

RELATIONSHIP FACTORS INFLUENCING DOCTORAL STUDENT RETENTION AND  
SUCCESS: A STUDY OF FACULTY ADVISOR AND DOCTORAL STUDENT  
PERCEPTIONS

by

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B.A., Fort Hays State University, 2007  
M.S., Fort Hays State University, 2008

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Special Education, Counseling and Student Affairs  
College of Education

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

2016

## **Abstract**

Navigation and completion of a doctoral degree presents numerous challenges, including managing and understanding the faculty advisor/advisee relationship. Research shows faculty advisors are a critical aspect of the doctoral student experience; however faculty advisors and doctoral students do not always have the same perceptions of the advisor/advisee relationship. This study focused on measuring perceptions of faculty advisors and doctoral students in STEM and social science disciplines on various aspects of the advisor/advisee relationship. Likert-style survey items were used to measure perceptions of six constructs, advisor attributes and characteristics, roles and functions, relationship behaviors, and the faculty advisor role in student academic success, professional socialization, and engagement. Surveys were completed by 137 faculty advisors and 131 doctoral students. Analysis of data was conducted using various methods, including comparison of descriptive statistics, independent samples t-tests, and a factorial analysis of variance. Results of the data analysis revealed some significant differences between the perceptions of faculty advisors and doctoral students on several constructs. The discussion of results focuses on connections to current literature, as well as implications for future research and practice.

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Approved by:

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## **Chapter 1 - Introduction**

The relationship doctoral students develop with their faculty advisors is said to be one of the most important relationships in graduate education (Barnes & Austin, 2009; Barnes, Williams, & Archer, 2010). Research has demonstrated that faculty advisors are a critical part of numerous aspects of the doctoral degree process and experience (Barnes et al., 2010). Completion of a doctoral degree requires overcoming a number of challenges, including satisfying conflicting demands of numerous people, producing quality work, dealing with work life balance issues (Anderson & Swazey, 1998), and navigating the faculty advisor/advisee relationship (Barnes & Austin, 2009). These challenges have led to many problems for doctoral students including high attrition rates, extended time to degree completion, and inadequate training for teaching and research (Gardner & Barnes, 2007).

One of the most commonly cited issues in American doctoral education today is low completion rates. Approximately 40-60% of students who enroll in American doctoral programs do not complete their degrees, with completion rates varying across disciplines (Council of Graduate Schools, 2008; Lovitts, 2005). For students who do not complete their degree programs, one-third drop out during their first year, another third before candidacy, and the final third post-candidacy, although this varies across disciplines (Golde, 1998). Because the faculty advisor/advisee relationship has been identified as such a critical part of the doctoral student experience, it has become important to try and better understand this relationship and the role of a doctoral advisor.

One issue, which has emerged in the literature, is conflicting perspectives of faculty and students on the roles and characteristics of the faculty advisor and the advisor/advisee relationship (Barnes & Austin, 2009; Barnes et al., 2010; Harding-DeKam, Hamilton, & Loyd,

2012; Schlosser, Knox, Moskowitz, & Hill, 2003). Advising a doctoral student involves a number of roles and responsibilities (Harding-DeKam et al., 2012). Although researchers have attempted to define the role of a doctoral advisor based on job responsibilities, there has not been a clearly accepted definition within higher education. The characteristics of what is considered to develop a good advisor/advisee relationship also varies across disciplines (Barnes & Austin, 2009; Ferrer de Valero, 2001), and can change at certain points in a students' program (Golde, 1998; Jacks, Chubin, Porter, & Connolly, 1983; Spillett & Moisiewicz, 2004; Tinto, 1993).

Advisors in some disciplines value collegiality and accessibility, while advisors from other disciplines focus more on developing a supportive/caring relationship (Barnes & Austin, 2009). Students have identified characteristics and roles of an advisor that can facilitate a positive relationship and graduate experience such as advisors being helpful, accessible (Barnes & Austin, 2009; Barnes et al., 2010), caring (Barnes & Austin, 2009), and helping them be successful and develop as researchers (Barnes & Austin, 2009; Schlosser et al., 2003). However, not all of these descriptions have been identified in research that presents the advisor viewpoint on the advisor/advisee relationship.

These issues can be examined through the use of various theoretical frameworks and models, including Girves and Wemmerus' (1988) model of graduate student degree progress, socialization and involvement (Astin, 1984; Gardner, 2010b; Girves & Wemmerus, 1988; Weidman, Twale, & Stein, 2001), and Tinto's theory of graduate student persistence (Gardner & Barnes, 2007; Tinto, 1993). These frameworks and models aid in guiding the researcher in illuminating how and why graduate students experience their graduate program and their relationship with their advisors as they do. These frameworks and models highlight some of the important issues, which are examined in this study.

### **Statement of the Problem**

Research has identified clear problems within doctoral education, including one major issue, doctoral student attrition (Council of Graduate Schools, 2008; Golde, 1998; Lovitts, 2005). This key issue has created a need to examine the impact of the faculty advisor/advisee relationship on doctoral students at various stages in the doctoral program within and across disciplines. The literature states that the advisor/advisee relationship plays a critical role in the doctoral experience, including in retention, success, professional socialization, and engagement (Barnes & Austin, 2009; Barnes et al., 2010; Gardner, 2005; Gardner & Barnes, 2007).

### **Purpose of the Research**

The purpose of the study was to explore various aspects of the faculty advisor/advisee relationship related to factors identified in previous qualitative research and suggested by Girves and Wemmerus' (1988) Model of Graduate Student Degree Progress, Organizational Socialization Theory (Van Maanen & Schein, 1979), Socialization as a Framework (Gardner, 2008; Gold, 1998; Weidman et al., 2001), and Involvement (Astin, 1984). These aspects of the faculty advisor/advisee relationship include identifying how faculty and student perceptions differ regarding what the roles and characteristics of an advisor are, and what needs to exist in order for the advisor/advisee relationship to be positive and beneficial. This study sought to develop an understanding of student and advisor perceptions of key aspects of the advisor/student relationship.

The researcher examined faculty and doctoral students in two separate disciplines, STEM and social science. Students were distinguished by status in their program; first year, second year to candidacy, and post-candidacy (Golde, 1998). Examining perceptions of faculty advisors and doctoral students can assist in clarifying the role of an advisor and in strengthening

advisor/advisee relationships. Developing a better understanding of advisor and advisee perceptions could potentially lead to enhanced experiences for doctoral students and improve doctoral student retention and degree completion.

### **Significance of the Research**

The current research contributes to the existing body of literature on the topic in several ways. One important contribution stems from the methodological approach used. The majority of current research has used a qualitative approach to examine the faculty advisor/advisee relationship (Barnes & Austin, 2009; Barnes et al., 2010; Gardner, 2008; Gardner, 2010; Gardner, 2010b; Gardner & Barnes, 2007, Harding-DeKam et al., 2012; Schlosser et al., 2003). This study used current research as a basis for developing constructs and identifying aspects of the advisor/advisee relationship to be examined, but broadens the explanation of the relationship using larger samples and a quantitative approach, which has not been a common methodology for research in this area. The current study placed emphasis on examining students in two disciplines at three developmental stages throughout their respective graduate programs: first year, second year to candidacy, and post-candidacy. This quantitative approach brings a new perspective to the current body of literature and provides further insight into specific roles and challenges in the advisor/advisee relationship at defined points throughout students program of study. This study is unique in that it examined the faculty advisor/advisee relationship from both advisor and student perspectives, allowing for insight into how these perspectives may or may not conflict.

### **Research Questions**

There were two main research questions for this study. These questions allowed for exploration of differences in perceptions of the advisor/advisee relationship between faculty

advisors and doctoral students. The questions identified important aspects of the advisor/advisee relationship, and how perceptions vary between students and faculty, and from discipline to discipline. The sub-questions defined each variable which was examined.

**RQ1:** How do faculty perspectives of characteristics of the faculty advisor/doctoral student relationship differ from student perspectives within and across disciplines?

RQ1.a: What are student perceptions about the three relationship constructs that characterize the advisor/student relationship (attributes, roles and behaviors)?

RQ1.b: What are advisor perceptions about the three relationship constructs that characterize the advisor/student relationship (attributes, roles and behaviors)?

RQ1.c: What are student perceptions about the three success factors related to the advisor/student relationship (academic success, professional socialization and engagement)?

RQ1.d: What are advisor perceptions about the three success factors related to the advisor/student relationship (academic success, professional socialization and engagement)?

RQ1.e: What are the differences between advisor versus student perceptions on the relationship constructs and success factors?

RQ1.f: What are the differences between perceptions of STEM advisor versus social science advisors on relationship constructs and success factors?

RQ1.g: What are the differences between the perceptions of STEM students versus social science students on relationship constructs and success factors?

**RQ2:** How does the faculty advisor/doctoral student relationship differ for faculty and students in the first year, second year to candidacy, and post-candidacy within and across disciplines?

RQ2.a: What are student perceptions of the advisor/advisee relationship during the first year?

RQ2.b: What are student perceptions of the advisor/advisee relationship in the second year to candidacy?

RQ2.c: What are student perceptions of the advisor/advisee relationship post-candidacy?

RQ2.d: What are the differences between the perceptions of first year students and faculty?

RQ2.e: What are the differences between the perceptions of students in the second year to candidacy and faculty?

RQ2.f: What are the differences between the perceptions of students post-candidacy and faculty?

RQ2.g: What are the differences between the perceptions of STEM students versus social science students in each of the three phases?

### **Methodology**

This study used survey research methodology to measure perceptions of faculty advisors and doctoral students in selected fields at a large research one university in the Midwest. The survey was developed and tested using Dillman's Total Design Method (Dillman et al., 2009). Items for the survey were developed based on themes had been identified through existing qualitative research (Crede & Boreggo, 2012).

This study involved faculty doctoral advisors and doctoral students in two discipline areas: science, technology, engineering, math (STEM), and social sciences. The research participants were: all faculty advisors, who have been approved by the graduate school to serve as major professors, and all full-time, residential doctoral students in departments categorized as

STEM (Chemistry, Physics, Agronomy, Mathematics, Biology, Animal Sciences, Computer Science, Mechanical and Nuclear Engineering, Electrical and Computer Engineering, Grain Science, Entomology, Civil Engineering, Chemical Engineering, Biochemistry) and as social science (Economics, Psychological Sciences, Statistics, History, Sociology, Geography). These categories were selected based on National Science Foundation classifications.

Survey items measured perceptions of two sets of constructs: relationship factors within the faculty advisor/advisee relationship and success factors for doctoral students. Data collected from the survey was analyzed using the data analysis software package, SPSS version 22.0. Research questions were answered through the use of descriptive statistics, including mean and standard deviation, t-tests, and one way analysis of variance.

### **Definitions**

For the purposes of this study the following terms and definitions are used.

**Faculty Advisor.** Faculty who are certified to serve as a major professor for doctoral students.

**Doctoral Student.** A student who has been admitted to, and started his/her Ph.D. program.

**Doctoral Candidate.** A student enrolled in a doctoral program who has successfully completed preliminary exam or comprehensive exam is known as a candidate (Walker, Golde, Jones, Bueschel, & Hutchings, 2008).

**Retention.** Retention is the institution's ability to continuously enroll students that started a degree at a specific point of time (Bean, 2003).

**Academic Success.** The ability of a student to complete his/her degree requirements in a timely manner (Ferrer de Valero, 2001). Academic success has also been measured by grades earned during coursework and by GPA.

**Professional Socialization.** A process through which an individual learns to adopt the values, skills, attitudes, norms, and knowledge needed for membership in a given society, group, or organization (Gardner & Barnes, 2007; Merton, 1957; Tierney, 1997; Van Maanen & Schein, 1979).

**Engagement.** Participation in departmental and/or campus activities outside of the requirements of the degree program.

## **Chapter 2 - Theoretical Framework and Review of Literature**

Approximately 40-60% of students who enroll in American doctoral programs do not complete their degrees, with completion rates varying across disciplines (Council of Graduate Schools, 2008; Lovitts, 2005). Doctoral students face a variety of challenges that have contributed to high attrition rates, extended time to degree completion, and inadequate training for teaching and research (Gardner & Barnes, 2007). Golde (1998) cited Bowen and Rudenstine (1992) and Golde (1996) who found that nearly a third of all doctoral students drop out during their first year of graduate school. Golde (1998) also found that for those students who do not complete, another third drop out before candidacy and a final third post-candidacy, although this varies by department and discipline.

The faculty advisor/advisee relationship plays a critical role in doctoral student completion and success (Barnes & Austin, 2009). However, defining the role of a doctoral advisor, describing the advisor/advisee relationship, and determining the relationship of the advisor role to student success has been challenging. Advising is difficult to define because of the numerous roles and responsibilities of an advisor, especially in doctoral advising. Although many researchers have attempted to define the role of a doctoral advisor based on job responsibilities, there has not been a clearly accepted definition within higher education (Harding-DeKam, Hamilton, & Loyd, 2012). Within doctoral education literature the terms “mentor” and “advisor” are regularly used interchangeably when discussing the faculty advisor and doctoral student relationship (Barnes & Austin, 2009).

Much of the research on retention and success has focused on undergraduate students and has led to the development of theories and models of undergraduate student retention and success (Girves & Wemmerus, 1988). Although the undergraduate and graduate student experiences

differ, some of these theories and models have served as a basis for the development of models, which focus on graduate student issues. Leading frameworks and models include Girves and Wemmerus' (1988) model of graduate student degree progress, socialization and involvement (Astin, 1984; Gardner, 2010b; Girves & Wemmerus, 1988); Weidman, J. C., Twale, D. J., & Stein, E. L., (2001), and Tinto's theory of graduate student persistence (Gardner & Barnes, 2007; Tinto, 1993).

The purpose of this chapter is to examine literature related to the role of the faculty advisor/advisee relationship on retention of doctoral students. Theoretical frameworks discussed in existing literature will serve as a foundation for this study. The existing literature on the role of the advisor/advisee relationship in the retention of doctoral students, faculty and student perceptions of the advisor/advisee relationship, and literature related to measures of student success was reviewed. This overview highlighted the relevance of these issues in current research, and revealed gaps in the literature, which were addressed through this research project.

### **Theoretical Framework**

#### **Girves and Wemmerus Model of Graduate Student Degree Progress**

Girves and Wemmerus (1988) developed a conceptual model of graduate student degree progress that extended the work of Tinto (1975) on student dropout behaviors, and Bean's research (1980; 1982) on student retention. The Girves and Wemmerus model focused on those factors the authors deemed "fundamental" to the graduate education experience. Girves and Wemmerus (1988) identified student relationships with faculty as a critical part of a student's professional development and degree progress.

Their conceptual model is comprised of two stages. The first stage included (1) academic unit and student characteristics, (2) student financial support and (3) student perceptions of the

faculty/student relationship. The second stage included such variable as: (1) grades, (2) engagement in the student's program, (3) satisfaction with the department, and (4) alienation. These factors are affected by the first stage variables (Girves & Wemmerus, 1988). Degree progress is used in this study in place of the ideas of "retention" and "success". The authors defined degree progress at the doctoral level in three steps; completing courses beyond the master's program, completion of general exams and being admitted to candidacy, and earning the doctoral degree (Girves & Wemmerus, 1988).

