teacher interactions as a positive contribution to their career, student perceptions of some faculty members were in conflict with how they want to be seen. Student perceptions of female STEM faculty members as academic mothers may affect their expectations, increasing the need for socioemotional support. Instructor motivation can be altered based on workload demands and student needs, ultimately and possibly affecting the choice of whether to remain in academia.

**Sub-Theme 1: Stereotypical Behavior Expectations of Female STEM Faculty by Students**

The participants in this study discussed stereotype-based perceptions and expectations of female faculty members by their students. The overall consensus expressed was that students have gendered expectations of female faculty members as approachable, kinder, and warmer. This can contribute to student perceptions of female STEM faculty members as academic mothers. The participants repeatedly used the words “nicer,” “softer,” “easier,” “more forgiving,” and “lenient” in comparison to male faculty members to describe how they felt students perceive them. One example of a leniency expectation of female faculty members
occurred with Tia who spoke of students, saying they “dodged a bullet” by having her give a 
practicum instead of her male colleague. The assumption was that he was a harder grader. Along 
with these perceptions come expectations of immediate responses to emails, caving to students 
for deadline extensions or grade curving, and/or forgiveness for late or missing assignments.
Arianna explained:

I think students find or feel that female instructors will be more understanding, more like 
extasygoing. When it comes to, you know, their reasons for not having work or leniency 
towards, let's say, grades so they might get paper back and try to reason with you as to why they lost points. I think you kind of think maybe they're trying to like asking you to change the grade, hoping that they can get you on their side.

Kathy questioned if these beliefs and expectations actually are founded in student entitlement 
rather than in stereotyping. Kathy, Bella, and Anna also wondered if students make the same 
demands of male faculty.

I don't know if it's that they're thinking because everything going on in the world or if it's a 
sense of entitlement or if it's just that you are a female faculty team member; you're going to be a lot more lenient. And I'm curious to see if they try this with male faculty. Yeah, you're trying to help students, but they are flip-flopping all over you lately. (Kathy)

While there were discussions within the focus group of female faculty remaining firm in relation to the classroom policies or referring to policies within the syllabus as a binding contract as leverage for not complying to student demands, some untenured participants expressed concerns over deviation from student expected behaviors. Anna stated that as an untenured professor, she did not want to give her students “any reason to complain.” Despite being tenured, Jennifer still has concerns regarding student satisfaction, mentioning her chairperson being more
pleased if her classes had high enrollment and few complaints. Beth found that students often bypass faculty members and complain directly to the chairperson or dean if they feel they are not receiving satisfactory responses to demands.

Gender stereotyping positions male faculty members as leaders, automatically creating a boundary between faculty members and students where students “know” not to expect leniencies or to ask for favors. Anna surmised this is not the case for women because females are not intimidating. While Hannah self-described herself as a “firm” instructor, she has found that students still try to take advantage of her and are shocked when she does not tolerate actions such as cheating. Tiffany added that nursing students “test the waters” to see how lenient female STEM faculty members will be. In Elora’s experience, students who should be approaching a male instructor for certain questions or clarification tend to approach her instead, demonstrating their belief that she is nicer, more approachable, and does not have the same boundaries as her male colleague.

Gender stereotyping of perceiving female faculty as less academic than their male counterparts puts them in a position of working harder to disprove the stereotype. This leads to female faculty members working harder to prove themselves. Participants who teach in traditionally male-dominant programs of study (engineering and math) had more frequent experiences of being seen as “less academic.” Students rate male faculty members higher than females, even if they both follow the same course organization. Anna experienced this when she taught a course formally instructed by a male who received higher ratings than her despite teaching the same material in the same manner. Both Peeled Grapes and Hannah discussed having to prove themselves to students. Peeled Grapes expressed her shock when students told her they would rather take a male instructor over a female. Arianna, citing “societal
stereotyping.” has experienced shock from individuals upon hearing that she teaches secondary and college-level math. Interestingly, Ana Phylaxis has not experienced a sense of being perceived as less academic but is perceived as more approachable: “I think they're more comfortable with telling their personal stories. But no, that is not in terms of content matter. No, I don't get that sense.”

Stereotyped perceptions of female faculty members as “less academic” forced some participants to choose one aspect of their career over another. Anna felt she dedicated twice the amount of time on teaching to “ensure students are happy,” thereby negatively impacting her research due to time constraints. In describing her career negotiation, Anna stated,

> We also have to make sure that we are doing the research, we are writing grants, which takes a lot of time. We are publishing paper. We're managing a research group, which has graduate students with some rules that we have to make sure that we follow.

Workload negatively impacted Apex’s research as well. During the regular semester, with her full-time teaching load, she doesn’t “have the energy and time to do research.”

In the role expectation of female faculty members being nicer and softer, students may tend to place more demands on female STEM faculty members. Tia asserted, “They confuse my warmth and affect as being a pushover.” Elora reaffirmed, “You could see the soft heartedness as also being more thinking you're going to be more of a pushover.” Arianna discussed a student who emailed a list of demands, expecting to be accommodated, while Apex spoke of students who feel they can manipulate female faculty members into changing a grade by manipulating scantrons.

The age of the faculty member might be a variable in student perceptions of female faculty members as being a pushover. Ana Phylaxis sensed,
They are looking at you and they're saying, “oh, she's probably my mother's age” or now as I'm getting older, “my grandmother's age, I can get over her”, you know, with “my mother, with grandma doesn't know how to operate the Internet.”

Age as well as sex may contribute to student perceptions of Arianna, who expressed concern over teaching a college course while being almost as young as her students. Students continuously place more demands on female faculty members, as confirmed by Bella. Some student demands are wildly unreasonable, such as a story from Anna where a student felt a group project could replace an exam. Other demands revolve around student convenience. Anna stated a student kept “demanding like extra time for submitting homework and other things.” Arianna spoke of a student who also wanted changes in the course format for her convenience: “She wanted me to send assignments a specific way so that it's just easier for her” instead of writing them down. Students also ask for extra credit or leniency in exam makeups, despite the syllabus stating the course parameters.

Students in summer courses visiting from other schools may be more demanding. Ana Phylaxis stated, “And you know, when I see it most in the summer courses, because in the summer courses, we have more visiting students. And those students, some of them could really be cutthroat. They want that A, because it has to transfer.”

Some participants told stories of pressure based on student gender. It also seemed that the program of study altered, whether the pressure was greater from male or female students. In what is perceived as male-dominated programs, pressure and demands were more likely to come from male students. According to Anna who teaches engineering courses: “I think the female students were more respectful and they were less complaining actually compared to the male students,”
explaining that the female students saw her as a role model and sensing most of the complaints against her came from male students.

In contrast, Bella, who teaches anatomy, found that female students were more demanding due to a sense of equal status grounded in being the same sex. Despite being logical and explaining why demands cannot always be met, Bella’s female students were still disgruntled. Kathy also has experienced pressure from female students:

I find that the female students try to cross that line, that they're your friend, and that's fine if you want to be friendly. But to the point that they feel they can get away with a little bit more, whereas a male student may not cross that line.

Peeled Grapes added, “The main problem I have is that especially female students. They, as I said, they just expect me to be softer.”

For many participants, there was a recurring theme of female students expecting them to be more understanding or compassionate because of the assumption of shared experiences.

Fears of student dissatisfaction by not meeting students’ demands, as reflected in reviews, ratings, or lower enrollment in courses were mentioned several times. Conversely, in the focus group, participants expressed concerns regarding frequent acquiescing to students demanding extensions or other accommodations:

I try to be fair; I try to be understanding, especially these past few years, of giving extensions and things like that. And yet I want to be fair to everyone else who doesn't need the extension. So, I also am always worried about—am I going to get in trouble, or are they going to take advantage of me too much?

Participants also recognized that some students could expect too much from their professors. Setting a boundary can act as a mechanism to thwart being taken advantage of:
With some students, I think they push it too far. And that makes me realize that I have to pull back and be perhaps a little more aloof because sometimes I feel like they're taking advantage, and that isn't my objective. My objective is to help them as much as I can. But don't take advantage of me. It doesn't happen too often. I can't really complain about it too much, but again, when it does, you know, I get angry, and then I would then kind of pull back and say, you know, you're overstepping the grounds here; you're overstepping the lines that helped you as much as I can, but don't take advantage.

Many of the participants shared stories of exacerbated workload due to student support during the pandemic. Kelly’s workload increased exponentially during the COVID-19 pandemic due to both student and colleague support needs. She also empathized with the students’ experiences of increased work outside of class, family care, sickness, and death. She explained how she had to juggle wanting to empathize with the students who were dealing with increased work hours, sickness, and death, but also needed to be their instructor. Students expected greater leniency, yet Kelly felt the pressure of responsibility to educate them.

We did what we could to make it more digestible for them in that difficult time. But again, like I said, I can't it almost seemed like the expectation was, well, you know, it's COVID and we're working in hospitals and we're seeing that stuff, so. You have to be lenient and so in terms of grading and I think that became extremely difficult.

In addition to increased instructor workload, another negative aspect of students being remote is their fearlessness in complaining or making demands. This may have been encouraged by not having to face faculty members in person.

We're finding that in this remote world where we're not in the room with them, they don't even have to come on camera. They don't have to come on the mic. They are bolder.
They can be disrespectful and, you know, they don't feel as intimidated as I guess as if we were in the room together, you know, and everybody's on it. Everybody's stressed out and I totally get it.

Female STEM instructor experiences of emotional workload may be affected by institutional and student demands. Most recently, the transition to remote teaching brought on by the COVID-19 pandemic has exacerbated these feelings. According to Jennifer, “The whole pandemic and going remote compounded it so much, so that's a part of my burnout. But yeah, I guess it might be related to overextending myself to students and other people in my department.” Jennifer’s sentiment ties into the idea that female STEM faculty members also experience heightened emotional workload due to student perceptions of them as nurturing and empathetic.

While Tiffany enjoys supporting her students, she admitted, “I like to support the students, so it puts pressure though, it stresses you out.” Jennifer recounted stress and feelings of being drained:

There are some students that become very attached, and it can be draining. What comes to mind now is sometimes students are very draining and they just follow me around in the hallways that they want to come to my office all the time. That also does lead to some of my burnout where I am trying to accommodate people for different things.

Student expectations of female instructors necessitated the need for some participants to establish boundaries as a mechanism to offset increased emotional workload through demands and pressure. The next sub-theme looks at female faculty pressure created through lack of student motivation.
Sub-Theme 2: Lack of Student Motivation

Pressure and demands may be due to a lack of student motivation. Most of the participants spoke of lack of motivation through stories regarding lacking effort, not attending office hours, and being late with work submissions. Apex highlighted that “This young generation, many of them didn't put that much effort in their courtesy in the email.” Tiffany found lack of effort in assignments in that “They think that writing, making a diagram—this is copying and pasting an image from a Google.” Anna had complaints made against her due to work expectations, which did not differ from the previous male instructor:

I was pretty surprised to see that they had so many complaints about the way I was teaching and the amount of work that they had to do because it was pretty much the same amount of work that the class before had to do.

Students appeared to be less willing to ask questions or spend any more time outside of class to review materials. Science Female noted, “The number of students reviewing the tests or the number of students asking to see me has tremendously decreased.” She surmised that the issue may be a lack of pre-college preparation in study skills, explaining that students are not taught how to study: “They don't understand the concept of memorization and that you really do have to memorize, whether it's looking at flashcards or writing it, however you are going to get it into your brain.”

Other participants saw lack of motivation as a function of course stakes, student sex, or institutional core requirements. Kelly saw more motivation in anatomy and physiology and the microbiology for the nursing or health science due to grade pressure, saying, “They are much more likely to show up in an office hour to ask questions, or maybe they're on track for not getting the grade that they need.” Beth found, “Female students definitely seem more engaged in
the AP class than the male students do.” Peeled Grapes felt that a lack of student interest in topics or courses due to core curriculum requirements led to lack of motivation. Apex believed that entertainment glamorizes certain careers. When students are faced with the actual workload, they lose interest:

Students who are just there…because they thought they think Grey’s Anatomy looks so interesting. So, they want to be nurses, not realizing that nursing is not being pretty. And then when they get to an A&P course, which is kind of good because it weeds them out.

Bella offered an explanation as to why community college students are less motivated or have issues with completing assignments on time. She felt the students have more outside pressures while attending state schools as well as community college, whereas “the students at the private university focus mostly on their studies and are not distracted by having to pay the rent and pay the bills and work the overnight shift or what have you. So that's the big difference I find.”

A number of participants reported an increase in excuses for missing exams or not arriving at the class on time over the past few years. Excuses include car issues as Arianna explained “usually like this one student just full of excuses, like it could be a whole semester long off of that, of like car issues, too.” Anna told of students being unaware of the time:

‘Oh, I accidentally forgot to submit on time because I found out the deadline was one hour later’ or something like that. ‘Can you just allow me one more hour?’ So I can get a lot of emails like that.

While excuse making is not unusual, for some, it has increased significantly since the COVID-19 pandemic. Ana Phylaxis is sympathetic to those who are legitimately ill but questions other students who use excuses such as their alarm did not go off. She emphasized the need for
students to take responsibility. Bella concurred with increased excuse making since COVID-19, adding “It's been a little bit more involved than the ‘dog ate my homework’ kind of thing.” Quarantining out of state or overseas, family illnesses, and death of loved at levels not experienced in this generation have led many students to lose focus in their work. Students have expected increased compassion from female STEM faculty members using elaborate reasonings. Peeled Grapes remembered a pre-nursing student who would not complete a lab with a cat dissection due to the death of a pet and being “squeamish with seeing blood and stuff.” Apex frequently heard “‘My grandma died,’ you know, and there's so many grandmas just died before my exam. I think of my exam is lethal, is killing people.” COVID-19 also frustrated Ana Phylaxis who felt that students’ work ethic did not equal hers during the transition “And for some of the students that I felt weren't putting in their weight or trying. I think they were trying to take advantage of me and of this situation. And that really bothered me. So that negatively affected me.” Her emotional workload also increased, with her students needing more emotional support. Science Female saw empathy as leading to elevated emotional weight, stating, “You can go home at night and say, ‘OK, that's that person, that's not my private life or personal life.’ But I think you do bring it home with you,” thus acknowledging the emotional burden that female STEM faculty bear through increased student support.

Sub-Theme 3: Socioemotional Support

Student support needs have transitioned over the past few years from academic to socioemotional. This ties in with the idea of females as approachable and nurturing, as well as being perceived in roles as academic mothers. For some participants, student needs leaned heavier toward academic support, while others find students were more in need of emotional or motherly support. Anna’s experience was based more on the academic needs of her students who prefer
“just sitting with me and they want me to just spoon feed them like step by step and they will be writing each and every step.” Tiffany also saw student needs as more academically inclined, stating, “They want my attention, or they want my attention on their work. As an advisor, as a mentor, as a role model, they don't want my attention as a nurturer. That's not what they're seeking from me.” Other participants, such as Ana Phylaxis, saw students needing more emotional support.

I'm really surprised at some of these kids, how they open up to me, and I wonder if it's because they trust me. Why? Because they need somebody to talk to. That, that makes me feel sad. You know, if there's a lack of an adult that they could really confide in that, that really makes me feel sad for them.

Course stakes also played a role in teacher–student interactions. Students in high-stakes courses worry about grade achievement, thus increasing pressure demands on female faculty members to help them achieve their goals. Conversely, students in low-stakes courses appear to be less prepared and need more baseline academic support. Either situation created increased pressure on the faculty members due to demands for grades or struggle to motivate the students. In Kathy’s situation, she felt, “Low-stakes students are more in need of support academically, not just in my course, but their ambition. They need more support overall as far as time on task of being able to learn the material.” In her role of teaching high-stakes courses, Anna discussed grade concerns:

They're very worried about grades. You know, they will be a bit more demanding in the sense that maybe more attention. Non-high-stake course students are taking them as elective and they are OK if they're not getting an A-plus in that course…they won't…they
are a bit lax or complacent about that, but they are not that worried about those policies
[as experienced by high-stakes students].

In a positive way, Jennifer sensed less anxiety from students in her non-high-stakes sections,
“Well, in math especially, there's less anxiety on their side when it's a lower stake and more
flexible with the grading and there's definitely a lot less anxiety on their side.”

The COVID-19 pandemic greatly impacted teacher–student interactions by the increasing
need for academic and socioemotional support. Some participants recounted ways to make sure
the students were prepared for daily living through the quarantine (having a surplus of food and
drinks, up-to-date medications, internet availability) as well as online learning. Other participants
saw a distance with students and a lack of engagement. Almost every participant mentioned the
rapid and dramatic move to online teaching and increased workload through students needing
support as well as their own need for technical support. The participants offered numerous levels
of assistance such as Bella, who focused on study advice and empathy to support students, even
if their area of concern was outside of her teaching expertise. Kathy began class earlier for chat
sessions as a means to keep students connected with her and each other. Peeled Grapes “was
being bombarded more with aggressive emails from students because of all kinds of internet
issues that they had.” Tiffany felt that there was no distinction between male and female faculty
and the support they offered to students during the pandemic, stating “We were all in it
together.” In a crisis, it appeared that both sexes were looked at to provide empathy and
nurturing, suggesting the idea of perceptions of male faculty as “academic dads.”

Some students seemed to shut down or not be present during the pandemic. Beth was
aware of the lack of student presence and interaction, feeling they did not know support was still
available:
I think, because they just didn't think that they could probably, you know, with all the restrictions and everything, like knowing that things were so out of whack. I think they just didn't realize that they could still ask for help if they needed it, is what it seemed like to me.

Student relationship seeking varied between participants. Some faculty members enjoy the teacher–student engagement that can occur outside of the classroom, while others avoid it and keep strictly professional in-class interactions. Several participants felt that developing a rapport with students increases teaching and learning efficacy. Apex and Hannah spoke of enjoying the human interaction and being able to see the positive impact they have made on students. In addition, positive student feedback appeared to motivate the participants and make their role more enjoyable and overall worthwhile. During the focus group session, Beth explained, “It's just the sustaining. Yeah, anything and being willing to do it semester after semester; it is those students, you know, that's where to make that possible for sure.” Kathy’s experiences of student relationships renewed her desire to teach. Peeled Grapes also enjoyed teacher–student relationships, preferring to teach lab over lecture to enable interactions. While she did not identify as an academic mother, she did want to get to know her students more personally to “to be in tune with my students if they are struggling.” She saw this as an inability to separate being a mother at home with her career role.

Developing a rapport with students may help with their learning process by allowing students to see faculty members as being more relatable. Bella explained that being more personal with students enables them to see her in a different light:

Oh, she's not just it's not just a teacher, which is just like a regular person. Right, right. Let me hear what she has to say. But I do find like, if you have that kind of rapport with
them, I think they tend to be a little more open and receptive to whatever you're presenting in class.

While many participants enjoyed student interactions/relationships, they did feel the need to set boundaries. For Bella, she preferred to keep her interactions with students as professional as possible but was willing to listen to students if they need to talk. Elora created student boundaries as a means to save her mental energy. Ana Phylaxis also set boundaries but recognized her students’ needs for someone to talk to. She felt that some of her students do not have families and they look to her as a sort of replacement:

I had a family. And I think that's most important. And some of these kids, unfortunately, I don't think had that. But then when I feel like they're stepping in, going over the boundary, then I have to say no. I have to redirect them, put it that way.

The prior participants’ discussions included ways in which they were able to use rapport and relationships with students, as well as boundary setting to maintain their career path. A final mechanism in the participants’ career trajectory involves awareness of their role, who they rely on for support, and what motivates them.

Theme 3: Perseverance of Female STEM Faculty Members Through Self-Actualization

Despite facing stereotype-driven obstacles in their career paths, the female STEM faculty members who participated in this study have found ways to sustain their career trajectory through their awareness of self. The theme of self-actualization refers to the participants understanding who they are as female faculty members and what that means in navigating the patriarchal world of academia. For some participants, self-actualization meant finding a bridge between how they want to be perceived by the institutions and students versus actual perceptions. The mechanisms they used included career support, their role perceptions, and
overcoming stereotypes. Career support included family, friends, and colleagues, while participant role perceptions primarily included instructor, but also facilitator and mother. Means to overcome stereotyping consisted of perceptions of equity in course offerings, job opportunities, and respect. Some participants acted in ways that went against expected behaviors. Their stories shed light on how they persevere in a patriarchal system.

**Sub-Theme 1: Career Support**

Support through family, friends, and colleagues enabled the participants to establish a foundation for their careers. For some, it was their husbands who assisted with childcare or a parent who motivated them. Other participants spoke of friends who encouraged them during their education process. Mentors acted as guides and cheerleaders, providing validation for several participants early in their careers. Institutional support was rarely mentioned. The one story of institutional support came from Anna who spoke of organizational as well as institutional encouragement. The past few years have seen a drive to encourage more women to enter the field of engineering (Zhang & Baruah, 2020). It is interesting to note that institutions with older male faculty are not as supportive.

They try to encourage more and more females to join, and I've heard, so I was a part of this woman organization of engineering, where a lot of female professors in engineering work with graduate students and I heard that there are definitely situations like this of like big schools like MIT and Harvard because there are a lot of very, very senior faculty who are very old school and they have their bias towards female faculty. Luckily, I was…I've been part of two schools where we have a lot of young faculty, and they are very encouraging of female faculty that one day (more) this actually feels like we can try to be more accommodating.
It is of interest that there is a notable absence of discussion regarding women helping women or a sisterhood. While Ana Phylaxis spoke of belonging to a women’s faculty association, several other participants sensed competition and hierarchal role positioning by female colleagues and administrators.

**Sub-Theme 2: Role Perceptions**

The participants in this study had established a strong sense of their classroom role beyond student perceptions of them as academic mothers. This had enabled them to convey materials to their students in a way fitting to their personal teaching style. Participant role perceptions included instructor, facilitator, mentor, and mother.

Almost half of the participants ($n = 7$) self-described themselves as an instructor. Kelly saw her role not just as imparting the material and subject matter comprehension.

I also see a big part of the role is to make them appreciate the topic for the sake of learning, not just to memorize and get a good grade, but to understand that the material itself and I…it that's the role of the teacher is to impart the love of learning and make sure that they understand and comprehend it at the appropriate level, the material that you're giving them. And to be available for support. I mean, academically, other things come up, but I don't necessarily see that as my role. It just sort of happens.

Several of the participants perceived themselves as facilitators who assist students in learning and understanding the material. A recurring word used was *support*. Jennifer saw herself as “someone who is empathetic naturally and wanting to be supportive and help.” Kathy also felt her role is to offer support, explaining:

I would say as an educator, being able to offer the support for students so that they can understand that, well, it may not be their discipline that they're studying, they can still be
academically successful and that there is a role for STEM in every aspect of their lives, almost trying to give them real-world examples outside of the course so they can see the relevancy of how STEM fits into their everyday life.

Several participants discussed seeing themselves as mentors and being a role model for other females. Ana Phylaxis stated, “I see a lot of female students, you know, they come up to me and I try to be a role model to them.” Elora saw her role as a female scientist as “being representation for the women students.” Tiffany shared the perception of being a mentor and role model stating,

I'm definitely a role model. That's the first thing that came to my mind. And a good mentor. I think mentorship is very important, but in order to be a good mentor, you need to be a good role model. You can't expect from your students, which you don't expect from yourself.

Females in engineering programs are at a particular disadvantage due to stereotyping, which led Hannah to feel a strong need to offer support only to female students as well as to be a role model. Kathy also used her role as an example to other female students:

They get to see a different side of both perspectives. You know, it's not always the male engineer; it's not always the male physicist. It's being able to look at people who are a little bit different, people who might be the same gender issue, somebody who might be younger in the department. You get a better sense for different faculty perspective.

Female instructor perceptions of mother aligned with the phenomenon of AM. Students may expect their female STEM faculty members to be more nurturing, empathetic, and worried about them. Some of the participants perceived this as their role due in part to their personality or being a mother themselves. Jennifer knew her students look to her for emotional support, “Oh,
you know, you should see, you know, Professor Jennifer,’ because maybe they had emotional things going on or it was clear to that person that they needed more hand-holding, or they needed more of a mom figure.”