Their findings confirmed scholarly activities such as completing qualifying exams, and having the ability to conduct research independently, may be more important in assessing academic success than grades in coursework. Involvement in a student's program, the relationship with one's advisor, the type of financial support received, and department characteristics all influenced degree progress (Girves & Wemmerus, 1988). The model of graduate student degree progress for doctoral students can be used as a lens for examining the factors contributing to the retention and success of doctoral students, and specifically the role of the advisor/advisee relationship at different stages of the program and across disciplines.

### **Socialization**

Socialization is a prevailing framework for examining issues related to graduate education, specifically for doctoral students (Gardner, 2010b). The following information provides an analysis of how socialization has become the prevailing framework through which issues related to the advisor/advisee relationship are explored. This analysis includes an overview of the framework's origins in organizational socialization theory, how it has been used as a framework for examining the doctoral student experience, and a specific look at graduate student socialization.

## **Organizational Socialization Theory**

Organizational socialization theory was developed by Van Maanen and Schein (1979) for use in business and corporate settings. Organizational socialization is the process through which individuals become a member of a society, group, or organization through learning and adopting the values, skills, attitudes, norms, and knowledge of the organization (Van Maanen & Schein, 1979). Research on this theory has examined the theoretical understanding of organizational socialization. Trowler and Knight (1999) studied Van Maanen and Schein's (1979) theory and its application to higher education. They defined organizational socialization as, "the accommodative process, which takes place when new entrants to an organization engage with aspects of the cultural configurations they find there" (Trowler & Knight, 1999, p. 178). The authors discussed engagement in an organization as a process, which was outlined in the original organizational socialization theory.

Five components of socialization in an organization are implied in organizational socialization theory, and variables are identified within each of those components. The five components include targets, agents, process, content, and role responses. The targets of the socialization process are all people, specifically employees, who are transitioning into or within an organization (Tuttle, 2002). These transitions require certain adjustments for the individual as they experience a new organization and start to understand their role. The agents include existing employees in the organization. These people are part of the socialization process because they will be interacting with new people entering the organization (Tuttle, 2002; Van Maanen & Schein, 1979). When a new employee enters an organization he/she is offered training and opportunities for social interaction with existing employees.

Agents may or may not be conscious of their role in the socialization process for new employees, and agents may be their own author of socialization within the organization. Agents are an important part of the socialization process because newcomers to the organization may look to them in trying to understand the culture and norms of the organization. Newcomers to the organization may also use agents as a direct resource for gaining knowledge about the expectations of their new role within the organization (Tuttle, 2002). In graduate school agents could include various people such as other graduate students, faculty, staff or administrators.

The third component of organizational socialization theory is process. The process component includes formal and informal actions by targets or agents to facilitate socialization within the organization (Tuttle, 2002). People within an organization experience change along three aspects of their role. These aspects include functional socialization, hierarchical socialization, and inclusion socialization. The functional, hierarchical, and inclusion aspects of socialization encompass the rules and requirements of the job, status within the organization, and interactions and socializing within the organization. These types of socialization are all aspects of the process of becoming part of, and functioning within the organization. People within an organization have to find a way to understand the purpose of their position, where their position falls within the hierarchical structure of the organization, and they have to determine how they “fit-in” with their co-worker, supervisors, and supervisees (Tuttle, 2002; Van Maanen & Schein, 1979).

The fourth component is content. Organizational socialization theory posited that the knowledge people gain about their work roles in an organization is often directly influenced by how they learn it (Tuttle, 2002; Van Maanen & Schein, 1979). The content component focuses on which strategies the organization uses to socialize their employees. These strategies vary and

can be collective or individual, formal or informal, sequential or random, fixed or varying, or serial or disjunctive. The structure and culture of the organization impacts how targets and agents gain content knowledge required to function within the organization (Tuttle, 2002).

The final component of this theory is role response. Role response focuses on the outcome of the socialization process. As people experience the organization in different ways, they react to their experiences and feel a certain level of socialization within the organization. This reaction can cause various individual responses to the socialization process. These responses can include either compliance, meaning they will not question how the organization works and what their role is, or innovative, meaning they will move to make changes to the organization and to their role within the organization (Tuttle, 2002).

Van Maanen and Schein's (1979) organizational socialization theory creates a strong basis for examining students' experiences in higher education. This theory outlines the process of entering a new organization and illustrates how interactions with the organization, and people within the organization, influence perceptions of the organization and an individuals' role in the organization. Understanding the socialization process is a vital part of understanding how organizations function, and also for understanding why people may leave an organization or struggle to be successful in their position. Research conducted by Trowler and Knight (1999) and Tuttle (2002) has helped to expand this traditionally organizational, human resources based theory to other fields such as education.

### **Socialization as a Framework**

The concepts presented in organizational socialization theory are useful in explaining experiences within higher education, specifically of the graduate education experience. Using organizational socialization theory as a lens, accompanied by theories of graduate student

socialization, has created a framework, which is useful in examining doctoral students and their experiences (Gardner & Barnes, 2007). Socialization in graduate school occurs through various experiences both inside and outside of the classroom (Gardner, 2010b; Weidman, Twale, & Stein, 2001), and has been found to be one of the determining factors in doctoral student success and retention (Turner & Thompson, 1993).

Past research has noted the importance of socialization for doctoral students, which has led researchers to use socialization as a framework to examine various aspects of the doctoral education process and experience. Conducting research using this framework allows practitioners to best understand the needs of graduate students, which leads to lower attrition rates, reduced times to degree completion, and an increased positive overall experience.

Gardner (2008) conducted a qualitative study, using socialization as a framework, which sought to understand the socialization process for doctoral students in two different programs. The goal of Gardner's study was to determine how socialization impacted student success and retention, as well as to determine how the socialization process differs across disciplines, and focused on how experiences may be different for women, students of color, students with families, part-time students, and older students. Socialization was chosen as the framework for the study because it affects every part of the student experience in graduate school from the time they enter their program through completion of their dissertation defense and graduation.

Gardner (2008) cited Baird (1993) who provided a conceptualization of how graduate students experience socialization. It was suggested that socialization in graduate education occurs in stages or developmental phases over the course of the students' education (Gardner, 2008). Gardner (2008) cited Weidman et al. (2001) who identified four developmental phases of socialization; anticipatory, formal, informal, and personal. The anticipatory phase occurs when

students first enter a program and are learning about their roles, the rules and expectations of the program, and seeking information. This stage is thought to be a time where students are discovering what behaviors, attitudes, and cognitive expectations are expected for someone in their position.

The second phase, formal, is focused on students learning from their peers who have been in the position already. Students are concerned with tasks they are expected to complete and are depending on course material for information. The third phase, informal, creates a shift where students begin to seek information more informally from their peers. Students seek behavioral clues, and depend on their cohort of colleagues for information. The fourth and final phase, personal, is a time where students merge their individual self with the new role they have now taken on. During this final stage students transform themselves from their identity prior to entering school, and begin to look for their new identity based on their new experiences (Gardner, 2008).

This framework was then used to examine how students in two different disciplines, chemistry and history, experienced their graduate programs (Gardner, 2008). One of the key findings was that many women, students of color, older students, students with children, and part-time students did not feel they “fit the mold” of a traditional graduate education and had negative experiences. Students’ indicated the socialization process in their departments did not take into consideration the diversity of their students. Many of the issues, as stated before, led students to feel like they did not “fit the mold” of their department, program, or university (Gardner, 2008).

A related finding is that the socialization process is different for every student. Each student entering a program comes from a different background and will have his or her own set of

challenges to face as he or she attempts to integrate themselves into their new environment. Support services and information need to be readily available to students entering a new program, as well as to faculty, staff, and other students who will be working with them (Gardner, 2008). This study shows how using the framework of socialization is helpful in determining what students need to be successful.

The discussion and explanation of socialization presented by Gardner (2008) supports descriptions of the socialization process as outlined by Golde (1998). Golde (1998) identified four tasks of transition which graduate students experience their first year. These tasks which include, intellectual mastery, learning about the realities of graduate school, learning about the profession they are preparing for, and integrating themselves into their department, are all vital parts of the socialization process. The tasks outline the process student's experience, moving from the first task of gaining competence and questioning their ability to do the work which is required of them, to understanding the realities of graduate student life.

The second task focused on students asking themselves if they really wanted to be a graduate student. When entering graduate school certain realities about the time and financial commitments become apparent, as well as realizations of the amount of work which will be required. Upon making the realizations about the requirements of graduate school, students will question whether or not it is the life they want for themselves at that point in time (Golde, 1998).

The next transition is into the third task; making sure the profession they are working towards is the profession they want to pursue. Students enter a graduate program to develop knowledge of their field, assumingly because they hope to enter a profession related to the field. Once students begin to develop more knowledge of the field, and what potential professional opportunities will stem from their graduate education, they have to ensure they have chosen the

right professional track for themselves. The fourth task focuses on integrating themselves into the department and making sure it is a good fit for them. Graduate students will spend years working with people within their department, both faculty and their peers, therefore it is important to make sure they feel comfortable in their surroundings (Golde, 1998).

These views of the socialization process provide a good lens for understanding how students begin to adjust to their new environment and start to become part of their environment, and how socialization can be used as a framework for examining the graduate student experience. Socialization provides an outline of the various issues and situations new and returning graduate students will have to deal with throughout their graduate studies. Understanding how graduate students experience their education is an important part of creating a culture which is welcoming and makes the students feel supported (Golde, 1998). This discussion of graduate student socialization, including the importance of involvement, provides a clear picture of how this framework is useful in exploring the needs and issues of doctoral students.

### **Involvement**

Another theory which has relevance for doctoral students, although it was not specifically created with them in mind, but instead with a focus on undergraduate students, is Alexander Astin's theory of involvement. This theory demonstrates the importance of student involvement as part of student development and the academic experience (Astin, 1984). Involvement explains behaviors of the student and his or her engagement with their campus environment. The five postulates of this theory center on the physical and psychological energy students put into their experiences, the amount of energy students put towards certain activities over others, the amount of time and seriousness of their involvement, the amount of learning and personal development associated with their involvement in activities outside of their educational program,

and the effectiveness of educational policies which increase student involvement (Astin, 1984; Evans, Forney, Guido, Patton, & Renn, 2010). Astin's (1984) theory of involvement has been used to examine graduate students and their experiences throughout their educational programs.

Because involvement has been linked to academic success and higher retention rates for undergraduate students, researchers have found it feasible this theory could work in practice for graduate students as well (Gardner & Barnes, 2007). Involvement in graduate student organizations and professional associations is a beneficial aspect of the graduate student experience and graduate student socialization (Gardner, 2005). For these reasons, involvement can be used as a lens for examining how doctoral students engage within their campus community.

### **Graduate Student Persistence Theory**

One of the only theories that explores graduate student persistence and retention is Vincent Tinto's (1993) Graduate Student Persistence Theory. Tinto's theory, which links the importance of involvement with socialization, focuses on the importance of involvement and the results which can come from successful socialization. Tinto's theory includes three stages; transition, candidacy, and doctoral completion.

The first stage, transition, is seen as typically encompassing the first year of study in a doctoral program. During this stage a doctoral student is establishing his or her membership within the university, both in one's academic community and in one's social community. In discussing Tinto's theory, Gardner and Barnes (2007) stated, "This stage is shaped by social and academic interactions, especially those interactions within the graduate department" (p. 4). Some of the identifying markers of this stage include students making a commitment to their

academic goals, and beginning to make academic and social connections (Gardner & Barnes, 2007; Tinto, 1993).

The second stage, candidacy, is the time when students are acquiring the knowledge and skills they need in order to complete their doctoral research. Faculty members play a vital role in this stage as they are highly involved with students and teaching them the material and skills they need. Success in this stage is greatly dependent upon a student's abilities and skills. Support from their academic and social community is important as they face new challenges in their graduate program (Gardner & Barnes, 2007; Tinto, 1993).

The final stage, doctoral completion, is the time from when a student gains candidacy through the successful defense of their dissertation. During this stage a student's relationship with faculty changes as they shift from depending on a larger group of faculty, to building a stronger one-on-one relationship with their advisor and committee members. Tinto also discussed support from family and people within the student's work environment are critical at this point and may lead to the success or failure of the student to complete their degree (Gardner & Barnes, 2007; Tinto, 1993).

Through the explanation of these stages clear connection is developed between involvement and the socialization process which leads to persistence in a program. Socialization within a graduate program is greatly dependent on the culture and context of the program. Not every student is going to have the same experiences in his or her graduate program, and with their faculty advisor, especially across disciplines. An important component of this theory is the social aspect (Tinto, 1993). "Social integration within one's program becomes part and parcel of academic membership, and social interaction with one's peers and faculty becomes closely linked not only to one's intellectual development, but also to the development of important skills

required for doctoral completion” (Tinto, 1993, p. 232). The local community is an important part of the educational community a student engages in during their graduate career, (Gardner & Barnes, 2007; Tinto, 1993) specifically for on-campus students.

This theory underscores the importance of not only student involvement but supports the framework of socialization. The socialization process for graduate students is clearly an integral part of their success throughout their graduate studies. Because of this, not only faculty, but student affairs practitioners need to understand socialization and its applicability and importance to graduate education.

These theories and frameworks have been utilized in identifying important aspects of the doctoral student experience. Specifically the importance of the faculty advisor/doctoral student relationship has emerged. These are used as a lens for examining specific aspects of this relationship and how those influence retention of doctoral students.

## **Review of Literature**

### **The Advisor and Doctoral Student Retention**

Retention remains one of the key challenges in higher education. In fact, the magnitude of the problem has made retention one of the most commonly studied issues in higher education research (Braxton, Hirschy, & McClendon, 2004; Tinto, 2006). In the early years of student retention discussions, which focused mainly on undergraduate students, it was thought student persistence issues were due to lack of qualifications or ambition on the part of the student. Tinto (2006) stated in regards to students being blamed for their own failure, “This view of retention began to change in the 1970’s. As part of a broader change in how we understood the relationship between individuals and society, our view of student retention shifted to take account of the role of the environment, in particular the institution, in student decisions to stay or

leave” (p. 2). Research and practice of student retention strategies has experienced a number of changes and now encompasses a wider array of factors; cultural, economic, social, and institutional.

Much of the literature regarding retention has focused solely on undergraduate students. However, retention has become a more prominent issue in doctoral education. Researchers focusing their attention on doctoral students have used this as a basis for their research while also identifying key differences in the undergraduate/graduate student experience. Historically doctoral students have faced a variety of challenges which have led to high attrition rates, extended time to degree completion, and inadequate training for teaching and research (Gardner & Barnes, 2007). “Attrition during the first year of graduate school accounts for nearly a third of all doctoral student attrition (Bowen & Rudenstine, 1992; Golde, 1996). Another third drop out before candidacy and a final third post-candidacy, although this varies considerably by department and discipline” (Golde, 1998, p. 55). The faculty advisor/advisee relationship plays a critical role in doctoral student completion and success (Barnes & Austin, 2009; Council of Graduate Schools, 2010; Golde, 2005; Jacks, Chubin, Porter, & Connelly, 1983; Maher, Ford, & Thompson, 2004; Smith, 1995).). These disconcerting statistics have led researchers to turn their attention to retention issues in doctoral education.

Low completion rates caught the attention of the Council of Graduate Schools (2010) who, in 2004, launched the Ph.D. Completion Project. The project was intended to, “examine and document attrition and completing patterns at a variety of universities” (p. 1), and to help develop best practices which would increase doctoral student retention and completion. The findings from the study were published in four reports. The first two publications reported on

completion rates for all institutions, and also reported numbers broken down by student demographics.

“For Phase I of the Ph.D. Completion Project, program-level completion and attrition data were submitted by 30 institutions in 2004 and 2005. Covering twelve academic years starting in 1992-93 and ending in 2003-04, the data represent 330 programs and 49,113 students in 62 disciplines” (Council of Graduate Schools, 2008, p. 9). It is noted that tracking Ph.D. retention and completion data can be difficult due to a number of students completing their degrees at different times; students may stop out, but ultimately complete their degree at some point. However, the comprehensive approach taken by the Council of Graduate Schools provides good insight into attrition and completion patterns at a wide range of institutions and in various disciplines. The disciplines included students from five fields; Engineering, Life Sciences, Mathematics and Physical Sciences, Social Sciences, and Humanities.

The findings from the baseline attrition and completion data found large variations between their demographic variables which included gender, citizenship status, and race/ethnicity. Findings were also broken down by discipline. The first point of variation was identified for men and women across five disciplines. Men in Engineering, Life Sciences, and Mathematics and Physical Sciences had higher completion rates than women. Women in Humanities and Social Sciences were found to have higher completion rates than their male counterparts however. Completion rates for men also varied between fields with lower completion rates in Humanities than in Engineering (Council of Graduate Schools, 2008).

It was also found international students had significantly higher completion rates than domestic students across all five disciplines. In the analysis of race and ethnicity White domestic students had slightly higher completion rates than Hispanic Americans, Asian Americans, and

African Americans. When looking at the ten year completion rates of domestic students Hispanic Americans were found to have the highest late completion rate (Council of Graduate Schools, 2008).

Possible reasons cited for these differences included, “variations in the availability, amount and duration of financial support, the quality of academic advising and mentoring, dissertation and degree requirements, and future job prospects” (Council of Graduate Schools, 2008, p. 18). Important to note is the quality of academic advising and mentoring which has continually been found to have an impact on retention and whether or not students will complete their degrees or withdraw from their program (Barnes et al., 2010; Girves & Wemmerus, 1988; Golde, 1998; Lovitts, 2001).

Finding the right “fit” between a faculty advisor and an advisee can greatly impact retention. Golde (1998) identified during the first year of graduate school science students cited “advisor mismatch” as a common theme of attrition. This mismatch included personality clashes, difficult relationships, inability to communicate, and different work styles. However, this was less of an issue during the first year for students in the humanities. The nature of the advisor/advisee relationship is a critical aspect of time-to-degree completion and doctoral student retention (Maher et al., 2004; Wao, Dedrick, & Ferron, 2011). These findings place further emphasis on the need to discover differences between the advisor/advisee relationship in various disciplines and its impact on doctoral student retention at different phases in the degree program.

Jacks et al., (1983) also found a link between retention and degree completion. They found 44% of post-candidacy students in their study cited poor working relationships with their advisor and/or committee members as a primary reason for leaving their doctoral program. Negative interactions with an advisor or dissertation chair based on personality characteristics

have also been found to impact retention and degree completion. O'Bara (1993) found students who rated their advisors as, "more approachable, helpful, and understanding" (Barnes et al., 2010) were more likely to complete their degrees.

Because of the serious impact the advisor/advisee relationship has on retention and degree completion, it is important to understand what contributes to positive or satisfactory advisor/advisee relationships (Barnes et al., 2010). Student who have cited positive relationships with their advisors have described their advisors as advocates, roadblock removers, emotionally and intellectually supportive (Maher et al., 2004), friendly, collegial, and respectful (Schlosser, Knox, Moskovitz, & Hill, 2003). A deeper understanding of how much the advisor/advisee relationship impacts retention and what aspects of the relationship are important across various disciplines needs to be further explored.

### **Faculty Advisor/Doctoral Student Relationship**

**Characteristics.** Academic advisors play a critical role within higher education (Barnes et al., 2010; Gehring, 1987). In fact, the doctoral advisor/advisee relationship may be the single most important relationship a doctoral student develops during their degree program (Baird, 1995; Barnes & Austin, 2009). However, defining the role of an advisor, especially at the doctoral level, has been difficult to accomplish. Academic advising occurs at both the undergraduate and graduate level, and is conducted by both professional academic advisors and faculty. Mentoring also occurs at the undergraduate and graduate level, and takes place both formally and informally (Campbell & Campbell, 1997; Hansman, 2009). One common issue is a lack of distinction between the terms "advisor" and "mentor" when referring to faculty working with doctoral students (Barnes & Austin, 2009) along with a lack of understanding of defined roles and responsibilities for each party and what makes an advisor effective. Recent studies

have questioned doctoral students' relationships with faculty in regards to mentoring and advising (Barnes et al., 2010; Golde & Dore, 2001; Lovitts, 2001; Nettles & Millett, 2006).

Campbell and Campbell (1997) defined mentoring as, "a situation in which a more-experienced member of an organization maintains a relationship with a less-experienced, often new member to the organization and provides information, support, and guidance so as to enhance the less-experienced member's chance of success in the organization and beyond" (p. 727). Advising is difficult to define because of the numerous roles and responsibilities of an advisor, especially in doctoral advising. Although many researchers have attempted to define the role of a doctoral advisor based on job responsibilities, there has not been a clearly accepted definition within higher education (Harding-DeKam et al., 2012). Some defining characteristics and responsibilities of a doctoral advisor, as outlined in the literature, include providing support for graduate students throughout the various stages of their doctoral program (Baird, 1995; Vilkinas, 2008), counseling, coaching, helping to build research skills (Spillett & Moisiejewicz, 2004), and mentoring, advocating for, and collaborating with them as researchers (Barnes & Austin, 2009).

Within doctoral education literature the terms "mentor" and "advisor" are regularly used interchangeably when discussing the faculty advisor and doctoral student relationship. A person whose role is defined as an advisor may act in an official capacity and complete tasks such as discussing coursework, completing programs of study, etc. A mentor on the other hand is a person who is viewed as having a deeper relationship with the advisee and providing guidance and a as part of the relationship (Barnes & Austin, 2009; Nettles & Millett, 2006). The formal roles of an advisor may vary by discipline or by institution. Some universities may outline research supervision as a formal role of an advisor, however mentoring, although encouraged,

may not be as clearly defined as part of a faculty contract or as part of the tenure and promotion process (Council of Graduate Schools, 2010).

Research has been conducted which examines how advisors see their roles and relationships, versus how students see the role of their advisor, and the relationship between their advisor and themselves. Often doctoral students find the guidelines and expectations of their relationship with their advisor advisor-advisee relationship to be unclear (Foss & Foss, 2008). One relevant study examined the role of doctoral advisors from the advisor's perspective and included faculty advisors from four disciplines; natural sciences, social sciences, humanities, and education. Through the authors qualitative approach they discovered three themes of perceived advisor responsibilities; helping advisees be successful, develop as researchers, and develop as professionals. They outlined advisors' functions which included collaborating, mentoring, advocating, and chastising. Lastly, they identified characteristics/behaviors of the advisor/advisee relationship which included friendly/professional, collegial, supportive/caring, accessible, and honest (Barnes & Austin, 2009).

One important aspect of the findings however is these are generalized themes and conclusions; advisors in the various disciplines did not always see each of these as part of their role. For example, Barnes and Austin (2009) noted, "advisors from [only] three of the four disciplines identified helping advisees with professional development as one of their important responsibilities" (p. 307) which demonstrates advisors in various disciplines may see their responsibilities differently. Differences in how supervisors and students view the roles of an advisor, and the relationship with their advisees is was the focus for Doloriert and Sambrook (2011) who found supervisors, or faculty advisors, in their study characterized their relationship with their students as friendly, yet purely professional whereas students viewed the relationship

as a more friendly closer relationship. There was also variation from students and advisors in the natural sciences and social sciences. These studies highlight the complexities of the role of an advisor. However, the viewpoint of an advisor may vary from the viewpoint of the advisee in regards to the roles and responsibilities of the position, and the nature of the relationship.

In another study students described their relationship with their advisor using terms such as, “excellent, nurturing, mentoring, caring, loving, and exceptional” (Ferrer de Valero, 2001, p. 356). These descriptions came from students who were in departments with high completion rates and short times to degree completion however. Students in departments with low completion rates noted there were issues stemming from their relationship with their advisor and used less positive descriptions (Ferrer de Valero, 2001). The Council of Graduate Schools (2010) highlighted that what students expect from a research advisor may be different than what they expect from a mentor; implying these may be two different individuals. The Ph.D. Completion Project by the Council of Graduate Schools (2010) discussed some of the “promising practices” of participating institutions. These practices highlighted the importance of mentoring as part of the advisor/advisee relationship, but there was a lack of clarification on whether or not this was part of the clearly defined role of an advisor.

**Roles and Functions.** Attempting to frame the role of a doctoral advisor has proven difficult due to the number of responsibilities and different views from people in varying disciplines. Research in this area has produced several definitions and types of relationships which may exist (Barnes et al., 2010). Definitions of a doctoral advisor include, “faculty members who guide graduate students through their programs of study, serve as evaluators in written and oral examinations, and direct dissertations and theses” (Winston & Polkosnik, 1984, p. 288), “the faculty member who has the greatest responsibility for helping guide the advisee

through the graduate program” (Schlosser, Knox, Moskovitz, & Hill, 2003, p. 179), and as a person who, “typically signs required documents the student may need from department personnel during the period of doctoral study” (Holland, 1998, p. 11). Holland (1998) in a study of African American doctoral students from various disciplines identified five types of advisor-advisee relationships which included, “formal academic advising, academic guidance, quasi-apprenticeship, academic mentoring, and career mentoring” (Barnes & Austin, 2009, p. 36). Although this study was conducted using only a population of African American doctoral students the findings did not suggest the relationships were unique to this population and therefore could be generalized to other doctoral students of various races and ethnicities (Barnes & Austin, 2009).

Research focused on international doctoral programs also supports the assumption that students may have different expectations of their advisor, or needs which are not always met. One study of doctoral students at a university in southern Sweden provided suggestions made by doctoral students regarding how supervisors could be more helpful and successful in working with doctoral students. These suggestions included being aware of the amount of guidance an individual student may need, making themselves readily accessible to students, and carrying them throughout the research design and data collection process to ensure students are staying focused and on track (Ezebilo, 2012).

The numerous definitions, roles, functions, and types of relationships which have been identified between doctoral students and their advisors further promotes the need for clearer definitions of both the term “advisor” and the roles of an advisor. A clearer understanding of the roles and responsibilities of the advisee is also important. Comparing the views of advisors and

advisees is one way to understand what differences may exist in expectations and perceptions of the advisor/advisee relationship.

**Academics, Professional Socialization, and Campus Engagement.** Student success is defined by Ferrer de Valero (2001) as, “the ability of the student to complete his/her degree requirements in a timely manner” (p. 342). Although the completion of the doctoral degree is one measure of success, a doctoral student can be successful in various ways throughout their degree program. Academics, professional socialization, and campus engagement are three important aspects of the doctoral student experience (Gardner, 2008; Gardner, 2010b; Gardner & Barnes, 2007) and can be used in determining success of students.

Faculty advisors have been found to be a critical part of each of these success factors. Academic success and engagement can be impacted by interaction with an advisor. In a study of factors which promoted or hindered international students’ academic engagement at an international university, Sakurai, Pyhalto, and Lindblom-Ylanne (2012) found lack of supervisor or supervisor’s skills hindered student engagement and academic success.

Faculty members also play an integral role in the socialization of doctoral students as they serve as instructors, supervisors for assistantships, committee members, advisors, and even mentors. Due to this myriad of roles, faculty members are seen as serving as the gatekeepers of doctoral programs (Gardner, 2010b). Faculty members are a crucial part of the socialization process for graduate students. Gardner (2010b) cited Bragg (1976) who proposed avenues through which socialization occurs are tri-fold; interactions of students with the structure of their educational setting, interaction between students within a program or department, and interaction between students and faculty members. However, according to Gardner (2010b) faculty members are truly the central piece of the socialization process for doctoral students. Faculty

members who serve as doctoral advisors working one-on-one with their students have a critical role in these experiences, including their socialization processes during their program and their opportunities post-graduation (Barnes et al., 2010; Lovitts, 2001).

An advisor plays a critical role in the socialization process for graduate students. How a student's advisor influences the student to become more involved, which aids in socialization within their program, department, university, and larger professional organizations, has been found to be an important part of the graduate student experience (Gardner & Barnes, 2007). In a study conducted with doctoral students in a higher education administration program, findings showed graduate students attributed much of their involvement to their faculty advisors and mentors. Students in the study commented many of their faculty advisors encouraged them, or told them to join certain professional organizations, as well as encouraged their involvement with other student organizations. The authors discussed this type of information is part of helping the students gain the knowledge and experience they need as part of the socialization process. Three outcomes of involvement were identified which are underscored by the framework of socialization; networking, connecting the classroom to the community, and professional development (Gardner & Barnes, 2007).

Faculty have a role in the socialization process for students even before the student begins their program. Gardner (2010b) cited Bragg (1976) who outlined six structural features of higher education institutions which influence student's attitudes and values as discussed by LeVine (1966). These six features include, "(a) the student selection process, (b) the isolation of students from outside influences, (c) the consistency of program goals, (d) the explicitness of values and role models, (e) the provision of opportunities for practicing response (i.e. coursework, examinations internships, or practica), and (f) the provision of both positive and

negative sanctions as feedback to students” (Gardner, 2010b, p. 43). When examining each of these features it is clear faculty have a hand in many of them. This also brings to light the importance of the structure of the institution and the department. Understanding the various aspects of the educational institution and program which impact student experiences is the critical factor identified in socialization.

“Graduate student involvement, whether in local graduate student organizations or in nationally affiliated professional associations, holds many benefits for graduate students, including socialization to the academic profession (Gardner, 2005)” (Gardner & Barnes, 2007, p. 1). Involvement, which has been heavily researched and discussed by Astin (1977), has been described as time and effort put forth into student activities in an institution or program. Involvement can occur in a variety of ways; academic, social, and political. Most research on involvement has focused on undergraduate students, because of this Gardner and Barnes (2007) wanted to explore the influences of involvement for graduate students. They used Astin’s (1984) conceptualization of involvement, as well as socialization as a conceptual framework to explore this aspect of the graduate student experience.

In a study of 40 doctoral students who were interviewed, findings demonstrated many of the students discussed the benefits of participating in departmental graduate student organizations. The students found through participation in these organizations they were able to increase interaction between themselves and their peers, as well as faculty members. Professional development opportunities were also more readily available to them (Gardner, 2005). Graduate student involvement can also increase engagement with people within the students’ field of study. Involvement on a national level, through participation in organizations and conferences, can facilitate engagement with other professional and contribute to the

socialization within the larger professional arena of a students' discipline outside of their department or university (Gardner & Barnes, 2007).

This study shows the role involvement plays in the socialization of graduate students, especially within their own departments and larger professional organizations. Involvement is a critical part of graduate students becoming a member of their community, acquiring the knowledge and skills necessary to adjust to their environment, and preparing for their future professional roles (Gardner & Barnes, 2007).

When examining success factors such as academics, professional socialization, and campus involvement it is important to consider varying experiences between disciplines. Golde (1998) discussed the experience for a doctoral student in the sciences is dramatically different than the experience a student in the humanities will have. He discussed science students, starting in their undergraduate years, spend many semesters and summers conducting field work and practicing research science in laboratories or out in the field. Once these students enter their graduate education they generally work closely with a faculty member or advisor who guides them, and many times funds their research. For these students, their advisor or faculty member plays a crucial role in their graduate education and the student generally makes a quick connection with them.