There were a number of theories discussed explaining what leads to perceptions of being academic mothers. The most common idea was that of systemic stereotyping. Science Female suggested upbringing within stereotyping, such as being taught to be a mother or even a “big sister.” Citing age and becoming a mother, Ana Phylaxis explained:

When I was younger, I didn't feel that the students looked to me like a mother. After becoming a mother, that's a life experience that you naturally bring into the classroom. And so, I think just out of natural care for the students, you want to see them do well. And again, it's going to bring up that nurturing side.

Several participants expressed their love of being a female STEM instructor and felt this is their destined role. In describing her role perceptions, Ana Phylaxis said,

Yes, I kind of feel that's what I was born to do. It, in other words, the job is really, I think, in sync with who I am. There's really no other better way to explain that. It's really an honest expression of myself, you know?

Jennifer felt “I think I was always like a natural born teacher.” Also, Science Female found her niche in teaching as a graduate student in an assistantship program:

It can be very common, you know, to have graduate students do teaching. Some of them hated it. Other people hated it on now do this. But I you know, but, you know, I found that I loved it. You know, it was just for me.
Sub-Theme 3: Instructor Motivation

Female STEM faculty members in higher education faced an enormous number of obstacles to maintain their career trajectory. When asked what motivates them to persist in their career path, answers varied from student engagement, knowing they made a difference, and acknowledgement and recognition for their work. Several participants mentioned the toll teaching takes on female faculty members but pointed out that having a break renews their energy. Another motivating factor was knowing that one has reached and helped at least one student grow. Jennifer’s motivation was based on her drive to change male-dominated practices. She embraced being nurturing and her perception as a “mom.”

And so, I do want to fix the wrongs of the past teachers that were male. It does have something to do with my purpose on this planet. And I was as deep as that that I want to feel like I’ve changed something I’ve contributed. And that means it's going to be difficult. And so, I am choosing to do it in a in a mom fashion.

Both Bella and Peeled Grapes recognized the motivational power of student success. Bella stated,

It encourages me because sometimes you make it through difficult times, and they succeed or so and then you feel good. I did a good deed; I did a lot for this person. And so yes, I would say overall, I think it's more encouraging if anything else.

Peeled Grapes acknowledged how she derives pleasure from receiving feedback of student success brought on by her teaching, inasmuch as she thrives on student success, Tia felt responsible for student failures and blamed herself.

I would say that 95 percent of my time working is a positive experience, really. And when I see success or I see that lightbulb go off, it just makes me want to…it makes me
want to do better. Still, if somebody struggles or does not make it, I will internalize that and blame myself.

The discussion within the focus group centered on the acknowledgement of work and effort. One participant felt that some faculty members leave their career due to a lack of acknowledgement. Interestingly, Elora felt that her motivation is more about imparting knowledge of certain topics and content, rather than student engagement.

**Sub-Theme 4: Overcoming Stereotypes**

To sustain their career path, the participants needed to overcome the various forms of oppression and inequity maintained through patriarchal institutional systems as well as systemic stereotyping. Participants spoke about acting with agency, not giving up, not taking “no” for an answer, and feeling their path was forged by the women before them. Tia spoke of acting in an agentic manner with her class. Since she is normally very jovial and soft, her students were silent and avoided eye contact for several days. Tia added that strong women will work against the idea of women as passive, “When you need to, you need to stand up for yourselves, I think a lot of time. We tend not to because, you know, that's not what women do, but strong women do.” In the male-dominated field of engineering, Hannah had to prove herself to students as well as colleagues. Her story ended with a common belief that “you always have to work harder to show that you are equal.”

Several of the participants described perseverance and recognizing self-worth as ways of overcoming patriarchal beliefs. Science Female stated,

Well, the first thing I would say is don't let anybody impact you or tell you are lesser. Don't let anybody tell you that you can't do something. You can stay focused on where you are, what you want to do, what your goal is.
Peeled Grapes added, “Don't let anything or anybody stop you.” While Beth acknowledged she has succeeded, she was not sure of the exact means to achieve success: “I got tenure. I've done it. They haven't stopped me. So, I just feel like. Just continuing to do whatever I was doing, apparently worked out.” Ana Phylaxis stayed firm in her career, “There were just some instances where I really had to hold my ground. Right. And but very few, very few in the five years. And then they used to call me a rock. But you did what you had to do.” Kathy described “forging her path” within math and physics through the smaller step of tutoring, yet still being referred to as a “biologist.” Anna recounted changes going on in the field of engineering. In the past few years, there has been a drive across the discipline to encourage more females to enter that field of study.

Both Jennifer and Apex were grateful for the women who came before them and paved a path in the quest to overcome gender bias. According to Jennifer, “I think it has to do with the women before me, and you know, there's been a culture change.” Apex attributed her success to her race as well as to the women who preceded her work and “kicked down the door.” She also commented that it is not unusual to see an Asian woman in science.

Apex had a very unique perspective on stereotyping in the United States. Coming from mainland China and a communist government, she was raised without gender constraints. We discussed that in China, men and women are treated as equals. She was shocked to find that is not the case here. Her “genderless” upbringing in China enabled her to make decisions without the mindset of being a female,

It's interesting because I got my education, the elementary education and college, in China, so also, you know, my upbringing, my mom’s now she's retired, but she used to be a surgeon, which is also a field, you know, male-dominated field. And so, my parents, I don't remember they ever told me not to do anything because I'm a girl or a woman. And
there was oh, you cannot do this because probably if you want to do this job, it is not good; there's probably not a market. So, basically to get a good job after this but not because you’re a girl. They never told me something like that. So ironically, I don't think I really project myself or think about myself as a woman, as a girl before making many important decisions in my life.

**Phenomenon of Academic Momism**

Many of the experiences described above center on prescriptive expectations that lead students to view their female STEM faculty members as academic mothers. Institutional expectations are founded on a patriarchal belief system added to their instructor experiences. Some participants acknowledged this perception of AM and embraced it, using their role for career advancement. Other participants saw AM as another form of oppression and saw it as contributing to workload and feelings of burnout.

Empathy was a common thread through many of the participant stories. Participants expressed concern over student academic progress, home life, and emotional balance. Factors affecting the direction of empathy included student sex and presence of a disability. Science Female said, “I think we have more empathy. I think we do feel it more.” Also, Hannah pointed out that empathy is an automatic expectation of women:

Even myself when I go to a doctor and the doctor is a woman, I think she might be more having more empathy, you would feel that. I think this is in general, like a general expectation from women, I would say. And definitely, we have more empathy.

Empathy for students appeared to be directed toward students who were experiencing various types of life difficulties. Some participants expressed feeling stronger empathy toward single mothers. Male faculty may not be able to have the same depth of empathy as female
faculty since they lack a connection through the shared experience of motherhood. This kinship was explained by Science Female:

If a female student comes in and says, “I have children”…because I went through it getting my doctoral degree, I am understanding. I do not know if the male faculty of our department would be as understanding.

A student who was denied access to science classes due to needing a wheelchair led to a strong expression of empathy from Kathy: “A disabled student who was denied access to lab classes by male professors truly elevated Kathy’s empathy, “I think that empathy came out. I think that desire to just, you know, grab a hold of the student and just hold her.”

Other participants expressed more empathy for male students. According to Kathy, male students take ownership for late or missing assignments, adding, “You know I find that sometimes I'm a little bit more empathetic towards males because they don't always ask that.” Greater empathy toward male students was also discussed by Tiffany. She felt that attending classes that are female dominant can lead male students to be shyer, leading her to increase support and engaging them more.

Although participants may enjoy taking on an empathetic role, they may not attribute this to their role as an instructor, as was the case for Elora. She explained she will go to great lengths to accommodate students but sees “that as outside the teaching part.” Arianna also saw empathy as not necessarily a function of her being an instructor but as her being a human being,

I think in that moment, it wasn't about my role as a professor…it was just as a human being, or I guess you could say an academic mom in terms of kind of soothing her, you know. You have a student there crying about a situation in their life and trying to just give them a positive outlook towards life.
This study found that nurturing students is a reaction to having empathy. The participants discussed the different ways in which they nurture students, which is through emotional as well as academic support. For Tia,

I do go out of my way not to be intimidating and not to be threatening and to explain I know the coursework is hard. I try to be nurturing in that way. I would hope that my ratings were just that I was fair and a nice person, but I mean, who knows? I think it probably does impact in some way.

Beth told of nurturing students academically by teaching in a “student-focused student first” way and by being as helpful as possible. She was also focused on making sure her students are getting the most out of the class by enhancing learning opportunities. According to Ana Phylaxis, academic nurturing may be necessary in lower-level courses to ensure understanding of foundational material:

I kind of hold their hands and stuff like that. Because I'm like, if they're not getting it with me, I don't think they'll get it in the upper classes. They may not understand fully when they go to higher level courses. That's my fear.

Students with special needs automatically require extra nurturing. Jennifer taught a large number of such students. She felt this brought out the “mom” in her but also left her feeling overwhelmed.

Not every female instructor identified with being an academic mother. Bella and Peeled Grapes both worked against this perception. Bella preferred to keep her role professional and transparent in course expectations. She bluntly told them, “I’m not your mom.” A role perception of academic mom denotes a lack of equity with male students, according to Peeled Grapes who
asserted: “I'm a professor. I'm not an academic mom. And I don't want to be treated as one. Darn it, I want to be treated like the male professors.”

While Kelly did not fully see herself as an academic mom, she described a role mothers engage in, “I'm not being the mom. I'm being the sounding board that's trying to help you figure out how to navigate with the mom or the person at home that maybe getting in the way of something, if that makes sense.” Jennifer also admitted to acting like a mom, “I never really viewed myself as a mom before. I've never, I'm not a mom, but right now, I know that I behave as one.”

**Contribution to Career**

Many of the participants felt being seen as an academic mother had positively contributed to their career track. Some participants felt that their perception of being “nice” encouraged enrollment; others felt that it enabled them to earn positive evaluations from students for both promotion and feedback of their teaching abilities. Elora surmised, “Perhaps I wouldn't…there wouldn't be such good word of mouth and what evaluations.”

Several participants, including Ana Phylaxis, saw their role of an academic mother as enabling other female students to accept them as a role model,

I see a lot of female students, you know—they come up to me and I try to be a role model to them. I explain that when I was going through my training, through research and everything again that it was a male-dominated world and it wasn't always so easy. But I tell them, you have to stand your ground if you know you're right. You stand your ground and you can do it. You can be assertive without being quote-unquote seen as being bitchy. And so, you know, when I see them learning, I'm happy in a way, I guess, like an
academic mom. It's like your own kids are learning, and it's a great satisfaction to me. I can't say anything negative about that.

Negative Impact

A few participants saw AM as having a negative impact on their career, citing increased workload through student demands and lack of respect. Peeled Grapes expressed the frustration of student expectations of her role as an academic mother as being “nice and soft” and in having less respect than male faculty members,

I am a mom in my house. In an academic pursuit, when I go to work, I separate. I do not bring my work home. And I do not bring my pots and pans to work. So, I am not expected to treat my studies like I would treat my kids and my grandkids.

Anna was frustrated that despite putting aside her research to focus on her teaching, the students still were not happy, “I ended up so much time on teaching, preparing for it to ensure that my students are happy.” Upon receiving poor reviews, she recounted, “I wasn’t expecting that.” A participant in the focus group felt neutral about the identification as an academic mother, “I think sometimes when you're one on one with students, it can help because they will open up to you more. But beyond that, I'm not too sure it really has been helpful in the career.”

Conclusion

This study was conducted using qualitative methods to explore how female STEM faculty members perceive their classroom role. I sought to find a possible answer to the lack of their STEM presence in higher education programs of study. The phenomenon of AM was used as a lens to see how stereotyped expectations by institutions, as well as students, might affect their career trajectory. Findings showed that the participants experienced expected gendered behaviors by students such as being nicer, more willing to accommodate students, and being
more nurturing. Participants spoke of differing institutional expectations and perceptions from male colleagues including service work, being perceived as less competent or lower status, and feelings of inequity.

In developing categories, I examined all the displayed codes and organized them based on overlapping or similar meanings. The organization for the category of patriarchal *role positioning* was based on narratives that described expected gendered behaviors as well as stories of institutional oppression through gendered stereotyping, patriarchy, workload, and student expectations. This role positioning is defined as the expectations of women/female STEM faculty members to act in specific ways based on social constructs, leading institutions, colleagues, and students to position them as more caring, empathetic, nurturing, and “less than” (e.g., academically, respect) when compared to males. Such views position and oppress female STEM faculty members.

*Teacher–student interactions* refer to the positive and negative experiences the participants have with their students, which might influence career trajectories, self-perception, and job satisfaction. The final category, female *STEM instructor self-actualization*, describes ways in which female STEM faculty members realize how to reach their full career potential by overcoming stereotyping, oppression, and patriarchal systems through support, resisting prescriptive stereotyping, and personal motivation. These steps act as a means to achieve job equity, success, and job satisfaction. AM is the lens through which each of the experiences were discussed and weaved throughout each of the categories. Interrelationships were created by choosing themes that best defined and encompassed the others (Figure 4.2). These are further discussed in chapter 5.
The aforementioned experiences position female STEM faculty members within communal roles, leaving them to act as academic mothers who need to support both their students and institution. This role positioning leads to increased feelings of academic and emotional workload. Female STEM faculty members look for support and find mechanisms to help them persist within their career path. Boundary setting, positive student relationships, embracing role perceptions, and intrinsic motivation acted as tools in sustaining their careers.
Chapter 5

Conclusion

The lack of equity present in patriarchal belief systems can create obstacles and challenges for female faculty in higher education. This may create a noticeable absence of female faculty in tenured or higher-level positions (Hart, 2016; LaCosse et al., 2016; O’Connor, 2019), especially in STEM programs (Begeny, 2020; Botella et al., 2019). There are several roadblocks, which are founded in gender bias, which may limit opportunities for securing promotions and career advancement for female college faculty. One of the roadblocks includes higher education institutions themselves, which have been described as gendered or “masculine” and perpetuate inequality for women as compared to males (Acker, 1990; O’Meara et al., 2017). Other obstacles focus on student expectations of female instructors as softer, less competent, and more likely to cave to demands (El-Alyali et al., 2018).

Student expectations of female faculty are being concerned for their socioemotional as well as academic well-being, often leaving female faculty members feeling more like “mothers” than respected academicians. Societal perceptions of women position them as sensitive, nurturing, and caring, with negative reactions when they deviate from these prescriptive roles (Anderson & Miller, 1997; Basow & Silberg, 1987; MacNell et al., 2015). Similar to mothers, female faculty members, in a communal role, are expected to care about student personal lives as well as their emotional well-being, not just academics (Anderson, 2010; El-Alayli et al., 2018). In communal roles, female faculty are perceived as possessing warmth and being more approachable, whereas male faculty are expected to be assertive. This leads students to seek interpersonal relationships, including communication outside of the learning environment.
(Dobransky & Frymier, 2004). When they deviate from a communal role, female faculty members are rated as mean, rigid and the “worst” (Basow et al., 2006).

Student expectations and demands are greater in high-stakes STEM courses, as these serve as the gateways for entrance to programs such as nursing or other medical fields and are meant to weed out students who do not meet certain grade criteria (Ballen et al., 2018). The COVID-19 pandemic compounded female STEM faculty’s instructional and emotional workload. The emotional workload stemming from student relational demands and expectations lead to increased student expectations of socioemotional as well as academic support, leading to critical effects on female STEM instructor experiences of AM.

The purpose of this phenomenological study was to examine how female faculty in higher education, who teach in high-stakes STEM programs, may experience a role of AM and how they negotiate their role and responses within a patriarchal system. The study used a social constructivist worldview to fully examine the central phenomenon of AM. This aligns with feminist theory research in that it enabled me to co-construct an understanding of the social issue of women’s oppression as marginalization by relying on the participant’s view of the “lived experiences” of teaching STEM in a male-dominated field. In turn, I was able co-construct an in-depth understanding of the multiple experiences of AM by the female faculty.

Participant selection process was through a homogeneous snowball sampling (Etikan et al., 2016) of female STEM faculty teaching at various community colleges, four-year state colleges/universities and four-year private colleges/universities in the Northeastern metropolitan and suburban areas. The final pool consisted of 15 participants. Data collection included a series of three (two individual and one focus group) 60-minute in-depth, open-ended interviews focusing on the participants’ lived experiences and perceptions of their classroom roles as
academic mothers. Data collection, transcription, and coding occurred between September 2021 and December 2021.

In Chapter 4, I presented detailed findings of my study based on the interview data from female faculty members teaching in the STEM higher education programs. While female presence in academia is on the rise, there remains a notable difference between the number of male and female faculty members in higher education, particularly in STEM programs of study. Gender bias and prescriptive stereotyping of women as communal may lead to perceptions of female STEM faculty members as “academic mothers” (Bernard, 1964) rather than respected academicians.

Within this dissertation, I examined how female STEM faculty teaching high-stakes courses in higher education experience AM. Through the lenses of the SCM and FST, the impact of the phenomenon of AM was examined as a possible influence leading to the lowered presence of women teaching in STEM programs of study. My goal was not only to understand the participants perceptions of AM but also to delve into its impact in navigating patriarchal institutional systems. Lessons garnered from this study could benefit current and future female STEM faculty members as they negotiate their careers in higher education.

The purpose of this chapter is to present a summary of the study, a discussion of the findings as they relate to the literature, impactful results that arose from the data, and final conclusions. While Chapter 4 presented detailed descriptions of thematic evidence to answer the research questions, this section presents information as it relates to the research questions. The summary includes an overview of the first four chapters and includes the problem, purpose, methodology, research questions, and findings. I relate the findings to the existing literature as well as to the theoretical frameworks within the discussion section. The conclusion of this
chapter includes implications for future practice, the limitations of the study, recommendations for future research, and final remarks.

**Interpretation of Findings**

This section presents the findings in response to the research questions. I discuss how these findings relate to the existing literature, as well as the frameworks SCM and FST, as presented in Chapter 2. I then discuss the implications and the limitations of the study, provide recommendations for future research, and present final thoughts.

**Lived Experience of AM in High Stakes Courses**

RQ1: How do female STEM faculty describe their lived experience of AM in high-stakes courses?

Participants’ experiences of AM in high-stakes courses were evident. They included examples of participants’ parenting, students’ pressures to lighten course demands, students’ gendered expectations for female faculty to be more empathetic and nurturing, increased perceptions of workload, as well as differing perceptions of job satisfaction. For some participants, these experiences led to increased levels of oppression regarding their career goals, while for others, the experiences of AM enhanced their job satisfaction and sustained their career trajectory.

Based on my interviews with participants, I found that female STEM faculty described their experiences of AM in the context of the parenting role focused on nurturing and offering both academic and emotional support. Whether or not the participants identified as academic mothers, there was an overall acknowledgement that AM involves parenting of the students. Lessons taught to students move beyond content, as they described needing to teach students responsibility, as any good parent would. It aligns well with what El-Alayli and colleagues
(2017) found in their study on student perceptions of female faculty in higher education. Their study stated that female faculty are looked at as mothers who should worry about their emotional needs as well as their academic progress. Pease (1993) confirmed the theme of patriarchal oppression of female faculty by correlating their parenting role as an extension of social expectations of women to be “homemakers” as opposed to competent career women. He also pointed out that the institution becomes the “home,” with female instructors parenting the “students” (p. 134).

Students in high-stakes courses experience higher pressure to achieve specific grades for progress onto the next course level or gain entrance into more competitive programs. This leads them to have greater demands on female faculty for grade leniency, syllabus changes, and availability outside of class time. When female faculty do not acquiesce to student demands, retaliation occurs in the form of complaints and poor evaluations/reviews, which may affect instructor promotion or tenure. The participants discussed the pressure of balancing being firm but fair yet keeping the students “happy.” Chávez and Mitchell (2019) addressed this struggle for balance among female faculty, expanding it to include minority faculty and suggested reforms for the evaluation process.

Participants also felt that AM creates gendered relational presumptions on the part of female students who are also parents, due to their assumption that female faculty will be more compassionate toward them due to an unspoken solidarity. As previously discussed, student gendered expectations of female STEM faculty members situate them in nurturing roles more like mothers rather than respected faculty members. When female faculty members deviate from expected behaviors through agentic actions, they are faced with punitive reactions such as poor reviews on “Rate My Professor” or complaints to administration. Studies such as those
conducted by Carabajal and Hughes (2016), or Burke and colleagues (2017), confirmed such student retaliation when female faculty act in ways that go against the prescriptive stereotype of warmth.

In addition to the listed experiences, participants spoke of empathy for student situations such as home life, emotional state, and physical disability. As extensions of a personality trait of care, participant discussions included concern for students who had unstable home lives, either through domestic abuse or just an absence of parents. Other discussions focused on the increased student anxiety expressed over the past several semesters. Last, some participants expressed shock over lingering discrimination against students with disabilities who were banned from lab settings.

The layers of additional demands from students due to their female faculty status and AM approach contributed greatly to participants’ emotional workload. Participants reported needing to set boundaries between work and home life to alleviate the burdens brought by taking student emotional weight home. Students request female faculty for friendship or special favors more frequently than of male faculty. As discussed in Lin (2020), balancing student needs with their own emotional responses elevates female perceptions of emotional workload. Similarly, other studies found that demands for grade or syllabus changes, as well as need for socioemotional support, increase instructor workload exponentially (Chowning & Campbell, 2009; El-Alyali et al., 2018; Knepp, 2012; Kopp et al., 2011).

Muramalla (2019) found that perceptions of workload are affected by (a) in-class contact hours, (b) student enrollment, (c) grading, (d) office hours, (e) scholarly activities, and (f) administrative and committee service. Female STEM faculty may take on higher workloads than male colleagues based on their positioning as communal and inability to say “no,” due to fears of
deviating from expected gender stereotyping, thus receiving negative views by administration (Baker, 2016). Within this dissertation study, Beth and Kelly felt a sense of needing to be compliant as well as feeling an inability to say “no,” thus confirming prior studies. There is also the need for female faculty members to work twice as hard to prove themselves as competent as male faculty members (MacNell et al., 2015), as exemplified by engineering faculty members who participated in this study. Basow and Silberg (1987) also pointed out that female faculty live by a double standard in that they are expected to possess masculine attributes and yet act feminine in their behavior.

This dissertation’s findings confirmed course stakes as a factor affecting female instructor perceptions of workload. Low-stakes courses may increase instructor workload due to student neediness for academic support as well as increased availability for office hours (Allen, 1998; Basow & Silberg, 1987; Burke et al., 2017; El-Alayli et al., 2018). High-stakes courses equally affected workload due to student demands for grade change, increased time outside of the classroom and office hours, as well as being generally demanding. Jennifer and Kathy, who teach both high-stakes and low-stakes courses, spoke of the decrease in student pressure due to relaxed grade goals in low-stakes courses but increased hand-holding due to lack of academic preparedness. Those teaching high-stakes courses, such as Bella, cited escalations in student demands due to their need for grade achievement.

The exacerbation of all the above perceptions and experiences occurred due to the COVID-19 pandemic. Regardless of stakes, student needs for academic as well as socioemotional support rose exponentially (Apperibai et al., 2020; Kozimor, 2020). Faculty members were forced to move learning platforms from in-person to remote, fully online, hybrid or hyflex, with no transition time or opportunity to learn despite a skills gap (Kozimor, 2020;
Son, 2020). The transition to working from home was particularly difficult for female faculty members who were primary caregivers. They now had to mother their family while concurrently mothering their students (Apperibai et al., 2020; Malisch et al., 2020).

Female faculty job satisfaction is key for maintenance of instructor career path. Gappa (as cited in Romig et al., 2011) wrote of job satisfaction as enabling “professional growth, academic freedom and autonomy, flexibility, employment equity and collegiality” (p. 7). Institutional policies centered on hegemonic practice may infringe upon all of these tenets, in particular the last two. Participant reflections from this study confirmed female STEM instructor perceptions of lack of equity in schedules or promotions, increased career dissatisfaction and feelings of lower-class status. In addition, the lack of interdepartmental collegiality from both male as well as female faculty was another point confirmed by several participants including Beth, Kelly, and Tiffany.