Golde (1998) identified for these students there are many reasons they may leave their graduate programs. These include feeling they do not feel they fit in their department, leaving to pursue an industrial career where a Ph.D. is not seen as necessary, not working well or "fitting" with their advisor. Graduate students in the sciences may even consider switching institutions in order to work with a different advisor while still being able to pursue their research interests.

For students in the humanities however, the experience can be very different. Golde (1998) discussed many graduate students in the humanities have a stronger focus on their coursework as the place for gaining knowledge about their field of study, versus being in a laboratory conducting research. For these students, building a strong relationship with one faculty member may not be as important, and although some students may make a connection with one particular person, many focus on building a team of advisors who can help them with their research and through the dissertation process.

The main reasons for attrition of graduate students in the humanities are also different from students in the sciences. Golde (1998) stated, “Several humanities students indicated an intellectual component to their attrition decision” (p. 59), meaning their studies varied greatly from their experience as an undergraduate students and they were no longer interested in the content. Other reasons for attrition were attributed to the discipline not meeting their expectations, and the reality of faculty life not meeting their expectations.

A large part of improving doctoral student success and retention is understanding the issues these students face, and the reasons they may choose to leave their programs. As Gardner and Barnes (2007) noted, the more involved and connected a student is, the more likely they are to persist. Students who persist are then, by definition, successful.

This overview of relevant literature has illuminated important aspects of the faculty advisor/doctoral student relationship which needs to be further investigated. This includes discovering a better understanding of how perspectives of faculty and students differ, how the advisor/advisee relationship changes throughout the course of students’ graduate studies, and what differences exist across various disciplines. Each of these issues has been touched on in current research, but has not been studied in depth.

## Chapter 3 - Methodology

Nearly half of students who enroll in American doctoral programs do not complete their degrees (Council of Graduate Schools, 2008; Lovitts, 2005). Although this data are from almost a decade ago, there are no reasons to show the situation has improved. Doctoral students face a variety of challenges which have led to high attrition rates, extended time to degree completion, and inadequate training for teaching and research (Gardner & Barnes, 2007). Attrition rates have shown for students who do not complete one third drop out during the first year (Bowen & Rudenstine, 1992; Golde, 1996; Golde, 1998), another drop out before candidacy, and a third post-candidacy, although this varies based on departments and disciplines (Golde, 1998).

The faculty advisor/advisee relationship plays a critical role in doctoral student completion and success (Barnes & Austin, 2009; Golde, 1998; Jacks, Chubin, Porter, & Connolly, 1983). However, defining the role of a doctoral advisor has been challenging. Research has found that faculty advisors and doctoral students may have differing perspectives on the roles and characteristics of the advisor/advisee relationship (Barnes & Austin, 2009; Barnes, Williams, & Archer, 2010; Harding-DeKam, Hamilton, & Loyd, 2012; Schlosser, Knox, Moskovitz, & Hill, 2003). Harding-DeKam et al., (2012) affirm advising is difficult to define because of the numerous roles and responsibilities of an advisor, especially in advising doctoral students. Although many researchers have attempted to define the role of a doctoral advisor based on job responsibilities, there has not been a clearly accepted definition within higher education. The characteristics of what is considered a good advisor/advisee relationship also varies across disciplines (Barnes & Austin, 2009; Ferrer de Valero, 2001), and can change as a student progresses through their program (Golde, 1998; Jacks et al., 1983; Spillett & Moisiejewicz, 2004; Tinto, 1993). Advisors in some disciplines value collegiality and accessibility, whereas

advisors from other disciplines focus more on developing a supportive/caring relationship (Barnes & Austin, 2009). These issues have created a need to examine the faculty advisor/advisee relationship at various stages in the doctoral program across disciplines.

### **Purpose**

The purpose of this study is to develop a fuller understanding of student and advisor perceptions of key aspects of the advisor/student relationship and, ultimately, completion of doctoral programs. The study examined students at three stages in their doctoral program; first year, second year to candidacy, and post-candidacy (Golde, 1998; Tinto, 1993). In addition, faculty advisors were similarly questioned. Students and advisors in STEM and social science disciplines were the participants in the study to explore disciplinary differences in the role of the faculty advisor and the type of advisor/advisee relationship. In order to accomplish this, a variety of constructs and factors related to student and advisor perspectives of the relationship were examined using survey research methodology and a cross-sectional, comparative design (Fink, 2009).

### **Research Questions**

**RQ1:** How do faculty perspectives of characteristics of the faculty advisor/doctoral student relationship differ from student perspectives within and across disciplines?

RQ1.a: What are student perceptions about the three relationship constructs that characterize the advisor/student relationship (attributes, roles and behaviors)?

RQ1.b: What are advisor perceptions about the three relationship constructs that characterize the advisor/student relationship (attributes, roles and behaviors)?

RQ1.c: What are student perceptions about the three success factors related to the advisor/student relationship (academic success, professional socialization and engagement)?

RQ1.d: What are advisor perceptions about the three success factors related to the advisor/student relationship (academic success, professional socialization and engagement)?

RQ1.e: What are the differences between advisor versus student perceptions on the relationship constructs and success factors?

RQ1.f: What are the differences between perceptions of STEM advisor versus social science advisors on relationship constructs and success factors?

RQ1.g: What are the differences between the perceptions of STEM students versus social science students on relationship constructs and success factors?

**RQ2:** How does the faculty advisor/doctoral student relationship differ for faculty and students in the first year, second year to candidacy, and post-candidacy within and across disciplines?

RQ2.a: What are student perceptions of the advisor/advisee relationship during the first year?

RQ2.b: What are student perceptions of the advisor/advisee relationship in the second year to candidacy?

RQ2.c: What are student perceptions of the advisor/advisee relationship post-candidacy?

RQ2.d: What are the differences between the perceptions of first year students and faculty?

RQ2.e: What are the differences between the perceptions of students in the second year to candidacy and faculty?

RQ2.f: What are the differences between the perceptions of students post-candidacy and faculty?

RQ2.g: What are the differences between the perceptions of STEM students versus social science students in each of the three phases?

### **Research Setting and Participants**

The research involved faculty doctoral advisors and doctoral students at a four-year public research institution in two discipline areas: science, technology, engineering, math (STEM), and social sciences. The research participants were faculty advisors who have been granted approval to serve as major professors, and full-time, on-campus doctoral students. Participants were all doctoral students and all major professors in departments categorized as STEM (Chemistry, Physics, Agronomy, Mathematics, Biology, Animal Sciences, Computer Science, Mechanical and Nuclear Engineering, Electrical and Computer Engineering, Grain Science, Entomology, Civil Engineering, Chemical Engineering, Biochemistry) and as social science (Economics, Psychological Sciences, Statistics, History, Sociology, Geography). Due to the often complex nature of the advisor/advisee relationship, faculty advisors/advisee pairs were not purposefully selected as participants and at no time during this research project were advisors and students matched in any way. To assure anonymity, only departments with more than 20 students were selected.

To begin this study the survey population was identified in each discipline. In order to examine disciplinary differences in the advisor/advisee relationship, participants from different disciplines, specifically science, technology, engineering, math (STEM) and social science fields were selected. These populations were selected in order to provide insight into perspectives of people in different disciplines. The advisors were identified by requesting a list of graduate

faculty who have approval to serve as advisors for Ph.D. students through the Qualtrics survey population tool. A list of full-time, on-campus Ph.D. students in departments chosen for the study was obtained through the Qualtrics survey population tool. These requests were submitted online after IRB approval for the study was received (see Appendix A).

### **Survey Development**

To answer the research questions, faculty advisors and doctoral students were surveyed. The survey was developed and tested using Dillman's Total Design Method (Dillman et al., 2009). Items for the survey were created based on the existing literature.

A thorough investigation of current literature revealed the majority of research on the faculty advisor/advisee relationship has been conducted using qualitative methods. The findings of these studies were used in developing survey items. Studies were thoroughly reviewed, and themes which emerged from the research process were selected as a basis for survey items. Using qualitative responses from previous research allowed for an in-depth understanding of both faculty and student perspectives, while maintaining broad applicability from the quantitative data which was collected through this survey (Crede & Borrego, 2012).

Themes from qualitative studies served as the relationship constructs for many of the survey items. The three constructs and descriptions of the constructs are shown in Table 1. A series of items were developed for each construct. Constructs were determined based on themes which emerged from qualitative studies by Barnes and Austin (2009), Barnes et al., (2010), Gardner (2008), Gardner (2010b), Girves and Wemmerus (1988), Golde (1998), and Schlosser et al., (2003). Construct definitions can be found in Table 1.

Table 1

*Constructs used to measure perceptions of the faculty advisor/doctoral student relationship*

<b>Construct</b>	<b>Description</b>
<b>Attributes/Characteristics</b>	Qualities or features of the advisor based on his/her behavior within the context of the advisor/advisee relationship
<b>Roles/Functions</b>	Responsibilities that are explicit or implicit aspects of the assigned duties of a faculty advisor
<b>Relationship Behaviors</b>	Different types of behaviors and interactions that impact the nature of the advisor/advisee relationship

*Note.* Definitions/constructs were selected and defined based on information from Barnes and Austin, 2009 and Barnes et al., 2010.

Likert-type response sets were used to quantify faculty advisor and doctoral student perceptions of the advisor/advisee relationship. Survey items were measured using a Likert-type scale where 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. Completed surveys can be found in Appendix B (faculty survey) and Appendix C (student survey).

Survey items addressed success factors including academic success, professional socialization, and engagement. Table 2 lists and describes these factors. Success factors were developed based on existing literature. These factors have been identified as integral parts of the doctoral experience (Barnes & Austin, 2009; Barnes et al., 2010; Gardner, 2008; Gardner, 2010b; Girves & Wemmerus, 1988; Golde, 1998; Schlosser et al., 2003). Other items gathered demographic information to describe individual difference, which have been addressed in previous literature such as, age, gender, race, ethnicity, and place in their program (Barnes & Austin, 2009; Barnes et al., 2010; Schlosser et al., 2003). Success factor definitions can be found in Table 2.

Table 2

*Constructs used to define success factors of doctoral students*

<b>Construct</b>	<b>Description</b>
<b>Academic Success</b>	The ability of a student to complete his/her degree requirements in a timely manner and measurements of grades earned during coursework and GPA
<b>Professional Socialization</b>	A process through which an individual learns to adopt the values, skills, attitudes, norms, and knowledge needed for membership in a given society, group, or organization
<b>Engagement</b>	Participation in departmental and/or campus activities outside of the requirements of the degree program.

*Note.* Definitions/constructs were selected and defined based on information from Barnes and Austin, 2009, Barnes et al., 2010, Gardner, 2008, Gardner, 2010b, Girves and Wemmerus, 1988, Golde, 1998, and Schlosser et al., 2003.

Survey items were grouped by construct/factor/demographics and by types of response sets. A survey instrument was developed on the Qualtrics online survey system.

### **Survey Pretesting**

The survey instrument was pretested using several methods (Dillman et al., 2009; Fowler, 1988). The validity of the instrument is strong because all items are matched to research findings in the literature on advisor/advisee relationships and success factors in doctoral completion. As suggested by Dillman, et al. (2009) cognitive interviews were conducted to address clarity of the items and the instructions. Cognitive interviews were conducted with two faculty advisors and two doctoral students in the College of Education. These participants were chosen because they would not be included in the final survey population. Following methods of Dillman et al., (2009) each participant was asked to complete the survey and describe their thought processes for each item. The respondents were told to include anything they thought of in the process of reading directions and answering questions. As needed, probing questions were asked in order to

fully understand the thought process of participants, and to clarify anything which may have been confusing to them.

During the cognitive interview process, a few issues with the survey emerged. Issues or questions which were noted by multiple participants were addressed by making changes to and clarifying the survey items. These issues included confusing wording of some items, repetitiveness of questions, and suggestions for new items to be included.

The pilot survey was pretested by administering it through Qualtrics, an online survey tool, to a small group of advisors and doctoral students in the College of Education. The pretest was used to test the logistics of the survey, as well as the survey form. Three advisors and eight students completed the online pilot survey. The completed surveys were reviewed by the researcher in order to identify any possible problems with survey questions. No significant issues were identified from this portion of the pilot testing. The pilot test was reviewed to gather other information such as the average time it took participants to complete the survey, and if there were any questions multiple people did not answer.

Once all feedback was collected from both the cognitive interviews and the online pilot survey, final edits were made to the survey. Changes were based on feedback from cognitive interviews and information collected from the online pilot tests. All necessary changes were made to the survey, and then the survey was finalized and prepared to be administered to final survey participants.

### **Survey Administration**

Data was collected by online surveys, administered through Qualtrics, with one version for advisors (Appendix B) and another version for students (Appendix C). The researcher followed the web survey implementation guidelines as advocated by Dillman et al. (2009). Each

person in the census population was sent an e-mail, which detailed the purpose of the research and requested their participation. The link to the survey was included in the initial e-mail and confidentiality and anonymity were assured. E-mail messages were drafted based on examples and suggestions from Dillman et al. (2009). The e-mail messages can be located in Appendix D (e-mails sent to faculty) and Appendix E (e-mails sent to students).

The initial request was sent to the participants early in the morning on a Monday. According to Dillman et al., (2009) people are more likely to respond to a request for participation if they are sent the information before they begin work for the day. Two follow-up e-mails were sent within a two-week time period to encourage all participants to complete the survey. The first reminder was sent one week after the original request. The final reminder was sent three days later, one day before the survey was set to close. Each message was varied, and the follow up messages were shorter than the initial request. The messages provided clear instructions on how to access the survey and provide a timeline for completing the survey (Dillman et al., 2009). A link to the survey was included in each of the three e-mail reminders.

### **Data Analysis**

Data from completed faculty and student surveys were analyzed using the data analysis software package, SPSS version 22.0. Descriptive statistics, including mean and standard deviation, were calculated for each item and for grouped items. Survey items were grouped by construct. The constructs are attributes/characteristics, roles and functions, relationship/behaviors (Table 1), academic success, professional socialization, and engagement (Table 2).

To answer the research questions about perceptions of individual groups (e.g. RQ1a, RQ1b, RQ1c, RQ1d, RQ2a, RQ2b, and RQ2c), descriptive statistics, including mean and standard deviation were analyzed. Independent samples t-tests were conducted to answer

research questions comparing the differences between groups (e.g. RQ1e, RQ1f, RQ1g, RQ2d, RQ2e, and RQ2f). The independent samples t-tests were used to compare mean scores for each dependent variable construct, attributes and characteristics, roles and functions, relationship behaviors, academic success, professional socialization, and engagement, between groups (Field, 2013; Pallant, 2013).

An analysis of variance (ANOVA) was used to compare the means for each construct/factor across the variable of interest for research question RQ2g. An ANOVA was used to analyze the data to answer the research questions because an ANOVA can identify relationships between variables when there are multiple levels of the independent variable. The ANOVA allows examination of the relationships of the perceptions of variables for the success factors and relationship constructs between advisors and students at each stage of graduate study, and between STEM and social science disciplines. This analysis also identifies any significant interaction between variables (Field, 2013; Pallant, 2013).

Using these methods, data was collected and analyzed to help further knowledge of these issues in the field of study. The cross-sectional design provides a variety of ways to analyze and present survey data. In this design, data are collected at a single point of time, providing a snapshot of the perceptions of advisors and students. Details from the data analysis are provided in the results section.