Workload perceptions may affect female STEM faculty members’ persistence as educators. Institutional pressure to retain student enrollment can lead to unreasonable expectations of faculty for research and publications in addition to already having heavy teaching loads (Romig et al., 2011). Confirmed by this study, tenure and promotion are not guaranteed despite meeting publication demands (Wilson, 2008). Also confirmed through participant discussions was increased female instructor stress due to inequitable hiring practices and salary scale discrepancies favoring males. This was despite women conducting the same, if not more, workload than their male cohorts (August & Waltman, 2004; Webber, 2018). Arianna reinforced this idea, stating she sensed that hiring practices favored gender over capability and skill.
Connections to Stereotype Content Model

(1a) In what ways, if at all, does the framework of SCM shed light on the experiences of AM among female STEM faculty?

The SCM was developed vis-à-vis Eckes’ (2002) work on communion and agency. Within the SCM, there exists the bi-dimensional traits of commune and agency. Those who are communal are described as warm, nurturing, and empathetic, which are attributes associated with women. Agency, associated with men, is exhibited as leadership, decisiveness, and competence (Fiske, 2018; Rubin, 1981). These prescriptive stereotypes situate women as homemakers and caregivers. They are socially perceived as having high warmth but low competence and are thereby expected to maintain a “mommy track” (Cuddy & Fiske, 2004, p. 701). Women who chose a professional path (low warmth, high competence) deviate from expectations and are viewed negatively (Eckes, 2002).

The previously mentioned personality traits of commune and agency are founded in part due to systemic gender stereotyping, which has also been attributed to the lack of female presence in higher education due to the masculinization of STEM courses of study (LaCosse et al., 2016; McGuire et al., 2020; Watt et al., 2013). The inherent lack of science ability in girls is still perpetuated and can alter their path along the STEM pipeline (Kang et al., 2019; LaCosse et al., 2016; McGuire et al., 2020) due to sustained perceptions of lowered competence in STEM ability. Gendered bias against women in STEM may continue through unwelcoming institutional settings (Cheryan et al., 2009), with patriarchal policies leading to the masculinization of institutions (Acker, 2012). Female STEM faculty members are thereby viewed as less competent or not viewed with the same level of respect as their male colleagues (El Alayli et al., 2018). Findings from this study confirmed that female STEM faculty members are still subject to
discrimination and lack of respect, but this seemed to be discipline-dependent. Women teaching within engineering programs reported lack of respect for their ideas as well as perceptions of lowered academic ability, particularly early on in their career. Adjunct participants also experienced stereotyped bias, while the full-time participants in anatomy and biology programs did not report the same experience.

Aligning with SCM is also the questioning of female STEM instructor competence and teaching skills, which is also called into question by students due to perpetuated stereotyping (MacNell et al., 2015) as well as their positioning as academic mothers (Anderson, 2010; Burke et al., 2017). Engineering student bias against female STEM faculty was confirmed in this study through their questioning of participants’ ability. Previous research has also shown that students may harbor unconscious bias against female STEM faculty members, thus skewing evaluations and favoring male faculty (Basow et al., 2006). Discipline may again play a role in this, as female engineering faculty members in this study reported receiving poorer student evaluations compared to male faculty when teaching the same course and content.

Findings from this study align with the ideas presented in the SCM, which also provides a better understanding of the positioning of female STEM faculty members as AM. In their position of warmth but low competence, as perceived by students, participants expressed interactions with students as being both positive and negative and resulting in increased workload. According to SCM, students would see their faculty members as being more approachable and empathetic, leading them to expect greater socioemotional support than with male faculty members. These expectations align with “mothering.” In viewing their female STEM faculty members as “mother,” students may act like “bratty” children and be demanding, in this case for grade leniency, special favors, or additional office hour. As per the SCM, students
may view their female STEM faculty members as less competent than male STEM faculty. Participants reported needing to prove themselves, working twice as hard for academic respect, yet still having their abilities questioned by students.

The SCM explains not only negative repercussions due to acting outside of a gender specific manner but also due to not acting sufficiently in an expected gendered way. This leads to another struggle faced by female STEM academics: the double-bind of being seen as a female first and a faculty member second. Female faculty members are expected to balance warmth with competence (Kinahan et al., 2020; O’Meara et al., 2017). Participants mentioned being referred to by derogatory names or being spoken to inappropriately when they did not act nice enough or possessed a more agentic personality.

**Patriarchal Expectations Within Higher Education Settings**

1b) How do the female STEM faculty work with and against the system of patriarchy and the patriarchal expectations of who they are?

Masculinized institutions promote the patriarchal ideology of male dominance through the oppressive positioning of women through inequitable practices (Acker, 1990). To sustain their professional goals, female STEM faculty must work with and against the system of patriarchy and the patriarchal expectations in various ways. The securing of tenure played a role in whether the participants worked with or against the patriarchy. The female participants discussed working with the patriarchy early in their career through compliance, such as accepting less desirable course offerings and teaching times. There was a sense of inability to say “no,” as confirmed in a study by O’Meara et al. (2017) and a need to adhere to gendered role expectations to maintain their career paths and to secure promotion and tenure, as discussed by Kinahan et al. (2020). Participants spoke of overcoming the oppression of patriarchy through perseverance by
standing one’s ground and expressing their ideas, proving themselves through hard work, and climbing the promotion ladder. Supported by Boateng’s 2018 study, family, friends, or colleagues as a strong support system gave the participants emotional strength and/or mentorship to guide their navigation through hegemonic ideologies. The idea of the women who came before them, as suggested by hooks (1984), as a means to pave the road to surmount patriarchal oppression was mentioned by several participants.

A surprise finding that contradicts patriarchal beliefs was related to the institutions themselves. Participants did not perceive institutions promoting the stereotype of women being warmer and less competent nor any perceptions of AM. Tenure and promotions were secured by meeting criteria clearly outlined in checklists. Committee work was based on participant choice, not through assignment. Any positioning of female faculty as communal or less competent was conducted mostly by older males within the department level. Several participants reported being viewed as having inferior role status despite holding similar degrees, or having ideas dismissed by older male faculty. This change in institutional role positioning of female faculty may be due to several factors. As faculty age and leave the system, younger hires have different perspectives due to awareness of gendered stereotyping, thus lessening the hold of patriarchal norms. In addition, there is a movement to solicit women to join STEM careers, especially those considered male dominated such as engineering (Roldan et al., 2020). The past few years have acknowledged the benefit of women’s opinions and viewpoints, thus switching the perspective of less competent (Gupta, 2012).

**Patriarchal Ideology of Oppression and FST**

This dissertation study was grounded in the overarching framework of the feminist theory of oppression. Specifically, the oppression of female STEM faculty occurs through gendered
expectations and lack of equity as promoted by a hegemonic belief system. The diversity of lived experiences of female faculty lead to different types of gendered oppression, including organizational/institutional (Sangha-Ruo, 2020), collegial (Kiner, 2020), and student based (El-Alayli et al., 2018).

A seminal work in the foundation of the second wave of the feminist movement included Friedan’s (1963) *The Feminine Mystique*, which examined the positioning of men as dominant, leading to the oppression of women through the role as homemaker, leading to their loss of identity. The plight of participants within their positioning as AM aligns with Friedan’s writing. In this study, there are numerous examples “loss of identity” by female STEM faculty members as respected academicians. Participants spoke of feelings of inferiority and being viewed as “less than” when compared to male faculty. In more research-driven institutions, female STEM faculty’s ideas were dismissed, and there were stories of incidences where female STEM faculty members were quoted their own research by male faculty. Students contributed to their loss of identity by referring to them by name, rather than title. Finally, patriarchal institutional expectations of women as caregivers led to their discrimination for full-time positions or favoritism of male colleagues for desired schedules.

Another seminal work key to the feminist movement was *Feminist Theory from Margin to Center* by bell hooks (1984). In her writing, hooks called for women to unite in a sisterhood to overcome oppression and marginalization by hegemonic practices. While this idea correlates with participants’ reliance on a support system to assist in their career path, participants surprisingly discussed a lack of female support between female colleagues within the same department or institution. The lack of intra-sexual support opposes the tenets of feminism through continuation of oppression of women. FST can explain the experiences of oppression of
female faculty through the patriarchy as well as by other women. FST was developed by the feminist authors Hartsock (1983), Harding (1983), Hill Collins (1990), Smith (1979), Rose (1991), and Jaggar (1983) to explore the power dynamics between oppressors and the oppressed.

As discussed in Chapter 2, FST is rooted in the idea that knowledge is socially situated (Haraway, 1988). Due to their social positioning, marginalized groups are better suited than non-marginalized groups to examine social issues, thereby situating them as the starting point for research. This dissertation study looked at female STEM faculty members as a marginalized group within patriarchal institutional systems. The knowledge gathered in this study was situated within the context of being throughout a semester while experiencing oppression, AM, and stereotyping, thus establishing the standpoint from which to describe the lived experiences of hegemonic oppression.

Looking at the standpoint of oppression would lead us to question why the participants sensed a lack of sisterhood or experienced subjugation by other women in more superior positions. These actions lead to classism and perpetuate the patriarchy through the role repositioning of the oppressed becoming the oppressor. It would stand to reason that with the lack of female STEM colleagues, faculty members would seek each other out in camaraderie to shatter the glass ceiling.

Prior research on business dynamics has postulated a “queen bee” syndrome (Staines et al., 1974) in which women who have experienced discrimination in male-dominated workplaces separate themselves from other women. For this study, I propose that queen bee positioning may be an attempt to hold onto their position and not be “dethroned” (Allen & Flood, 2018). Participants described this positioning as a “rite of passage” in which women in subordinate roles
were expected to “pay their dues” in a sort of hazing (Kiner, 2020) and work their way to the top, as those in higher positions had done.

Another plausible explanation for the lack of sisterhood may be that the women who have achieved higher status have done so through agency. In this scenario, women who act with agency may view females who are more communal with disdain, thereby holding them in a lower status. This internalized sexism occurs by agentic women who assimilate with the patriarchal stance of one’s rightful place (Kiner, 2020). According to the trait of communalism as described in the SCM, women are not competitive. It therefore stands to reason that if a woman possesses masculine characteristics of agency, she will also possess a competitive nature, adding another layer to a lack of sisterhood. A surprise perspective on the topic of collegiality came from Beth who did not feel it was necessary to be friendly with another faculty member just because they are the same sex. She attributed this to personality preferences rather than a relational aggression or positioning.

As mentioned earlier, the participants have relied more heavily on family and friends, rather than interdepartmental colleagues, for support. While some participants have joined campus-wide groups, such as women’s faculty associations, which enable female faculty to unite in an effort to overcome patriarchal oppression, others mentioned the numerous female-based national and worldwide associations offering support for STEM faculty.

One’s positionality, or place located in a social setting (Hearn, 2012), may play a role in patriarchal role positioning. Several participants, such as Ana Phylaxis, Bella, and Science Female, discussed how female students are more likely to seek a “sisterhood” with them through interpersonal relationships or, as mentioned by Science Female, the use of shared experiences through motherhood. Tiffany, who teaches in a female-dominant university, contradicted this
finding by recalling increased support needs of her male students. Within this primarily female student population, the patriarchal ideology of male dominance was contradicted, leading to a role reversal of females as agentic, causing the male students to be in an oppressed role. The role reversal for the female students may be due to a sense of competence created within a less masculine institutional system. With competence comes agency, which may be intimidating for male students leading to their need for more support.

In addition to gender, female faculty also face oppression due to race, class, age, and ableism, warranting a discussion of intersectionality. FST, in conjunction with intersectionality, can also be used to understand how female faculty undergo experiences of oppression through the intersection of their gender with race, class, age, and ableism. The experiences of oppression, as discussed by the participants in this study, are exacerbated within marginalized groups—most notably black female faculty (Charleston et al., 2014). Intersectionality (Crenshaw, 1989) looks at how lived experiences are shaped by the intersection of gender, race, class, age, and ableism. Black female faculty’s experiences of perceptions of low competence, fatigue, and lack of professionalism are greater due to socially promoted preconceived expectations by institutions as well as students (Young & Anderson, 2021). Hearns (2012) pointed out that preconceived ideas of “power dynamics, bias and socially constructed notions” of minority faculty are in place prior to the first class meeting (p. 39).