## **Chapter 4 - Results**

This study examined differences in perceptions about faculty advisors and doctoral students in two different disciplines. Survey research methods were utilized to identify what differences, if any, exist between and within groups. This chapter presents the findings related to each of the 14 sub-research questions, and summarizes findings related to the two primary research questions. Findings are presented through descriptive statistics, including mean and standard deviation, independent samples t-tests and analysis of variance.

### **Participants**

Selected participants for this study included faculty doctoral advisors and doctoral students at a four-year public research institution in two discipline areas: science, technology, engineering, math (STEM), and social sciences. Participants included doctoral students and major professors in departments categorized as STEM (Chemistry, Physics, Agronomy, Mathematics, Biology, Animal Sciences, Computer Science, Mechanical and Nuclear Engineering, Electrical and Computer Engineering, Grain Science, Entomology, Civil Engineering, Chemical Engineering, Biochemistry) and as social science (Economics, Psychological Sciences, Statistics, History, Sociology, Geography).

Surveys were sent electronically to 501 faculty advisors and 554 doctoral students. Two different versions of the survey were administered; one for faculty advisors (Appendix B) and one for doctoral students (Appendix C). The surveys were identical, with the exception of demographic questions which were developed to fit each group.

A total of 175 faculty advisors participated in the survey; however only 137 of those participants completed the survey for a response rate of 27.3%. Of faculty who started the survey, and indicated their discipline, 119 were from STEM and 20 were from social science.

Students completed the survey for a response rate of 23.6%; of the 197 student participants, only 131 provided complete surveys. The surveys which were started, and where student participants provided information about their discipline, included 96 students in STEM and 36 students in social science. This response rate meets the criteria for a sample size at the 95% confidence level, plus or minus 10%. For a survey population of 1000, the response rate required to meet this criteria is 88 (Dillman, 2009).

The student sample was comprised of 60.0% males, 39% females, 1.0% transgender or other, and 1.0% who preferred not to say. Faculty participants included 70.0% males and 30.0% females. The student population included 31.0% Kansas Residents, 22.0% Out-of-State students, 46.0% International students, and 2.0% of students who preferred not to disclose their student status.

The student population was predominately White (50%), and also included students who identified as Asian/Asian American (35%), Latino(a)/Chicano(a)/Hispanic (5%), Black/African/African American (3%), Middle Eastern (2%), American Indian (1%), Other, including people who specified Asian (Afghan), Muslim, and Human (3%), and students who preferred not to say (5%). The faculty population was also predominately White (84%), and also included faculty who identified as Asian/Asian American (7%), Latino(a)/Chicano(a)/Hispanic (1%), Black/African/African American (1%), Middle Eastern (1%), American Indian (1%), Pacific Islander (1%), Other, which included one person who specified East Indian (1%), and people who preferred not to say (6%).

Faculty advisors and students from two separate disciplines were surveyed. Participants from the STEM discipline included 86% of the faculty sample and 73% of the student sample. Participants from the social science discipline comprised 14% of the faculty sample and 27% of

the student sample. Due to the anonymity of the survey population, non-respondents were unable to be examined.

### **Data Analysis by Research Questions and Sub-Questions**

**RQ1:** How do faculty perspectives of characteristics of the faculty advisor/doctoral student relationship differ from student perspectives within and across disciplines?

Data analysis indicated some difference in the perspectives of faculty advisors and doctoral students on faculty advisor attributes and characteristics, roles and functions, relationship behaviors, and advisor role in academic success, professional socialization, and engagement within and across disciplines. Specific findings are reported under each sub-question. These findings provide greater detail of differences between groups.

**RQ1.a:** What are student perceptions about the three relationship constructs that characterize the advisor/student relationship (attributes, roles and behaviors)?

Survey questions were developed to measure various aspects of the three relationship constructs identified from qualitative studies as being an integral part of the faculty advisor/doctoral student relationship.

**Attributes and Characteristics.** Perceptions of attributes and characteristics, the first construct, were measured using 18 survey items, as found in Appendix C. Survey items were measured using a Likert-type scale where 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. Items included; accessible, helpful, socializing, caring, interested, friendly, professional, collegial, supportive, honest, positive, respectful, encouraging, negative, businesslike, disinterested, inaccessible, and unhelpful. Student perceptions were measured for individual items and for groups of items (positive and negative) using descriptive statistics, including mean and standard deviation.

On average, mean scores and standard deviations for each item were relatively similar, indicating little variance in participant responses. Items which measured positive attributes and characteristics included “accessible”,  $M = 4.39$ ,  $SD = .91$ , “helpful”,  $M = 4.47$ ,  $SD = .81$ , “socializing”,  $M = 3.98$ ,  $SD = 1.05$ , “caring”,  $M = 4.19$ ,  $SD = .92$ , “interested”,  $M = 4.35$ ,  $SD = .80$ , “friendly”,  $M = 4.40$ ,  $SD = .86$ , “professional”,  $M = 4.46$ ,  $SD = .82$ , “collegial”,  $M = 4.34$ ,  $SD = .87$ , “supportive”,  $M = 4.33$ ,  $SD = .97$ , “honest”,  $M = 4.50$ ,  $SD = .81$ , “positive”,  $M = 4.31$ ,  $SD = .93$ , “respectful”,  $M = 4.43$ ,  $SD = .95$ , and “encouraging”,  $M = 4.23$ ,  $SD = 1.09$ .

The item measuring positive attributes and characteristics with the highest mean score was “honest”,  $M = 4.50$ ,  $SD = .81$ . The item measuring positive attributes and characteristics with the lowest mean score was “socializing”,  $M = 3.98$ ,  $SD = 1.05$ . “Encouraging” fell within the average of mean scores,  $M = 4.23$ , but had the highest amount of variance,  $SD = 1.09$ .

Negative attributes and characteristics were measured by 5 survey items. “Businesslike” had the highest mean score,  $M = 3.06$ ,  $SD = 1.33$ , demonstrating this is a common perceived attribute/characteristic of advisors in both STEM and social science disciplines. Other items had more similar mean scores; “negative”,  $M = 1.90$ ,  $SD = 1.04$ , “disinterested”,  $M = 1.73$ ,  $SD = 1.00$ , “inaccessible”,  $M = 1.77$ ,  $SD = 1.07$ , and “unhelpful”,  $M = 1.63$ ,  $SD = .89$ . Details of individual items measuring attributes and characteristics can be seen in Table 3.

Table 3

*Mean Scores and Standard Deviations of Student Perceptions of Advisor Attributes and Characteristics*

<b>Item</b>	<b>n</b>	<b>M</b>	<b>SD</b>
<b>Accessible</b>	160	4.39	0.91
<b>Helpful</b>	159	4.47	0.81
<b>Socializing</b>	159	3.98	1.05

<b>Caring</b>	159	4.19	0.92
<b>Interested</b>	159	4.35	0.80
<b>Friendly</b>	159	4.40	0.86
<b>Professional</b>	159	4.46	0.82
<b>Collegial</b>	158	4.34	0.87
<b>Supportive</b>	159	4.33	0.97
<b>Honest</b>	159	4.50	0.81
<b>Positive</b>	159	4.31	0.93
<b>Respectful</b>	159	4.43	0.95
<b>Negative</b>	156	1.90	1.04
<b>Businesslike</b>	158	3.06	1.33
<b>Disinterested</b>	156	1.73	1.00
<b>Inaccessible</b>	157	1.77	1.07
<b>Unhelpful</b>	157	1.63	.89

Survey items measuring student perceptions of attributes and characteristics were analyzed as a group by combining variables; one group of positive items and one group of negative items. Mean and standard deviation were calculated for grouped items; positive attributes and characteristics ( $n = 158$ ),  $M = 56.47$ ,  $SD = 9.04$ , negative attributes and characteristics ( $n = 155$ ),  $M = 10.12$ ,  $SD = 3.75$ .

**Roles and Functions.** The second construct, roles and functions, was measured using four survey questions, which included a total of 18 items; the complete survey can be found in Appendix C. Survey items were measured using a Likert-type scale where 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. Student perceptions of this

construct were measured by looking at similarities and differences of individual items as well as groups of items. Overall, there was not much variation in the feedback for this group of items.

The item with the highest mean was, “encourages advisees to present at scholarly and professional conferences and meetings”,  $M = 4.31$ ,  $SD = 1.02$ . Two other items revealed similar mean scores, “helps advisees learn intellectual behaviors appropriate to their discipline”,  $M = 4.30$ ,  $SD = .84$ , and “encourages advisees to attend scholarly and professional conferences and meetings”,  $M = 4.30$ ,  $SD = .99$ . The item with the lowest mean score was, “prompts advisees engagement less than student peers of advisees prompt engagement”,  $M = 3.29$ ,  $SD = 1.11$ .

Details of individual items measuring student perceptions of roles and functions of an advisor can be seen in Table 4.

Table 4

*Mean Scores and Standard Deviations of Student Perceptions of Advisor Roles and Functions*

<b>Item</b>	<b>Assesses individual needs</b>	<b>Supports advisees progress by providing clear direction and feedback</b>	<b>Helps advisees find dissertation projects</b>	<b>Helps advisees become independent in their ability to plan, conduct, and execute research projects</b>
<b>M</b>	4.05	4.06	4.16	4.24
<b>SD</b>	0.99	1.11	1.01	0.96
<b>n</b>	151	151	151	151

<b>Item</b>	<b>Discusses program requirements including coursework, dissertation progress, comprehensive exams, and career goals</b>	<b>Conducts annual reviews of advisees academic progress</b>	<b>Helps advisees develop professional skills</b>	<b>Helps advisees learn intellectual behaviors appropriate to their discipline</b>	
<b>M</b>	4.07	3.75	4.23	4.3	
<b>SD</b>	1.08	1.28	0.91	0.84	
<b>n</b>	151	151	149	149	
<b>Item</b>	<b>Prepares advisees for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae</b>	<b>Encourages advisees to attend scholarly and professional conferences and meetings</b>	<b>Encourages advisees to present at scholarly and professional conferences and meetings</b>	<b>Collaborates with advisees in publishing research in their discipline</b>	<b>Assists advisees in networking with other professionals in their field</b>
<b>M</b>	3.91	4.3	4.31	4.22	3.9
<b>SD</b>	1.18	0.99	1.02	1.07	1.12
<b>n</b>	149	148	147	148	147
<b>Item</b>	<b>Encourages advisees to get involved in departmental groups and activities</b>	<b>Encourages advisees to get involved in campus groups and activities outside of the department</b>	<b>Supports advisees involvement in departmental groups and activities</b>	<b>Supports advisees involvement in campus groups and activities outside of the department</b>	<b>Prompts advisees engagement less than student peers of advisees prompt engagement</b>
<b>M</b>	3.77	3.41	3.83	3.51	3.29
<b>SD</b>	1.19	1.3	1.19	1.3	1.11
<b>n</b>	144	144	144	144	139

All items measuring perceptions of roles and functions of an advisor were analyzed as one group. All 18 survey items measuring perceptions of advisor roles and functions were

grouped to create one item. Analysis of this grouped item ( $n = 136$ ) was conducted, results of descriptive statistics included,  $M = 71.24$ ,  $SD = 14.58$ .

**Behaviors.** The final construct measured student perceptions of the advisor/advisee relationship. This construct was measured through 4 survey questions (see Appendix C), which contained a total of 15 individual items. Items in this construct measured various aspects of the relationship of an advisee has with their advisor. Overall, responses were positive when looking at individual items. Items were analyzed individually and as a group in order to determine student perceptions.

The item with the highest mean score was, “a major professor should have regularly scheduled meetings with their advisee”,  $M = 4.49$ ,  $SD = .83$ . The item with the lowest mean score was, “it is easy to discuss interpersonal conflicts with a major professor”,  $M = 3.35$ ,  $SD = 1.31$ . Other items which addressed discussing conflicts and personal problems with major professors also received lower scores. This indicates students do not necessarily feel comfortable discussing conflicts between themselves and their major professor. Details of analysis for individual items measuring student perceptions of the advisor/advisee relationship can be found in Table 5.

As with the other constructs, survey items measuring student perceptions of the advisor/advisee relationship were also grouped for analysis. This allows for examination of all items measured as one construct. The mean score for the grouped item ( $n = 133$ ) was,  $M = 59.87$ ,  $SD = 10.55$ .

Table 5

*Mean Scores and Standard Deviations of Student Perceptions of Advisor Behaviors*

<b>Item</b>	<b>Serves as a mentor for their advisees</b>	<b>Mentors through being a role model</b>	<b>Mentors through setting standards</b>	<b>Mentors through helping students fulfill their potential</b>	<b>Works in partnership with their advisees on projects where both are equally contributing members</b>
<b>M</b>	4.41	4.15	4.18	4.24	4.01
<b>SD</b>	0.9	1.07	1	1.02	1.1
<b>n</b>	142	142	141	142	141
<b>Item</b>	<b>Conflict between major professors and advisees should be dealt with openly</b>	<b>Working through conflict with a major professor strengthens the major professor/advisee relationship</b>	<b>Major professors are very open about discussing conflict in the major professor/advisee relationship</b>	<b>It is easy to discuss personal problems with a major professor</b>	<b>It is easy to discuss interpersonal conflicts with a major professor</b>
<b>M</b>	4.06	3.9	3.55	3.35	3.33
<b>SD</b>	0.98	1.06	1.13	1.31	1.27
<b>n</b>	135	135	135	134	135
<b>Item</b>	<b>It is easy to discuss professional problems with a major professor</b>	<b>It is easy to discuss professional interpersonal conflicts with a major professor</b>	<b>A major professor should have regularly scheduled meetings with their advisee</b>	<b>A major professor should meet with their advisee frequently (e.g. weekly)</b>	<b>A major professor should initiate meetings with their advisee</b>
<b>M</b>	4.01	3.77	4.49	4.34	3.93
<b>SD</b>	1.09	1.05	0.83	0.88	1.06
<b>n</b>	135	135	134	134	133

**RQ1.b:** What are advisor perceptions about the three relationship constructs that characterize the advisor/student relationship (attributes, roles and behaviors)?

The same survey questions used to measure student perceptions about the three relationship constructs that characterize the advisor/student relationship were used to measure advisor perceptions. Survey items were measured using a Likert-type scale where 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. All survey items can be found in Appendix B.

**Attributes and Characteristics.** Perceptions of the first construct, attributes and characteristics, were measured using 18 survey items. These items included; accessible, helpful, socializing, caring, interested, friendly, professional, collegial, supportive, honest, positive, respectful, encouraging, negative, businesslike, disinterested, inaccessible, and unhelpful. Advisor perceptions were measured for individual items and for groups of items (positive and negative) using descriptive statistics, including mean and standard deviation.

The mean scores for each item were quite similar; however there were slight differences in the standard deviations. Items which measured positive attributes and characteristics included “accessible”,  $M = 4.66$ ,  $SD = .59$ , “helpful”,  $M = 4.73$ ,  $SD = .46$ , “socializing”,  $M = 3.16$ ,  $SD = .81$ , “caring”,  $M = 4.27$ ,  $SD = .77$ , “interested”,  $M = 4.60$ ,  $SD = .51$ , “friendly”,  $M = 4.17$ ,  $SD = .79$ , “professional”,  $M = 4.84$ ,  $SD = .40$ , “collegial”,  $M = 4.50$ ,  $SD = .71$ , “supportive”,  $M = 4.66$ ,  $SD = .50$ , “honest”,  $M = 4.84$ ,  $SD = .40$ , “positive”,  $M = 4.32$ ,  $SD = .74$ , “respectful”,  $M = 4.73$ ,  $SD = .46$ , and “encouraging”,  $M = 4.62$ ,  $SD = .54$ .