The intersection of gender and race within the standpoint of oppression through marginalization may explain the experiences of Hannah (Middle Eastern-Iran), Anna (Asian-India), and Peeled Grapes (Armenian-Egypt). Each spoke of experiences where their competence was called into question. Hannah recounted students looking at her work and angrily asking if she knew what she was doing, while Anna recalled receiving poor reviews despite teaching the
same material and in the same manner as a male faculty member. Peeled Grapes was especially sensitive to the lack of respect toward her from both colleagues and students. Apex (Asian-Chinese) contradicted oppression due to being a minority by stating being Asian benefitted her positioning due to stereotypes of Asians being “good in science.” Although participants spoke of ways in which they navigated patriarchal systems (compliance, support, perseverance), the intersection of gender with race led to the navigation through the patriarchy to be particularly taxing, with both Hanna and Anna speaking of how they must work “twice as hard” and put in extra work to be respected.

It is important to discuss the lack of participant diversity within this study—most notably the absence of Black and Hispanic female STEM faculty—despite an exhaustive search through snowball sampling. Within patriarchal positioning, White males are the dominant group, thereby positioning women of color in the most inferior status. Combining this mindset with FST, it is possible that oppression of women of color, founded on the intersection of race and gender, may discourage their continuation in STEM careers. According to the NCES, women make up 38.9% of the STEM undergraduate population, with Black women making up only 2.9% of that number. Their loss along the STEM “pipeline” is even more striking when looking at employment. The percentage of Black women in tenured full-time faculty positions is only 1.4% (NCES, 2019). The power dynamic of White male as oppressor, combined with the disempowerment and oppression of women of color (Young & Anderson, 2021), may not only impede their career path but also prevent their entry into an already male-dominated career, thus warranting further study.
Contributions of Academic Momism in Career Trajectory

(2) How do female STEM faculty see AM as a contributing positively and negatively to their career trajectory?

While the role of AM can have a positive impact on students who need faculty members with patience and who will emotionally support them, it can equally lead to a negative impact. Bernard’s (1964) work suggested that students who need extra support should be “weeded” out of programs. Since initial high-stakes courses needed for program entry act as a weeding-out process, academic mothering may propel students into courses of study that may exceed their skill level, but the importance of socioemotional support as a factor for academic success was unknown at the time of Bernard’s writings. Based on participants’ responses from this study, AM acted as vehicle to convey difficult material to students on multiple levels. The approachability and comfort level created by faculty members perceived as AM made students more receptive to the learning process and supported their emotional needs, thus helping them reach their academic goals. Through the enhanced support offered through AM, students are able to meet the rigors of study and the high standards required within high-stakes courses as gateways into science-oriented careers.

Participants’ responses as to the impact of AM on their career trajectory varied. Some participants saw AM contributing positively to their career trajectory since they received better student reviews, saw higher student enrollment in their classes, and were able to use these factors as leverage for better course offerings and promotions. These participants found a way to use their positions as nurturers to circumvent patriarchal oppression through positive student engagement. The positive reviews and enrollment numbers anchored them as valuable assets to their institutions and may have repositioned their perception when compared to male faculty. The
outcome of nurturing and care ethics can be used as an example for other female faculty trying to maintain their career path. By embracing their positions as AM, these participants acted as ambassadors and opened the door for success of other female STEM faculty.

Other participants saw their role as an AM as contributing negatively to their career, citing lack of respect from both students and the institution (Burnett et al., 2012), lowered perceptions of competence (El-Alayli et al., 2018), and increased workload (O’Meara et al., 2017). For some, a role of AM led them to question their self-worth as they felt they were not seen in the same light as male faculty. Loss of female faculty due to lack of support, poor school climate, and increased perceptions of emotional workload has been studied by Chambers and colleagues (2019). This dissertation study showed how a role of AM can enhance these feelings, leading to a lack of attrition of female STEM faculty. Finally, some participants felt neutral about being an AM, stating they had not given thought to this role perception and felt their empathy and nurturing were outside of their teaching role, reflecting a care ethic from being a human being.

With the COVID-19 pandemic escalating student support needs, female STEM instructor emotional workload also increased, thus enhancing both the positive and negative contributions of AM to the career path of female faculty in high-stakes STEM. While the student support expectations are a function of the nurturing component of AM, student demands may be related to entitlement. Academic entitlement refers to student expectations for inflated grades while putting forth minimal effort or submitting mediocre work (Cain et al., 2012; Chowning & Campbell, 2009; Lemke et al., 2017; Luckett et al., 2017; Twenge, 2006). Female faculty are more susceptible to the demands and irrational expectations of entitled students (Chowning & Campbell, 2009; Kopp et al, 2011). Over the few years, institutions of higher education have
become more of a business than institutions of learning (Lippman et al., 2009). Competition to increase and maintain enrollment has positioned students as consumers, with schools being the marketplace (Lippman et al., 2009). Students see grades and degrees as a commodity that they have purchased. When they do not receive their “goods”—in this case, a grade or degree—they act like disgruntled customers.

There is much research on the dynamic of Millennials as entitled (Chowning & Campbell, 2009; Kopp et al., 2011) but little on learning dynamic and expectations of Gen Z. While the current generation entering universities is Gen Z, there appears to be a generational overlap with Millennials attending classes as well. This creates a unique multigenerational classroom dynamic in that Millennials are described as “entitled,” with Gen Z being more technology savvy, more independent, and “driven by a desire for a helpful, responsive, practical educational environment” (Miller et al., 2019, p. 80). Although Millennial students were subject to “helicopter parenting” and high levels of academic guidance, incoming Gen Z students are faced with unclear academic goals and less parental handholding than they experienced in high school. This leads them to seek faculty members to care for them and help support their success (Miller et al., 2019). In this case, the increased need for care and support from faculty members aligns with female STEM faculty members being situated as academic mothers.

Female Faculty Role Negotiations

(2a) How do they negotiate their roles and positioning as AM in relation to their career aspirations?

The central phenomenon examined in this study was that of AM. Coined by Bernard in 1964, AM describes student perceptions of female faculty members as warmer and more nurturing than male faculty. As previously mentioned, female faculty face a double-bind of being
viewed as a female first and a faculty member second (Kinahan et al., 2020). This means they are subject to prescriptive stereotyping of being female, as an AM, and as the gender STEM stereotyping of being less competent in STEM fields of study (El-Alayli et al., 2018). The participants in this study negotiated these roles through student–teacher interactions, maneuvering service work and embracing their position as an AM. Participants spoke of the increased workload created through lesson planning to prove their competence to students as well as their institutions. Balancing the emotional workload created through AM was achieved by boundary setting through time management. The following sections present how female STEM faculty navigate their positioning as AM.

While female STEM faculty negotiate their roles and positioning as AM in relation to their career aspirations in several ways, a key component was student-teacher interactions. The participants used their approachability to develop positive connections with students, thus facilitating the learning process. Establishing positive student relationships also acted as a means of enjoyment to help sustain careers in education. Student sense of care and support may be reflected by positive student acknowledgement conveyed verbally or in evaluations. Participant role perceptions which go beyond that of AM enabled them to self-actualize their career path. The last mechanism of role negotiation involved work–life balance.

Role negotiation as an AM involves being able to manage layers of relationships with students. Student demands, relationship requests, and emotional support needs brought on by life challenges can weigh heavily on female faculty. This emotional workload has a greater impact on female instructor trajectory in that this is not considered within the promotion process. Female faculty members not only have the pressure of mothering their students emotionally, but they must also take care in how they interact with students, being sure to make them happy, for
fear of repercussion (Carabajal & Hughes, 2016). As confirmed in this study, there is an additional pressure from students to alter grades, assign less work, and adjust the syllabus based on student demands (El-Alayli et al., p. 137) or face being viewed negatively (Rubin, 1981). Multiple participants, such as Peeled Grapes, confirmed El-Alayli’s et al. (2018) study showing that female professors report more work demands, special requests, and greater student-initiated friendships than male faculty. These engagements may be due to the empathetic personalities presented by female faculty. In addition, Takiff et al. (2001) found that female faculty members must present “stereotypically feminine characteristics” (p. 142) and meet student demands or face punitive responses. As confirmed by Bella and Peeled Grapes, other studies showed that students were more likely to have a poor response to female faculty, saying “no” to demands when compared to male faculty (Anderson & Miller, 1997; Basow et al., 1987).

Full-time female STEM faculty must also maneuver their career path through fulfilling institutional service work requirements. Some institutions participate in adding to female instructor workload through greater and more nurturing service work requirements than expected of male faculty (Guarino & Borden, 2017). Female faculty members are thereby expected to care for their “academic family.” Within this dissertation study, participants did not report increased service work expectations by the institutions. This was most likely due to the ability to volunteer for committees rather than be mandated to serve on specific ones. It is of interest to note that increased service workload was due to gendered expectations by male colleagues. Jennifer mentioned that male committee members expected her to complete their tasks, while Ana Phylaxis was asked to “bring a lasagna” to the next meeting, thus exemplifying role positioning of women as “less than” and as homemakers.
Another surprise finding was the use of AM in career navigation. Prior research has not explored patriarchal role negotiation through AM. Despite oppression via stereotyping, gendered discrimination, increased academic and emotional workload, student demands, and difficulty in work–life balance, this study showed that female STEM faculty members can use their role as AM to help maintain their career path. A possible reason for successful use of AM in career navigation is explained through feminist Ethics of Care theory, where Gilligan (2003) used it as a response to perpetuate patriarchal injustices that position women, as opposed to humans, in a role of care. Injustice occurs through patriarchal policy that applauds leadership traits but looks down upon nurturing personalities. Gilligan saw the female voice as that of “relationships, responsibility, and deep emotions such as care or a care perspective,” thereby explaining why female STEM faculty members as AM find fulfillment in teacher–student interactions and relationships.

As discussed earlier, our upbringing primes us to fill specific prescriptive stereotyped roles, with women being prepared as mothers. For some female STEM faculty members, embracing AM may fulfill the gender identity–based “need” to mother (Bogaert & Ogunbanjo, 2009). Gilligan (1979) saw the mothering role as developing through upbringing. In her essay “A Woman’s Place in A Man’s Lifecycle,” Gilligan quoted Chodorow (1978, p. 166) who stated “mothers tend to experience their daughters as more like, and continuous with, themselves,” thereby instilling the traits of care and mothering within their daughters, not their sons. The mother–daughter relationship creates women whose personality has a “basis for 'empathy' built into their primary definition of self” (1978, p. 167), positioning them to experience others’ needs and feelings as their own (Gilligan, 1979).
Gilligan also pointed out that “a woman's place in man's life cycle has been that of nurturer, caretaker, and helpmate” (1979, p. 440). This implies two crucial points: (1) if women deviate from this “place in a man’s life cycle,” there can be negative consequences; and (2) by being positioned as AM, female STEM faculty members are fulfilling their self-need to care for others while maintaining their patriarchal imposed role of caregiver. The summation of these points provides a plausible explanation for female STEM instructor use of AM to navigate their career. Interestingly, participants who did not feel they identified as academic mothers admitted to “parenting” their students and feeling a need to support them. It therefore stands to reason that the role of academic mother fulfills a need, leading to greater job satisfaction and career trajectory.

“Academic Parent”

Participants suggested that there are ongoing social changes of gender roles and patriarchal expectations. Both Science Female and Ana Phylaxis summarized this idea stating, “Things are changing.” Tiffany also spoke of the empathy and nurturing exhibited by male faculty during the COVID-19 pandemic in response to student support needs, expanding the role of caregiver to include both female and males. Other participants, such as Bella, felt they “parented” their students despite not identifying as an academic mother. This study is therefore suggestive of “academic parent” as an extension of AM and a new definition of perceptions inclusive of both female and male faculty.

The term academic mother, as defined by Bernard in 1964, is specific to gender role expectations of women, and as such, it excludes male faculty. Within her book Academic Women, Bernard described female faculty deemed as “academic mothers” who were more nurturing and supportive and others who were stricter in their role perception. Although this
study focused on more general perceptions of what AM is, it is important to note that there are different parental and maternal styles with different degrees of nurturing and permissiveness. The participants in this study also described the many roles the participants took on as faculty members, with some positions being more supportive and others being more withdrawn or focused on the leadership aspects. As per the role of AM, motherhood involves similar role perceptions that vary, with mothers needing to be strict at times and more lenient at others. These roles are not limited to women and can be equally attributed to fathers, thereby validating the term *academic parent*.