Two items measuring advisor perceptions of positive attributes and characteristics had the highest mean scores; “professional”,  $M = 4.84$ ,  $SD = .40$  and “honest”,  $M = 4.84$ ,  $SD = .40$ . The item measuring positive attributes and characteristics with the lowest mean score was

“socializing”,  $M = 3.16$ ,  $SD = .81$ . This item also had the largest amount of variance in this group of items.

Negative attributes and characteristics were measured by 5 survey items. “Businesslike” had the highest mean score,  $M = 3.31$ ,  $SD = 1.13$ . Other items had more similar mean scores; “negative”,  $M = 1.89$ ,  $SD = .92$ , “disinterested”,  $M = 1.30$ ,  $SD = .59$ , “inaccessible”,  $M = 1.28$ ,  $SD = .60$ , and “unhelpful”,  $M = 1.19$ ,  $SD = .47$ , which had the lowest mean score of the group. Details of individual items measuring advisor perceptions of attributes and characteristics can be seen in Table 6 below.

Table 6

*Mean Scores and Standard Deviations of Advisor Perceptions of Advisor Attributes and Characteristics*

<b>Item</b>	<b>n</b>	<b>M</b>	<b>SD</b>
<b>Accessible</b>	151	4.66	0.59
<b>Helpful</b>	151	4.73	0.46
<b>Socializing</b>	149	3.16	0.81
<b>Caring</b>	150	4.27	0.77
<b>Interested</b>	150	4.60	0.51
<b>Friendly</b>	151	4.17	0.79
<b>Professional</b>	151	4.84	0.40
<b>Collegial</b>	151	4.50	0.71
<b>Supportive</b>	151	4.66	0.50
<b>Honest</b>	151	4.84	0.40
<b>Positive</b>	150	4.32	0.74
<b>Respectful</b>	150	4.73	0.46
<b>Encouraging</b>	151	4.62	0.54
<b>Negative</b>	151	1.89	0.92
<b>Businesslike</b>	150	3.31	1.13

<b>Disinterested</b>	151	1.30	0.59
<b>Inaccessible</b>	151	1.28	0.60
<b>Unhelpful</b>	150	1.19	0.47

Survey items measuring advisor perceptions of attributes and characteristics were also analyzed as a group; one group of positive items and one group of negative items. Mean and standard deviation were calculated for group items; positive attributes and characteristics ( $n = 145$ ),  $M = 58.07$ ,  $SD = 4.75$ , negative attributes and characteristics ( $n = 149$ ),  $M = 8.97$ ,  $SD = 5.32$ .

**Roles and Functions.** Advisor perceptions of the second construct, roles and functions, were measured using four survey questions which included 18 items. Advisor perceptions of this construct were measured by looking at similarities and differences of individual items as well as groups of items. Items used to measure perceptions of roles and functions of an advisor were all presented from a positive point of view. There was slightly more variation in mean scores for items in this construct than in the first construct.

The item with the highest mean was, “helps advisees become independent in their ability to plan, conduct, and execute research projects”,  $M = 4.72$ ,  $SD = .45$ . The item with the lowest mean score was, “prompts advisees engagement less than student peers of advisees prompt engagement”,  $M = 3.14$ ,  $SD = .79$ . The item with the second to lowest mean score was, “encourages advisees to get involved in campus groups and activities outside of the department”,  $M = 3.25$ ,  $SD = .86$ . Details of individual items measuring advisor perceptions of roles and functions of an advisor can be seen in Table 7.

Table 7

*Mean Scores and Standard Deviations of Advisor Perceptions of Advisor Roles and Functions*

<b>Item</b>	<b>Assesses individual needs</b>	<b>Supports advisees progress by providing clear direction and feedback</b>	<b>Helps advisees find dissertation projects</b>	<b>Helps advisees become independent in their ability to plan, conduct, and execute research projects</b>	
<b>M</b>	4.55	4.53	4.21	4.72	
<b>SD</b>	0.53	0.61	0.78	0.45	
<b>n</b>	148	149	148	149	
<b>Item</b>	<b>Discusses program requirements including coursework, dissertation progress, comprehensive exams, and career goals</b>	<b>Conducts annual reviews of advisees academic progress</b>	<b>Helps advisees develop professional skills</b>	<b>Helps advisees learn intellectual behaviors appropriate to their discipline</b>	
<b>M</b>	4.48	4.01	4.58	4.66	
<b>SD</b>	0.63	0.9	0.52	0.47	
<b>n</b>	149	149	148	148	
<b>Item</b>	<b>Prepares advisees for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae</b>	<b>Encourages advisees to attend scholarly and professional conferences and meetings</b>	<b>Encourages advisees to present at scholarly and professional conferences and meetings</b>	<b>Collaborates with advisees in publishing research in their discipline</b>	<b>Assists advisees in networking with other professionals in their field</b>
<b>M</b>	4.43	4.47	4.56	4.62	4.25
<b>SD</b>	0.7	0.7	0.63	0.79	0.79
<b>n</b>	148	148	147	146	147

<b>Item</b>	<b>Encourages advisees to get involved in departmental groups and activities</b>	<b>Encourages advisees to get involved in campus groups and activities outside of the department</b>	<b>Supports advisees involvement in departmental groups and activities</b>	<b>Supports advisees involvement in campus groups and activities outside of the department</b>	<b>Prompts advisees engagement less than student peers of advisees prompt engagement</b>
<b>M</b>	3.95	3.25	3.86	3.36	3.14
<b>SD</b>	0.81	0.86	0.81	0.89	0.79
<b>n</b>	144	145	145	145	136

All items measuring advisor perceptions of their roles and functions of as an advisor were also analyzed as a grouped variable. All 18 items were grouped together to show results for the roles and functions construct. Analysis of the construct ( $n = 131$ ) resulted in a,  $M = 71.24$ ,  $SD = 14.58$ .

**Behaviors.** The third construct measured advisor perceptions of the advisor/advisee relationship. This construct was measured using 4 survey questions which included a total of 15 individual items, found in Appendix B. Items in this construct measured various aspects of the relationship an advisee has with their advisor. Items were analyzed individually and also as a group in order to determine student perceptions. There was a more noticeable variation in responses in the items for this construct than the first two constructs.

The item with the highest mean score was, “serves as a mentor for their advisees”,  $M = 4.81$ ,  $SD = .39$ . The item with the lowest mean score was, “it is easy to discuss interpersonal conflicts with a major professor”,  $M = 2.90$ ,  $SD = .98$ . Other items which addressed students discussing interpersonal conflicts with their advisor also had lower mean scores. This indicates advisors recognize the difficulty students may have in talking about conflicts and problems with

them. Details of analysis for individual items measuring student perceptions of the advisor/advisee relationship can be found in Table 8.

Table 8

*Mean Scores and Standard Deviations of Advisor Perceptions of Advisor Behaviors*

<b>Item</b>	<b>Serves as a mentor for their advisees</b>	<b>Mentors through being a role model</b>	<b>Mentors through setting standards</b>	<b>Mentors through helping students fulfill their potential</b>	<b>Works in partnership with their advisees on projects where both are equally contributing members</b>
<b>M</b>	4.81	4.62	4.52	4.55	4
<b>SD</b>	0.39	0.54	0.64	0.61	0.9
<b>n</b>	144	143	144	144	143
<b>Item</b>	<b>Conflict between major professors and advisees should be dealt with openly</b>	<b>Working through conflict with a major professor strengthens the major professor/advisee relationship</b>	<b>Major professors are very open about discussing conflict in the major professor/advisee relationship</b>	<b>It is easy to discuss personal problems with a major professor</b>	<b>It is easy to discuss interpersonal conflicts with a major professor</b>
<b>M</b>	4.32	3.69	3.37	3.04	2.9
<b>SD</b>	0.71	0.97	0.97	1.11	0.98
<b>n</b>	140	140	140	140	140
<b>Item</b>	<b>It is easy to discuss professional problems with a major professor</b>	<b>It is easy to discuss professional interpersonal conflicts with a major professor</b>	<b>A major professor should have regularly scheduled meetings with their advisee</b>	<b>A major professor should meet with their advisee frequently (e.g. weekly)</b>	<b>A major professor should initiate meetings with their advisee</b>
<b>M</b>	3.67	3.26	4.22	4.05	3.59
<b>SD</b>	1.06	1.02	0.81	0.99	0.98
<b>n</b>	140	140	139	139	139

The final set of variables was grouped to measure perceptions of the relationship construct as a whole. The grouped item ( $n = 137$ ) contains all survey items used to measure perceptions of advisor behaviors. The mean score for the grouped item is,  $M = 58.36$ ,  $SD = 6.67$ .

**RQ1.c:** What are student perceptions about the three success factors related to the advisor/student relationship (academic success, professional socialization and engagement)?

Survey items were used to measure the three factors in the first construct, advisor attributes and characteristics, roles and functions, and relationship behaviors. Various survey items were then used to measure perceptions about the three success factors, as determined by previous research, which include academic success, professional socialization and engagement. Survey items were measured using a Likert-type scale where 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree.

**Academic Success.** The survey included 9 items (Appendix C) used to measure student perceptions of the advisor/advisee relationship related to academic success. The item which had the highest mean score was, “a major professor should have regularly scheduled meeting with their advisee”,  $M = 4.49$ ,  $SD = .83$ . This finding indicates the importance students see in meeting with their advisors on a regular basis. The item with the lowest mean score was, “conducts annual reviews of advisees academic progress”,  $M = 3.75$ ,  $SD = 1.28$ . This item also had a higher amount of variance than all other items used to measure perceptions of this success factor; indicating greater variance among students’ experiences with their advisors conducting annual reviews of their progress. Details of descriptive statistics used to measure the perceptions of this success factor can be found in Table 9.

Table 9

*Mean Scores and Standard Deviations of Student Perceptions of Advisor Role in Student Academic Success*

<b>Item</b>	<b>Assesses individual needs</b>	<b>Supports advisees progress by providing clear direction and feedback</b>	<b>Helps advisees find dissertation projects</b>	<b>Helps advisees become independent in their ability to plan, conduct, and execute research projects</b>		
<b>M</b>	4.05	4.06	4.16	4.24		
<b>SD</b>	0.99	1.11	1.01	0.96		
<b>n</b>	151	151	151	151		

  

<b>Item</b>	<b>Discusses program requirements including coursework, dissertation progress, comprehensive exams, and career goals</b>	<b>Conducts annual reviews of advisees academic progress</b>	<b>A major professor should have regularly scheduled meetings with their advisee</b>	<b>A major professor should meet with their advisee frequently (e.g. weekly)</b>	<b>A major professor should initiate meetings with their advisee</b>
<b>M</b>	4.07	3.75	4.49	4.34	3.93
<b>SD</b>	1.08	1.28	0.83	0.88	1.06
<b>n</b>	151	151	134	134	133

**Professional Socialization.** The second success factor construct focuses on professional socialization. The survey measured perceptions of the advisor role in this success factor using 11 items. Student responses on these items all resulted in relatively equal means and standard deviations. This indicates students perceive each of these as actions advisors take in assisting them with professional socialization. The item with the highest mean score was, “serves as a mentor for their advisees”,  $M = 4.41$ ,  $SD = .90$ . Other items with high mean scores included,

“encourages advisees to present at scholarly and professional conferences and meetings”,  $M = 4.31$ ,  $SD = 1.02$ , “helps advisees learn intellectual behaviors appropriate to their discipline”,  $M = 4.3$ ,  $SD = .84$ , and “encourages advisees to attend scholarly and professional conferences and meetings”,  $M = 4.3$ ,  $SD = .99$ . The items with the lowest mean scores included, “prepares advisees for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae”,  $M = 3.91$ ,  $SD = 1.18$ , and “assists advisees with networking with other professionals in their field”,  $M = 3.90$ ,  $SD = 1.12$ . Interestingly items which measured actions encouraged by advisors were perceived to occur more frequently than items which measured actions taken by advisors. Details of descriptive statistics for this set of variables can be found in Table 10.

Table 10

*Mean Scores and Standard Deviations of Student Perceptions of Advisor Role in Student Professional Socialization*

<b>Item</b>	<b>Helps advisees develop professional skills</b>	<b>Helps advisees learn intellectual behaviors appropriate to their discipline</b>	<b>Prepares advisees for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae</b>	<b>Encourages advisees to attend scholarly and professional conferences and meetings</b>	<b>Encourages advisees to present at scholarly and professional conferences and meetings</b>
<b>M</b>	4.23	4.3	3.91	4.3	4.31
<b>SD</b>	0.91	0.84	1.18	0.99	1.02
<b>n</b>	149	149	149	148	147

<b>Item</b>	<b>Collaborates with advisees in publishing research in their discipline</b>	<b>Assists advisees in networking with other professionals in their field</b>	<b>Serves as a mentor for their advisees</b>	<b>Mentors through being a role model</b>	<b>Mentors through setting standards</b>	<b>Mentors through helping students fulfill their potential</b>
<b>M</b>	4.22	3.9	4.41	4.15	4.18	4.24
<b>SD</b>	1.07	1.12	0.9	1.07	1	1.02
<b>n</b>	148	147	142	142	141	142

**Engagement.** The final success factor, engagement, was measured using 5 survey items. These items focused on perceptions of support and encouragement for students to be involved in campus and departmental groups and activities. On average, questions measuring perceptions of these construct items resulted in slightly lower than average mean scores in comparison with other success factor construct items. The mean scores for this construct ranged from the lowest scored item, “prompts advisees engagement less than student peers of advisees prompt engagement”,  $M = 3.29$ ,  $SD = 1.11$ , to the highest scored item, “supports advisees involvement in departmental groups and activities”,  $M = 3.83$ ,  $SD = 1.19$ . Worthy to note is the slightly higher response for encouragement and support of engagement in departmental groups and activities, than in groups and activities outside of the department. Details of descriptive statistics for this construct can be found in Table 11.

Table 11

*Mean Scores and Standard Deviations of Student Perceptions of Advisor Role in Student Engagement*

<b>Item</b>	<b>Encourages advisees to get involved in departmental groups and activities</b>	<b>Encourages advisees to get involved in campus groups and activities outside of the department</b>	<b>Supports advisees involvement in departmental groups and activities</b>	<b>Supports advisees involvement in campus groups and activities outside of the department</b>	<b>Prompts advisees engagement less than student peers of advisees prompt engagement</b>
<b>M</b>	3.77	3.41	3.83	3.51	3.29
<b>SD</b>	1.19	1.3	1.19	1.3	1.11
<b>n</b>	144	144	144	144	139

**RQ1.d:** What are advisor perceptions about the three success factors related to the advisor/student relationship (academic success, professional socialization and engagement)?

The same survey items were used to measure advisor perceptions about the three success factors, as determined by previous research, which include academic success, professional socialization and engagement, as were used to measure student perceptions. These items can be found in Appendix B and Appendix C. A total of 25 survey items were used to measure perceptions. Descriptive statistics were collected in order to identify advisor perceptions of their role in student success.

**Academic Success.** The survey included 9 items, on a Likert-type scale, which measured advisor perceptions of the role of the advisor, and their relationship with their advisees, related to student academic success. The item which had the highest mean score was, “assesses individual needs”,  $M = 4.55$ ,  $SD = .53$ . Another item with a similar mean score was, “supports advisees progress by providing clear direction and feedback”,  $M = 4.53$ ,  $SD = .61$ . In contrast, the item with the lowest mean score was, “a major professor should initiate meetings with their advisee”,  $M = 3.59$ ,  $SD = .98$ . This is an important response to note in regards to how advisors may view their responsibilities differently than students view advisor responsibilities. Details of

descriptive statistics used to measure the perceptions of this success factor can be found in Table 12.

Table 12

*Mean Scores and Standard Deviations of Advisor Perceptions of Advisor Role in Student Academic Success*

<b>Item</b>	<b>Assesses individual needs</b>	<b>Supports advisees progress by providing clear direction and feedback</b>	<b>Helps advisees find dissertation projects</b>	<b>Helps advisees become independent in their ability to plan, conduct, and execute research projects</b>	
<b>M</b>	4.55	4.53	4.21	4.72	
<b>SD</b>	0.53	0.61	0.78	0.45	
<b>n</b>	148	149	148	149	
<b>Item</b>	<b>Discusses program requirements including coursework, dissertation progress, comprehensive exams, and career goals</b>	<b>Conducts annual reviews of advisees academic progress</b>	<b>A major professor should have regularly scheduled meetings with their advisee</b>	<b>A major professor should meet with their advisee frequently (e.g. weekly)</b>	<b>A major professor should initiate meetings with their advisee</b>
<b>M</b>	4.48	4.01	4.22	4.05	3.59
<b>SD</b>	0.63	0.9	0.81	0.99	0.98
<b>n</b>	149	149	139	139	139

**Professional Socialization.** The second set of survey items measured perceptions of the advisor role in students' professional socialization. The survey measured perceptions with 11 items. Advisor responses on these items all resulted in high mean scores. These results

demonstrate a perception of importance in the role of advisors in assisting students with professional socialization.

The item with the highest mean score was, “serves as a mentor for their advisees”,  $M = 4.81$ ,  $SD = .39$ . This was also the highest scoring item for students. The items with the lowest mean scores included, “assists advisees with networking with other professionals in their field”,  $M = 4.25$ ,  $SD = .79$ , and “prepares advisees for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae”,  $M = 4.43$ ,  $SD = .70$ . Important to note though is the small difference, .56, between the highest and lowest mean score for this set of items. Details of descriptive statistics for this set of variables can be found in Table 13.

Table 13

*Mean Scores and Standard Deviations of Advisor Perceptions of Advisor Role in Student Professional Socialization*

<b>Item</b>	<b>Helps advisees develop professional skills</b>	<b>Helps advisees learn intellectual behaviors appropriate to their discipline</b>	<b>Prepares advisees for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae</b>	<b>Encourages advisees to attend scholarly and professional conferences and meetings</b>	<b>Encourages advisees to present at scholarly and professional conferences and meetings</b>
<b>M</b>	4.58	4.66	4.43	4.47	4.56
<b>SD</b>	0.52	0.47	0.7	0.7	0.63
<b>n</b>	148	148	148	148	147

<b>Item</b>	<b>Collaborates with advisees in publishing research in their discipline</b>	<b>Assists advisees in networking with other professionals in their field</b>	<b>Serves as a mentor for their advisees</b>	<b>Mentors through being a role model</b>	<b>Mentors through setting standards</b>	<b>Mentors through helping students fulfill their potential</b>
<b>M</b>	4.62	4.25	4.81	4.62	4.52	4.55
<b>SD</b>	0.79	0.79	0.39	0.54	0.64	0.61
<b>n</b>	146	147	144	143	144	144

**Engagement.** Engagement, the final success factor, was measured using 5 survey items.

These items focused on perceptions of advisor support and encouragement of students being involved in campus and departmental groups and activities. Similar to results from student responses, mean scores, on average, were slightly lower than average mean scores for the other two success factor construct items. The lowest mean score for an item in this construct was, “prompts advisees engagement less than student peers of advisees prompt engagement”,  $M = 3.14$ ,  $SD = .79$ . The item with the highest mean score was, “encourages advisees to get involved in departmental groups and activities”,  $M = 3.95$ ,  $SD = .81$ . Details of descriptive statistics for this construct can be found in Table 14.

Table 14

*Mean Scores and Standard Deviations of Advisor Perceptions of Advisor Role in Student Engagement*

<b>Item</b>	<b>Encourages advisees to get involved in departmental groups and activities</b>	<b>Encourages advisees to get involved in campus groups and activities outside of the department</b>	<b>Supports advisees involvement in departmental groups and activities</b>	<b>Supports advisees involvement in campus groups and activities outside of the department</b>	<b>Prompts advisees engagement less than student peers of advisees prompt engagement</b>
<b>M</b>	3.95	3.25	3.86	3.36	3.14
<b>SD</b>	0.81	0.86	0.81	0.89	0.79
<b>n</b>	144	145	145	145	136

**RQ1.e:** What are the differences between advisor versus student perceptions on the relationship constructs and success factors?

Independent samples t-test were used to compare the differences in perceptions for faculty advisors and doctoral student advisees on the three relationship constructs and three success factors. The first relationship construct, attributes and characteristics, was divided into two groups; one for positive attributes and one for negative attributes. A separate independent samples t-test was conducted for each construct.

**Relationship Constructs.** There was a significant difference between faculty perceptions of positive advisor attributes and characteristics ( $M = 58.047$ ,  $SD = 4.75$ ) and student perceptions ( $M = 56.47$ ,  $SD = 9.04$ ;  $t(241) = 1.94$ ,  $p = .05$  two-tailed). A significant difference was also found between faculty perceptions of negative advisor attributes and characteristics ( $M = 8.97$ ,  $SD = 2.31$ ) and student perceptions ( $M = 10.12$ ,  $SD = 3.75$ ;  $t(257) = -3.21$ ,  $p = .001$  two-tailed).

The independent samples t-test conducted to measure differences in perceptions of advisor roles and functions showed on average, faculty perceptions were higher ( $M = 75.90$ ,  $SD = 6.92$ ) than student perceptions ( $M = 71.42$ ,  $SD = 14.58$ ). This difference was significant  $t(194) = 3.23$ ,  $p = .001$  two-tailed. When measuring perceptions, using an alpha of .05, of the relationship behavior construct items, a significant difference was found between faculty advisors ( $M = 58.36$ ,  $SD = 6.67$ ) and students ( $M = 56.09$ ,  $SD = 9.70$ ),  $t(233) = 2.23$ ,  $p = .027$  two-tailed.

**Success Factor Constructs.** Perceptions of the first success factor construct, academic success, were measured for faculty advisors and students. An independent samples *t*-test found a significant difference between faculty ( $M = 38.50$ ,  $SD = 3.80$ ) and students ( $M = 37.23$ ,  $SD = 5.83$ ),  $t(226) = 2.12$ ,  $p = .036$  two-tailed. A significant difference was also found between

faculty perceptions ( $M = 50.13$ ,  $SD = 4.49$ ) and student perceptions ( $M = 46.21$ ,  $SD = 8.99$ ;  $t(203) = 4.60$ ,  $p = .000$  two-tailed) on the professional socialization construct. The final success factor item, which was measured using an independent samples  $t$ -test was engagement. No significant difference was found between faculty advisor perceptions ( $M = 17.53$ ,  $SD = 3.08$ ) and student perceptions ( $M = 17.85$ ,  $SD = 5.16$ ;  $t(226) = -.62$ ,  $p = .54$ ).

**RQ1.f:** What are the differences between perceptions of STEM advisors versus social science advisors on relationship constructs and success factors?

An independent samples  $t$ -test was employed to compare the differences in perceptions for faculty advisors in STEM fields and faculty advisors in social science fields on the three relationship constructs and three success factors; this also includes a split of the first construct into positive and negative. An independent samples  $t$ -test was conducted for each construct.

**Relationship Constructs.** There was no significant difference between STEM faculty perceptions of positive advisor attributes and characteristics ( $M = 58.43$ ,  $SD = 4.55$ ) and social science faculty perceptions ( $M = 57.78$ ,  $SD = 4.66$ ;  $t(131) = .56$ ,  $p = .58$  two-tailed). There was however a significant difference between STEM faculty perceptions of negative advisor attributes and characteristics ( $M = 8.97$ ,  $SD = 2.33$ ) and social science faculty perceptions ( $M = 13.00$ ,  $SD = 1.69$ ;  $t(134) = -7.38$ ,  $p = .000$  two-tailed).

The independent samples  $t$ -test conducted to measure differences in perceptions of advisor roles and functions showed on average, STEM faculty perceptions were higher ( $M = 76.14$ ,  $SD = 6.75$ ) than social science faculty perceptions ( $M = 74.35$ ,  $SD = 8.44$ ). This difference was not significant however,  $t(125) = .98$ ,  $p = .34$  two-tailed. When measuring perceptions of the relationship construct items, there was also no significant difference found

between STEM faculty advisors ( $M = 58.65$ ,  $SD = 6.67$ ) and social science faculty ( $M = 56.56$ ,  $SD = 6.63$ ),  $t(133) = 1.24$ ,  $p = .22$  two-tailed.

**Success Factor Constructs.** Perceptions of the first success factor construct, academic success, were measured for both groups of faculty advisors. An independent samples  $t$ -test found no significant difference between STEM faculty ( $M = 38.64$ ,  $SD = 3.62$ ) and social science faculty ( $M = 37.39$ ,  $SD = 4.63$ ),  $t(133) = 1.31$ ,  $p = .19$  two-tailed. There was also no significant difference found between STEM faculty perceptions ( $M = 50.15$ ,  $SD = 4.25$ ) and social science faculty perceptions ( $M = 49.32$ ,  $SD = 6.04$ ;  $t(134) = .75$ ,  $p = .46$  two-tailed) on the professional socialization construct. The final success factor item, which was measured using an independent samples  $t$ -test was engagement. No significant difference was found between STEM faculty advisor perceptions ( $M = 17.74$ ,  $SD = 3.02$ ) and social science faculty perceptions ( $M = 16.89$ ,  $SD = 3.50$ ;  $t(128) = 1.09$ ,  $p = .28$ ).

**RQ1.g:** What are the differences between the perceptions of STEM students versus social science students on relationship constructs and success factors?

Data was analyzed to compare the differences in perceptions for students in STEM and social science fields on the three relationship constructs and three success factors. A total of seven independent samples  $t$ -tests were conducted, which includes a split of the first construct into positive and negative attributes and characteristics.

**Relationship Constructs.** There was no significant difference between STEM student perceptions of positive advisor attributes and characteristics ( $M = 56.62$ ,  $SD = 8.94$ ) and social science student perceptions ( $M = 57.17$ ,  $SD = 10.16$ ;  $t(128) = -.30$ ,  $p = .76$  two-tailed). There was also no significant difference between STEM student perceptions of negative advisor

attributes and characteristics ( $M = 9.73$ ,  $SD = 3.32$ ) and social science student perceptions ( $M = 10.32$ ,  $SD = 4.26$ ;  $t(125) = -.82$ ,  $p = .41$  two-tailed).

The independent samples  $t$ -test conducted to measure differences in perceptions of advisor roles and functions showed on average, STEM student perceptions were higher ( $M = 72.30$ ,  $SD = 13.60$ ) than social science student perceptions ( $M = 71.33$ ,  $SD = 14.46$ ). This difference was not significant however,  $t(123) = .33$ ,  $p = .75$  two-tailed. There was also no significant difference found when measuring perceptions of the relationship construct items between STEM students ( $M = 59.89$ ,  $SD = 9.99$ ) and social science students ( $M = 60.06$ ,  $SD = 12.34$ ),  $t(129) = -.08$ ,  $p = .94$  two-tailed.

**Success Factor Constructs.** Perceptions of the first success factor construct, academic success, were measured for STEM students and social science students. An independent samples  $t$ -test found no significant difference between STEM students ( $M = 37.10$ ,  $SD = 5.75$ ) and social science students ( $M = 37.74$ ,  $SD = 6.22$ ),  $t(129) = -.55$ ,  $p = .58$  two-tailed. No significant difference was found between STEM student perceptions ( $M = 46.60$ ,  $SD = 8.12$ ) and social science student perceptions ( $M = 45.97$ ,  $SD = 11.01$ ;  $t(128) = .35$ ,  $p = .72$  two-tailed) on the professional socialization construct. The final success factor item, which was measured using an independent samples  $t$ -test was engagement. No significant difference was found between STEM student perceptions ( $M = 18.38$ ,  $SD = 34.97$ ) and social science student perceptions ( $M = 17.26$ ,  $SD = 5.69$ ;  $t(125) = 1.07$ ,  $p = .29$ ).

**RQ2:** How does the faculty advisor/doctoral student relationship differ for faculty and students in the first year, second year to candidacy, and post-candidacy within and across disciplines?

Data analysis indicated some differences between perspectives of faculty advisors and students in their first year, second year to candidacy, and post-candidacy. Specific findings,

which demonstrate differences and similarities, are reported under each sub-question. These findings provide greater detail of differences between groups.

**RQ2.a:** What are student perceptions of the advisor/advisee relationship during the first year?

**Attributes and Characteristics.** First year students overall reported positive perceptions of various aspects of the advisor/advisee relationship. Survey items used to measure perceptions were on a Likert-type scale where 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree (see Appendix C). Items measuring positive and negative attributes and characteristics demonstrated overall positive perceptions of advisors; results included high scores on positive items, and lower scores on negative items. The three items with the highest ratings were, “honest”,  $M = 4.81$ ,  $SD = .40$ , “professional”,  $M = 4.75$ ,  $SD = .44$ , and “helpful”,  $M = 4.72$ ,  $SD = .46$ . The survey items measuring attributes and characteristics deemed to be more negative, which received the highest scores, indicating more agreement, were, “businesslike”,  $M = 3.45$ ,  $SD = 1.26$ , and “negative”,  $M = 1.93$ ,  $SD = 1.14$ . Details of all responses on items measuring perceptions of attributes and characteristics from first year students can be seen in Table 15.

Table 15

*Mean Scores and Standard Deviations of First Year Student Perceptions of Advisor Attributes and Characteristics*

<b>Item</b>	<b>n</b>	<b>M</b>	<b>SD</b>
<b>Accessible</b>	33	4.58	.87
<b>Helpful</b>	32	4.72	.46
<b>Socializing</b>	32	4.09	1.06
<b>Caring</b>	32	4.41	.76
<b>Interested</b>	32	4.41	.71

<b>Friendly</b>	32	4.50	.80
<b>Professional</b>	32	4.75	.44
<b>Collegial</b>	32	4.47	.76
<b>Supportive</b>	32	4.44	.76
<b>Honest</b>	32	4.81	.40
<b>Positive</b>	32	4.47	.67
<b>Respectful</b>	32	4.63	.61
<b>Encouraging</b>	32	4.19	1.23
<b>Negative</b>	30	1.93	1.14
<b>Businesslike</b>	31	3.45	1.26
<b>Disinterested</b>	31	1.61	.88
<b>Inaccessible</b>	31	1.74	1.15
<b>Unhelpful</b>	31	1.55	.77

**Behaviors.** Responses to survey items which produced lower mean scores for first year students centered on dealing with and discussing conflicts. Lower mean scores were identified for four items including, “major professors are very open about discussing conflict in the major professor/advisee relationship”,  $M = 3.88$ ,  $SD = .96$ , “it is easy to discuss personal problems with a major professor”,  $M = 3.64$ ,  $SD = 1.17$ , “it is easy to discuss interpersonal conflicts with a major professor”,  $M = 3.67$ ,  $SD = 1.14$ , and “it is easy to discuss professional interpersonal conflicts with a major professor”,  $M = 3.85$ ,  $SD = .95$ . These scores indicate a more neutral perception from students on this aspect of the advisor/advisee relationship. Details of these items and other items measuring perceptions of the advisor/advisee relationship can be found in Table 16.