The idea of an “academic parent” aligns well with the feminist ideology of equality and encompasses this study’s findings regarding the layers of participant role perceptions. The term *mother* implies a position of caregiving, but equality in gender roles supports inclusivity of males as well as females in this role. Role equality for faculty would include student expectations of nurturing, support, competence, and leadership from both female and male faculty. Interestingly, Burke and colleagues (2017) found that students consider the ideal professor as possessing stereotypical traits of both males and females, further supporting the idea of “academic parent.”

Gender role expectations have changed since AM was first coined by Bernard in 1964. As reported by this study’s participants, caregiving and nurturing are no longer the sole responsibility of women. In addition, students prefer instructors who possess both stereotypical masculine and feminine traits (Buke et al., 2017). The distribution of care expectations and responsibilities to both male and female faculty indicates the evolution of changing gender roles and supports the development of the new term *academic parent*. 
Trustworthiness

I took a number of different steps to ensure the validity and trustworthiness of this study. During the interview process, I took richly detailed field notes by paying attention to participants’ demeanor, body positioning, tone, and noting their emphasis on keywords. The participants’ interviews were recorded and immediately transcribed using an online transcription service. I reviewed the recordings to validate the online transcription, manually correcting any errors. The use of multiple participants enabled me to gather information that contained a variety of perspectives surrounding the phenomenon of AM. I was also able to triangulate data by incorporating purposeful and in-depth interviews with participants, along with focus groups that allowed me to verify consistencies and inconsistencies in participants’ responses, further validating the data in this study.

Data analysis was repeated at least twice, through which I was sure to be cognizant of my own positioning as a female STEM instructor who teaches high-stakes courses. I reviewed my personal notes for each interview as I analyzed the data. Prior to writing, I member-checked my findings by emailing the participants. This ensured that I was clearly and fully describing their experiences, thus increasing the validity of this study. I also worked with my dissertation committee to confirm my codes and thematic analysis, thereby ensuring trustworthiness.

Limitations

One of the limitations to this study was a notable absence of diversity among the participants. Most of the female faculty members interviewed were White except for four (Asian Chinese, Asian Indian, Egyptian, and Iranian). This lack of diversity limited the opportunity to study the intersection of race and gender. Within the discussion portion of this chapter, I explored how cultural norms influence gender role expectations. This study would have
benefited through a worldview of cultural expectations and the influence on female STEM instructor perceptions. Several Black faculty members had discussed the opportunity to participate in the study, but as clinical nursing faculty members, they did not meet the criteria. The participants recognized the lack of interdepartmental diversity as well.

Another limitation of this study was the geographical location of institutions in which the participants were employed—Northeast metropolitan and suburban areas. The participants taught mostly in suburban areas, with only a few who worked in the metropolitan location. The teacher–student dynamics may have been different in a more urban setting due to differences in student demographics, thus altering instructor perceptions. An urban setting may also have a more diverse female STEM faculty population. The lack of instructor diversity in suburban institutions may be due to financial reasons. Pay scales in metropolitan areas are higher than in suburban areas. Given the cost of living, it is possible that more STEM faculty members look for positions in higher paying locales.

In addition to the location, lack of diversity between the Carnegie rating of the institutions created another limiting factor. Almost all the participants were teaching at the teaching institutions, with one exception of the research (R1) institution. Competition and stakes in an R1 setting are typically much higher and thus greatly affect experiences of AM among the participants of this study. It would be of great interest to examine the presence, or absence, of a sisterhood within a high-pressure institution.

Implications

There are several implications of this study for educational policy and change regarding females in STEM programs. This dissertation study sought to examine female STEM faculty members’ lived experiences of AM. Each of the theoretical frameworks used in this study is
connected to the overarching feminist theory, which focuses on equality for all. FST, which for this study looked at oppression of women thorough the lens of the oppressed, female STEM faculty members. The next ensuing layer is SCM, which positions women as nurturing or communal and less competent, and men as leaders or agentic and more competent. As shown in this study, female STEM faculty members may be viewed as less competent. In addition, women who act outside of their stereotyped expected role are viewed negatively. In this study, that meant being denied promotion or receiving poor student reviews. The culmination of these theories led to the central phenomenon of AM.

Participants used the term *compliant* to describe their role perceptions early on in their careers. This lack of assertion may be attributed to upbringing. According to Bem’s (1983) gender schema, children are taught normative behaviors based on the culture in which they live. Deviation from these role expectations leads to negative repercussions. Expectations of compliance and “mothering” are taught in the United States; girls are expected to behave in more passive ways and boys to be more assertive and tough (Koenig, 2018). Girls are given dolls and kitchen sets to play with, thereby grooming them to be mothers from early childhood. The idea of culture dictating gender roles explains why Apex, who was raised in communist China, which emphasizes gender equality and sameness (Wielink, 2019), did not see her role in STEM as gender influential. Based on these findings, it would be of value to establish school policies early in the education process that promote equitable, gender-neutral practices. Promotion and tenure policies that incorporate student evaluation platforms, such as “Rate My Professor,” should be modified, as ratings may be subject to systemic bias based on personality traits. In addition, efforts should be made to educate faculty members on proper student support in all disciplines, regardless of student sex.
Female STEM faculty members teaching in male-dominated fields, such as engineering, reported perceptions of being “second-class citizens” due to poor course offerings, dismissal of ideas, and having their competence questioned. This oppression is founded on patriarchal institution systems, with men being the dominant and women being oppressed. In addition, the SCM aligns warmth with lack of competence, thereby compounding the oppression of female STEM faculty members. In attempts to overcome this perception and prove themselves, they may work twice as hard as male faculty members, have elevated workloads, and ensuing difficulty managing work–life balance. The findings of this study can help institutions understand the importance of implementing equity in course offerings. Policy changes regarding promotion and tenure should also be implemented to ensure equal opportunities for all faculty to achieve career advancement. It is worth noting that equity in course offerings for full-time versus adjunct faculty is difficult since adjunct instructors tend to teach surplus courses due to the absence of enough full-time faculty (Meier, 2019). Professional development workshops should be developed on the topics of unconscious workplace bias and stereotyping, with a focus on ways to prevent a negative workplace environment.

A surprise finding was the lack of sisterhood between female faculty members. Institutional mechanisms to improve female support of each other should be developed and encouraged. Workshops or seminars on female bullying or relational aggression would bring awareness to this pervasive lack of support. Establishing on-campus support groups, such as a women’s faculty association, promotion of female–female mentorships, and connections with female faculty networks are ways to develop on-campus support for female faculty.

Female STEM faculty members’ self-actualization of their classroom roles, either embracing or denying AM, provides insight into what propelled and sustained female STEM
faculty members in their career paths. A key finding in this study was female STEM instructor use of their prescriptive roles to navigate through patriarchal oppression. Institutions need to acknowledge the importance of female faculty members as nurturing and therefore easing the learning process by creating a classroom environment of approachability and comfort. This supportive learning environment within the classroom, as created through perceptions of female STEM faculty members as academic mothers, is of great significance for post–COVID-19 instruction. Recent studies have pointed out an ongoing student-disengagement crisis (McMurtrie, 2022), where incoming freshman have spent their last two years of high school learning through a remote platform and may feel disconnected from an in-person setting. There has been the fear of loss of family members and now the potential for a Third World War due to the Russian-Ukraine war (McMurtrie, 2022). Many students seem unable to focus and arrive to universities unprepared to face the rigors of learning.

Educators have presented various resolutions to rectify the crisis, with recurring themes of making connections, creating rapport, and encouraging student engagement through classroom interactions (How To Solve The Student Disengagement Crisis, 2022). Female STEM faculty members may be able to use their positioning as academic mothers to assist in this plight. This study has confirmed that students find female faculty members more approachable and are more willing to open up to them. Enabling these teacher–student interactions may provide a mechanism to ease students out of their disengagement, thus promoting learning and re-establishing the university culture.

A final implication of this study is the double-bind of work–life balance. Female faculty members strive to be respected academicians and achieve career goals but are still expected to be caregivers to their families as promoted through gendered expectations. While this study’s
participants spoke of creating boundaries to maintain balance, it is not enough. It is crucial that institutions allow flexibility in course offerings to female faculty. This includes type of course as well as time offered. The at-home responsibilities experienced by many female faculty members warrant pliability in conducting studies to meet the research and publication demands of many institutions.

**Recommendations for Future Research**

As previously mentioned in the limitations section, this study was conducted among female STEM faculty members who taught primarily at teaching institutions. Repeating this study at more competitive research institutions may provide a greater insight into female STEM instructor perceptions of AM. Use of the SCM might also glean insight as to whether personality trait differences exist between the students attending and the female STEM faculty teaching at more research-based institutions, thus altering their experiences.

Expanding this study outside of the metropolitan area could also be of value. The perceptions and experiences gathered in this study represent a specific genre of women. Looking at institutions across the East Coast or transcontinental would provide greater diversity in the participant pool. Different regions may have different or evolving social expectations of women, thereby altering their perceptions as academic mothers. A global study would be equally fascinating through a comparative study of patriarchy, gendered expectations, and female STEM instructor experiences.

Due to restrictions brought on by the COVID-19 pandemic, the interview process used in this study was conducted via Zoom. Lack of in-person contact might have altered some of the responses. Several participants took their Zoom meetings in their homes, with a lot of ongoing activities in the background. This may have distracted their thought process or caused them to
rush responses. Also, establishing the rapport with participants only via Zoom was not always ideal. Due to the unique situation created by the limitations of the pandemic, it would be worthwhile to repeat this study under a neutral, in-person setting to see if the responses differed.

A final future study could look at students and the development of their perceptions of female faculty members as AM. Female STEM instructor positioning as academic mothers, while rewarding for many, leads to increased workload. Early childhood learning and intervention preventing the development of negative stereotypical views may be developed by exploring the developmental foundations of student perceptions of female STEM faculty members.

**Conclusions**

This dissertation study examined the lived experiences of female instructor perceptions of their classroom role as academic mother, in an attempt to provide a greater understanding of their job challenges and career trajectories. This chapter summarized the themes that emerged from my qualitative study. The themes were related to the literature to describe the lived experiences of female STEM faculty members’ experiences of AM. These experiences included patriarchal role repositioning by institutions, colleagues, and students due to societal expectations. This study also described the impact of student–teacher interactions on academic as well as emotional workload, as well as the how these relationships sustain female STEM faculty in their careers. Instructor self-awareness of their roles, support systems, and boundaries were explored as mechanisms to sustain their careers. In summary, this dissertation study provided evidence that female STEM faculty members may use their role of AM to navigate patriarchal institutions and sustain their career path. This study brought to light the impact of prescriptive stereotyping on
perceptions of female academicians as a possible mechanism affecting their career trajectory. These impacts can contribute to the lack of female STEM presence in higher education.
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Development of a college readiness benchmark and its relationship to secondary and


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https://doi.org/10.18060/24210


Appendix A

IRB Approval Letter

DATE: August 23, 2021

TO: Donna Cempa-Danziger

FROM: Molloy College IRB

PROJECT TITLE: [1768826-1] A Phenomenological Investigation of Academic Momism: Perceptions of Female College Faculty's Role Expectations in High Stakes STEM Courses

REFERENCE #: New Project

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: August 23, 2021

REVIEW CATEGORY: Exemption category # 2

Thank you for your submission of New Project materials for this project. The Molloy College IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations. However, exempt research activities are subject to the same human subject protections and ethical standards as outlined in the Belmont Report.

You may proceed with your project.

This acknowledgement expires within three years- unless there is a change to the protocol.

Though this protocol does not require annual IRB review, the IRB requires an annual report of your exempt protocol (Expedited and Exempt Research Protocol Annual Report Form) which is available on the IRB webpage.

If there is a proposed change to the protocol, it is the responsibility of the Principal Investigator to inform the Molloy College IRB of any requested changes before implementation. A change in the research may change the project from EXEMPT status and requires prior communication with the IRB.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact Patricia Eckardt at 516-323-3711 or peckardt@molloy.edu. Please include your project title and reference number in all correspondence with this committee.

Sincerely,
Patricia Eckardt, Ph.D., RN, FAAN
Chair, Molloy College Institutional Review Board

This letter has been issued in accordance with all applicable regulations, and a copy is retained within Molloy College IRB's records.
Appendix B

Sample Recruitment Letter

Dear Potential Participant,

My name is Donna Cempa-Danziger and I am a doctoral student interested in studying how female STEM faculty describe their perceptions of their classroom role in a patriarchal institution. This study will explore gender and stereotype and will focus on feelings of academic momism. Academic momism describes students’ expectations of female faculty as being more patient, lenient, nurturing, providing more emotional support, and acting more like a mother than an instructor (Bernard, 1964). Additionally, students may feel that female faculty will be more concerned about their emotional well-being than male faculty.

I would be very interested in learning about your feelings and experiences as a female STEM faculty member.

Participant Criterion Self-Checklist:

- Female STEM instructor Yes ☐ No ☐
- Currently teaching in a STEM course this semester Yes ☐ No ☐
- Full time teaching in STEM for at least 2 semesters Yes ☐ No ☐
- Adjunct teaching in STEM for at least 4 semesters Yes ☐ No ☐

If you answered yes to all the questions, you meet the criteria to participate in the study.

Study Obligations:
The participants will be asked to take part in two individual 60-minute recorded interviews plus a focus group interview over the course of three months. This study will extend through early November.

Thank you,

Donna Cempa-Danziger
Appendix C

Interview Protocol

For all respondents: The study will be explained to the subject by the researcher, and the subject’s questions will be answered. The researcher will explain that the interview is confidential, and that the information gathered during the interview will be used for educational purposes only. The interview will take about 60 minutes of their time. The subject will give verbal agreement to participate in the study and agree to be recorded.

Date: ______________

Start Time: ___________ End Time: __________

Release form signed: ( ) YES ( ) NO

Years of teaching: ___________________________

Major and degree _____________________________

Position ( )Full-Time ( )Adjunct

If full time, status: ( ) Tenured ( ) Non-Tenured

If tenured: ( ) Associate Professor ( ) Assistant Professor ( ) Full Professor

Courses taught this school year: ________________________________

I. Introduction:

For all respondents: The Principal Investigator will explain the study to the participants. The consent will be read, and the subjects’ questions answered. The subjects will sign individual consent forms. A dated and assigned copy will be given to each subject.

Brief Project Description:
Thank you for agreeing to participate in my dissertation study. My research focuses on female STEM faculty and their lived experiences of academic momism. More specifically, I want to explore how you view yourself in your role as female STEM instructor of high stakes courses in a patriarchal system. I want to learn about the successes and challenges that you experience as female STEM faculty member working in a male dominated field. Areas I would like to explore include student interactions and expectations, academic as well as emotional workload, stereotyping, as well as how women navigate a career in STEM in higher education.

Interview 1: Focused life history and details of the experience

(1) How do female STEM faculty describe their lived experience of AM in the high stakes courses?

(1a) In what ways, if at all, does the framework of Stereotype Content Model shed light on the experiences of academic momism among female STEM faculty?

Describe your career background.

How did you come to choose a career in STEM?

Probe: How many years have you been teaching in STEM?

Tell me about your current role and teaching environment in as much detail as possible.

Probe: What are the courses you are teaching?

Probe: Are these considered high stakes courses?

Could you elaborate on the male to female faculty ratio in your department?

Probe: You mentioned the male to female ration is _____. Can you describe the interdepartmental dynamic this creates?
Probe (If higher male ratio): Can you please elaborate on your feelings about this discrepancy.

How do you see your position as a high stakes STEM instructor?

Probe (if needed): Do you see yourself as a mentor? Leader? Nurturer?

You mentioned seeing yourself as ________. Could you elaborate on how you think your students see you?

Probe: Could you please give specific examples of why you believe they feel this way?

We’ve discussed the idea of AM in terms of this study. Please explain to me how you would define AM.

In as much detail as possible, please describe how does the idea of AM relates to your role as a female STEM instructor?

Probe: What influence does being a high stakes instructor have on your feelings of AM?

In what ways do you feel stereotype has played a role in your feelings of AM?

Probe: Would you say this is more student based, institutional or both. Please give me examples.

Do you encourage or discourage interpersonal interactions with students in the classroom context? Please elaborate on this.

Probe: You mentioned that students seek relationships with you. How does this affect your feelings and experiences of emotional workload? of AM?

Probe: Do you think male faculty have the same requests of interpersonal relationships by students?

How does being an instructor of high stakes STEM courses affect your experiences of emotional workload and AM?
Do you have any more thoughts you would like to add about your role, AM, and student/institutional perceptions?

Interview 2

(1) How do female STEM faculty describe their lived experience of AM in the high stakes courses?

(1a) In what ways, if at all, does the framework of Stereotype Content Model shed light on the experiences of academic momism among female STEM faculty?

(2) How do female STEM faculty see AM as a contributing positively and negatively to their career trajectory?

(2a) How do they negotiate their roles and positioning as AM in relation to their career aspirations?

We are now in the semester and are somewhat face to face.

What courses are you teaching this semester?

What are your students like this semester? Please give examples.

How would you compare their expectations of you now to last semester when we were fully remote due to the COVID-19 pandemic? Please give details.

   Probe: How would you describe their neediness this semester compared to last?

   Probe: How has the COVID-19 pandemic affected your experience of AM?

How has your perception of emotional workload changed over the last two semesters?

Please discuss your experiences of the relationship between course stakes, student neediness and emotional workload.

In what ways has this affected your perceptions of AM?

   Probe: Do you welcome or reject your role as an AM? Please explain your position.
How do you see your role this semester compared to last-more communal or agentic? Please elaborate.

    Probe: How does this influence teacher student interaction?

How do students engage with male faculty?

    Probe: Would you say female faculty have higher experiences of emotional workload?
    Please explain.

In what ways do you address emotional workload due to student teacher interactions?

What have your career goals been, say when you first began teaching? How do they compare to now?

How does your role as an AM affect your career goals?

    Probe: Discuss how AM has positively/negatively affected your career goals.

Do you feel that you have used your role as an AM to your benefit to reach career goals? Please give specific examples or stories.

    Probe: If you haven’t used your role as an AM to your benefit, has being an AM enabled you to achieve a niche in a masculine institution?

How do you see your role as an AM changing during the rest of the semester?

Do you have any more thoughts you would like to add about your role, AM, and student/institutional perceptions, high stakes, or your career path?

**Interview 3: Reflective Focus Group**

(1b) How do female STEM faculty work with and against the system of patriarchy and the patriarchal expectations of who they are?
We have discussed our positions as AM over this last semester. Please reflect on our conversations and your experiences.

Thinking back on your career track, how have you navigated through a patriarchal institution system? Please give examples or stories.

What terms can you use to describe your experience and environment within your department/institution?

    Probe: How have you been able to succeed in a typically masculine environment? Other female colleagues? Agency?

How has your role as an AM enabled you to steer (positively or negatively) within this patriarchal environment?

What recommendations would you give to other women who are starting their STEM careers?

Do you have any final thoughts about gender, career paths, patriarchy, or AM?
Appendix D

Informed Consent

Department of Education
1000 Hempstead Ave
Rockville Centre, NY 11570
516-330-5144

Title of Study:
A Phenomenological Investigation of Academic Momism: Perceptions of Female College Faculty's Role Expectations in High Stakes STEM Courses

This study is being conducted by: Donna M. Cempe-Danziger

Key Information about this study:
This consent form is designed to inform you about the study you are being asked to participate in. Here you will find a brief summary about the study; however, you can find more detailed information later on in the form.

You are being asked to do this interview to examine how female faculty teaching high-stakes STEM courses in higher education settings may experience a role of academic momism and how they negotiate their role and responses within a patriarchal system.

Why am I being asked to take part in this study?
The purpose of this study is to examine female STEM faculty perceptions and experiences of their classroom role. Your stories and experiences will help me examine how female faculty see themselves in a male dominated society—including navigating through stereotyping, the promotion process, and gender bias. I am particularly interested in experiences of academic momism where women are expected to be more nurturing and supportive than male faculty.

What will I be asked to do?
Your maximal time investment in this study will be three hours over the course of a semester. You will be asked to complete two one-hour long individual interviews between September through early November. The interviews will be conducted via Zoom at your convenience. A final optional focus group interview will be conducted in late November. A follow up meeting would occur as needed. You will be asked to describe your classroom experiences, including student encounters and expectations, as well as departmental expectations.

Where is the study going to take place, and how long will it take?
The study will take place via Zoom meetings arranged as per participant convenience. There will be two one-on-one in-depth interviews of 60 minutes each between September and early November. A final optional 60-minute-long focus group will be conducted in late November.

What are the risks and discomforts?
While there might be potential discomforts related to some aspects of the study, e.g. discussing stereotypes, only minimal to no risk is associated with it. The confidentiality of the participants will be established through assigning pseudonyms and storing the information on a password-protected computer with dual identification set-up.

**What are the expected benefits of this research?**

The benefits of completing this study are self-reflective. By discussing experiences, participants will think back on their thoughts, reactions, and feelings and give voice to female faculty. This study will also provide an opportunity for participants to help other female faculty learn how others navigate their role in a male driven society and institutional system. Participation in the focus group will also allow participants to exchange ideas with fellow female faculty.

**Do I have to take part in this study?**

Your participation in this research is your choice. If you decide to participate in the study, you may change your mind and stop participating at any time without penalty or loss of benefits to which you are already entitled.

**What are the alternatives to being in this study?**

Instead of being in this research, you may choose not to participate.

**Who will have access to my information?**

All data and information related to the study will be kept under strict confidentiality. Under that plan for confidentiality, each participant will be assigned a pseudonym. The consent forms and transcripts will be kept within on a password-protected computer and folder. Only the researcher and committee chair will have access to the participants’ identifying information.

**How will my [information/biospecimens] be used?**

The information gathered in this study will be used to analyze data and examine the phenomenon of academic monism among female faculty members. This information will be used for the purpose of a dissertation with potential publication in a scholarly journal.

**Can my participation in the study end early?**

You may choose to end the study at any point. There is no obligation to complete the study. Only data collected from two completed interviews will be used.

**Will I receive any compensation for participating in the study?**

Participants will be entered in a raffle for a $50 Visa gift card.

**What happens if I am injured because of the study?**

If you are injured during the course of this study, you should seek immediate medical treatment from your primary provider or at an emergency care facility. Also, contact Donna Cemper-Danziger at 516-330-5144. Payment for any medical treatment must be provided by you and your third-party payer (such as health insurance or Medicaid). This does not mean that you are
releasing or waiving any legal right you might have against the researcher or Molloy College as a result of your participation in this research.

What if I have questions?
Before you decide whether you’d like to participate in this study, please ask any questions that come to mind now. Later, if you have questions about the study, you can contact Donna Cempa-Danziger at dcempa-danziger1@molloy.edu, or Dr. Joanna Alcruz at jalcruz@molloy.edu.

What are my rights as a research participant?
You have rights as a research participant. All research with human participants is reviewed by a committee called the Institutional Review Board (IRB) which works to protect your rights and welfare.

If you have questions about your rights, an unresolved question, a concern or complaint about this research you may contact the IRB contact the Molloy IRB office at irb@molloy.edu or call 516 323 3000.

Documentation of Informed Consent*:

You are freely making a decision whether to be in this research study. Signing this form means that
1. you have read and understood this consent form
2. you have had your questions answered, and
3. after sufficient time to make your choice, you have decided to be in the study.

You will be given a copy of this consent form to keep.

______________________________  ________________________
Your signature                  Date
Your printed name

Permission to be video and/or audio recorded.

________________________________________________________________________
Your signature                                                  Date

________________________________________________________________________
Your printed name                                                  Date

________________________________________________________________________
Signature of researcher explaining study                           Date

________________________________________________________________________
Printed name of researcher explaining study

Molloy College IRB
Approval Date: August 23, 2021
Expiration Date: August 22, 2024