Table 16

*Mean Scores and Standard Deviations of First Year Student Perceptions of Advisor Behaviors*

<b>Item</b>	<b>Serves as a mentor for their advisees</b>	<b>Mentors through being a role model</b>	<b>Mentors through setting standards</b>	<b>Mentors through helping students fulfill their potential</b>	<b>Works in partnership with their advisees on projects where both are equally contributing members</b>
<b>M</b>	4.64	4.58	4.52	4.48	4.42
<b>SD</b>	0.55	0.71	0.67	0.76	0.75
<b>n</b>	33	33	33	33	33
<b>Item</b>	<b>Conflict between major professors and advisees should be dealt with openly</b>	<b>Working through conflict with a major professor strengthens the major professor/advisee relationship</b>	<b>Major professors are very open about discussing conflict in the major professor/advisee relationship</b>	<b>It is easy to discuss personal problems with a major professor</b>	<b>It is easy to discuss interpersonal conflicts with a major professor</b>
<b>M</b>	4.15	4.18	3.88	3.64	3.67
<b>SD</b>	0.87	0.85	0.96	1.17	1.14
<b>n</b>	33	33	33	33	33
<b>Item</b>	<b>It is easy to discuss professional problems with a major professor</b>	<b>It is easy to discuss professional interpersonal conflicts with a major professor</b>	<b>A major professor should have regularly scheduled meetings with their advisee</b>	<b>A major professor should meet with their advisee frequently (e.g. weekly)</b>	<b>A major professor should initiate meetings with their advisee</b>
<b>M</b>	4.09	3.85	4.42	4.42	4.09
<b>SD</b>	0.98	0.97	0.75	0.71	0.77
<b>n</b>	33	33	33	33	33

Items in Table 16 also highlight perceptions of first year students regarding meeting with their advisor. High scores on survey items demonstrate the importance first year students see in having regularly scheduled meetings with their advisor. This is a reflection of the relationship, and these items can also be related to academic success for these students.

**RQ2.b:** What are student perceptions of the advisor/advisee relationship in the second year to candidacy?

Survey results from students in their second year to candidacy provided an overall positive view of the advisor/advisee relationship. Analysis of descriptive statistics provided insight into how students in this phase of their program perceive various aspects of the advisor/advisee relationship. All survey items used to measure these perceptions can be found in Appendix C.

**Attributes and Characteristics.** The three items measuring perceptions of advisor attributes and characteristics with the highest scores, indicating strong agreement by students, were, “helpful”,  $M = 4.5$ ,  $SD = .81$ , “supportive”,  $M = 4.48$ ,  $SD = .89$ , and “honest”,  $M = 4.46$ ,  $SD = .84$ . Items measuring attributes thought to be less positive received average lower scores, indicating student’s disagreement that these are qualities of an advisor. These included, “unhelpful”,  $M = 1.48$ ,  $SD = .75$ , “inaccessible”,  $M = 1.74$ ,  $SD = .98$ , and “disinterested”,  $M = 1.78$ ,  $SD = 1.06$ . Details of all responses from items measuring perceptions of attributes and characteristics can be found in Table 17.

Table 17

*Mean Scores and Standard Deviations of Second Year to Candidacy Student Perceptions of Advisor Attributes and Characteristics*

<b>Item</b>	<b>n</b>	<b>M</b>	<b>SD</b>
<b>Accessible</b>	46	4.26	.91
<b>Helpful</b>	46	4.50	.81
<b>Socializing</b>	46	3.93	1.10
<b>Caring</b>	46	4.26	.85
<b>Interested</b>	46	4.30	.84
<b>Friendly</b>	46	4.35	.90
<b>Professional</b>	46	4.43	.86
<b>Collegial</b>	45	4.38	.86
<b>Supportive</b>	46	4.48	.89
<b>Honest</b>	46	4.46	.84
<b>Positive</b>	46	4.33	.97
<b>Respectful</b>	46	4.39	1.06
<b>Encouraging</b>	46	4.28	.98
<b>Negative</b>	46	1.80	1.05
<b>Businesslike</b>	46	3.09	1.17
<b>Disinterested</b>	45	1.78	1.06
<b>Inaccessible</b>	46	1.74	.98
<b>Unhelpful</b>	46	1.48	.75

**Roles and Functions.** Perceptions of the roles and functions of an advisor overall also had high mean scores, indicating student agreement with survey items. However, a few items

received lower than average scores, when comparing to the larger group of items for this construct. The first of these items included, “conducts annual reviews of advisees academic progress”,  $M = 3.57$ ,  $SD = 1.36$ . The mean score for this variable indicates annual reviews of student progress may not be a common occurrence in all advisor/advisee relationships. This item also had slightly higher variance indicating this may differ from student to student or across disciplines.

Other items with lower than average mean scores included items measuring perceptions of the advisor role in preparing students for careers after graduation, assisting in networking with other professionals, and supporting and encouraging student involvement. These items not only reflect perceptions of the roles and functions of an advisor, but also perceptions of the advisor role in students’ professional development and encouragement, both which are success factors.

Details of these items can be found in Table 18.

Table 18

*Mean Scores and Standard Deviations of Second Year to Candidacy Student Perceptions of Advisor Roles and Functions*

<b>Item</b>	<b>Assesses individual needs</b>	<b>Supports advisees progress by providing clear direction and feedback</b>	<b>Helps advisees find dissertation projects</b>	<b>Helps advisees become independent in their ability to plan, conduct, and execute research projects</b>
<b>M</b>	4.11	4.15	4.17	4.22
<b>SD</b>	0.92	1.01	1.04	0.87
<b>n</b>	46	46	46	46

<b>Item</b>	<b>Discusses program requirements including coursework, dissertation progress, comprehensive exams, and career goals</b>	<b>Conducts annual reviews of advisees academic progress</b>	<b>Helps advisees develop professional skills</b>	<b>Helps advisees learn intellectual behaviors appropriate to their discipline</b>
<b>M</b>	4.13	3.57	4.22	4.39
<b>SD</b>	1	1.36	0.87	0.74
<b>n</b>	46	46	46	46

<b>Item</b>	<b>Prepares advisees for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae</b>	<b>Encourages advisees to attend scholarly and professional conferences and meetings</b>	<b>Encourages advisees to present at scholarly and professional conferences and meetings</b>	<b>Collaborates with advisees in publishing research in their discipline</b>	<b>Assists advisees in networking with other professionals in their field</b>
<b>M</b>	3.87	4.11	4.11	4.15	3.8
<b>SD</b>	1.33	1.23	1.16	1.11	1.24
<b>n</b>	46	46	46	46	46

<b>Item</b>	<b>Encourages advisees to get involved in departmental groups and activities</b>	<b>Encourages advisees to get involved in campus groups and activities outside of the department</b>	<b>Supports advisees involvement in departmental groups and activities</b>	<b>Supports advisees involvement in campus groups and activities outside of the department</b>	<b>Prompts advisees engagement less than student peers of advisees prompt engagement</b>
<b>M</b>	3.74	3.28	3.83	3.37	3.28
<b>SD</b>	1.34	1.38	1.25	1.4	1.18
<b>n</b>	46	46	46	46	43

**RQ2.c:** What are student perceptions of the advisor/advisee relationship post-candidacy?

Analysis of descriptive statistics for survey results of students who are post-candidacy produced interesting results. Although many perceptions were positive, a large number of mean scores were in the lower to middle range. This indicates some lack of agreeance with certain actions of advisors.

**Attributes and Characteristics.** Analysis of items measuring perceptions of advisor attributes and characteristics were overall positive. The two items for which students showed the most agreeance were, “friendly”,  $M = 4.43$ ,  $SD = .88$ , and “accessible”,  $M = 4.37$ ,  $SD = 1.05$ . Lower scores, demonstrating less agreeance, were given for negative attributes. The negative attribute or characteristic most strongly agreed with was “businesslike”,  $M = 2.78$ ,  $SD = 1.45$ . Details for all descriptive statistics of responses to items measuring perceptions of attributes and characteristics can be found in Table 19.

Table 19

*Mean Scores and Standard Deviations of Post-Candidacy Student Perceptions of Advisor Attributes and Characteristics*

<b>Item</b>	<b>n</b>	<b>M</b>	<b>SD</b>
<b>Accessible</b>	54	4.37	1.05
<b>Helpful</b>	54	4.35	.99
<b>Socializing</b>	54	4.07	.99
<b>Caring</b>	54	4.15	1.09
<b>Interested</b>	54	4.41	.81
<b>Friendly</b>	54	4.43	.88
<b>Professional</b>	54	4.26	.99
<b>Collegial</b>	54	4.28	.96

<b>Supportive</b>	54	4.20	1.16
<b>Honest</b>	54	4.35	.97
<b>Positive</b>	54	4.17	1.11
<b>Respectful</b>	54	4.33	1.06
<b>Encouraging</b>	54	4.26	1.12
<b>Negative</b>	54	1.94	.98
<b>Businesslike</b>	54	2.78	1.45
<b>Disinterested</b>	54	1.63	.96
<b>Inaccessible</b>	54	1.70	1.14
<b>Unhelpful</b>	54	1.69	.99

**Roles and Functions.** Student perceptions of advisor roles and functions came in across the board as more neutral, rather than strongly agreeing or strongly disagreeing. Items which fell more towards the neutral range based on their mean scores were, “encourages advisees to get involved in campus groups and activities outside of the department”,  $M = 3.13$ ,  $SD = 1.35$ , “supports advisees involvement in campus groups and activities outside of the department”,  $M = 3.33$ ,  $SD = 1.10$ , “conducts annual reviews of advisees academic progress”,  $M = 3.7$ ,  $SD = 1.41$ , and “assists advisees in networking with other professionals in their field”,  $M = 3.79$ ,  $SD = 1.15$ . These mean scores may demonstrate more individual differences in the advisor/advisee relationship across the board for students at this stage of their program. Details on perceptions of roles and functions of an advisor can be found in Table 20.

Table 20

*Mean Scores and Standard Deviations of Post-Candidacy Student Perceptions of Advisor Roles and Functions*

<b>Item</b>	<b>Assesses individual needs</b>	<b>Supports advisees progress by providing clear direction and feedback</b>	<b>Helps advisees find dissertation projects</b>	<b>Helps advisees become independent in their ability to plan, conduct, and execute research projects</b>
<b>M</b>	3.87	3.85	4.22	4.24
<b>SD</b>	1.17	1.28	1.04	1.03
<b>n</b>	54	54	54	54

  

<b>Item</b>	<b>Discusses program requirements including coursework, dissertation progress, comprehensive exams, and career goals</b>	<b>Conducts annual reviews of advisees academic progress</b>	<b>Helps advisees develop professional skills</b>	<b>Helps advisees learn intellectual behaviors appropriate to their discipline</b>
<b>M</b>	3.93	3.7	4.2	4.2
<b>SD</b>	1.23	1.41	0.94	0.94
<b>n</b>	54	54	54	54

Item	Prepares advisees for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae	Encourages advisees to attend scholarly and professional conferences and meetings	Encourages advisees to present at scholarly and professional conferences and meetings	Collaborates with advisees in publishing research in their discipline	Assists advisees in networking with other professionals in their field
<b>M</b>	3.87	4.35	4.4	4.2	3.79
<b>SD</b>	1.15	0.89	1.01	1.16	1.15
<b>n</b>	54	54	53	54	53

  

Item	Encourages advisees to get involved in departmental groups and activities	Encourages advisees to get involved in campus groups and activities outside of the department	Supports advisees involvement in departmental groups and activities	Supports advisees involvement in campus groups and activities outside of the department	Prompts advisees engagement less than student peers of advisees prompt engagement
<b>M</b>	3.61	3.13	3.67	3.33	3.15
<b>SD</b>	1.23	1.35	1.26	1.32	1.1
<b>n</b>	54	54	54	54	53

**Behaviors.** Many survey items which measured perceptions of the advisor/advisee relationship also resulted in more average mean scores for students who are post-candidacy. These items include, “it is easy to discuss personal problems with a major professor”,  $M = 3.3$ ,  $SD = 1.34$ , “it is easy to discuss interpersonal conflicts with a major professor”,  $M = 3.26$ ,  $SD = 1.28$ , and “working through conflict with a major professor strengthens the major professor/advisee relationship”,  $M = 3.81$ ,  $SD = 1.18$ . Survey items related to mentoring resulted in higher scores demonstrating more agreeance. Details of perceptions of the advisor/advisee relationship can be found in Table 21.

Table 21

*Mean Scores and Standard Deviations of Post-Candidacy Student Perceptions of Advisor Behaviors*

<b>Item</b>	<b>Serves as a mentor for their advisees</b>	<b>Mentors through being a role model</b>	<b>Mentors through setting standards</b>	<b>Mentors through helping students fulfill their potential</b>	<b>Works in partnership with their advisees on projects where both are equally contributing members</b>
<b>M</b>	4.33	3.96	4.06	4.13	3.87
<b>SD</b>	1.01	1.15	1.09	1.08	1.24
<b>n</b>	54	54	54	54	54
<b>Item</b>	<b>Conflict between major professors and advisees should be dealt with openly</b>	<b>Working through conflict with a major professor strengthens the major professor/advisee relationship</b>	<b>Major professors are very open about discussing conflict in the major professor/advisee relationship</b>	<b>It is easy to discuss personal problems with a major professor</b>	<b>It is easy to discuss interpersonal conflicts with a major professor</b>
<b>M</b>	4.02	3.81	3.48	3.3	3.26
<b>SD</b>	1.09	1.18	1.24	1.34	1.28
<b>n</b>	54	54	54	54	54
<b>Item</b>	<b>It is easy to discuss professional problems with a major professor</b>	<b>It is easy to discuss professional interpersonal conflicts with a major professor</b>	<b>A major professor should have regularly scheduled meetings with their advisee</b>	<b>A major professor should meet with their advisee frequently (e.g. weekly)</b>	<b>A major professor should initiate meetings with their advisee</b>
<b>M</b>	3.93	3.74	4.63	4.33	3.94
<b>SD</b>	1.13	1.08	0.78	0.97	1.12
<b>n</b>	54	54	54	54	54

**RQ2.d:** What are the differences between the perceptions of first year students and faculty?

Independent samples *t*-tests were conducted to compare the differences in perceptions for first year students and faculty advisors on the three relationship constructs and three success factors. A total of seven constructs were measured; this includes a split of the first construct into positive and negative. An independent samples *t*-test was conducted for each construct.

**Relationship Constructs.** There was no significant difference between faculty perceptions of positive advisor attributes and characteristics ( $M = 58.07, SD = 4.75$ ) and first year student perceptions ( $M = 58.44, SD = 6.96; t(175) = -.29, p = .78$  two-tailed). There was also no significant difference between faculty perceptions of negative advisor attributes and characteristics ( $M = 8.97, SD = 2.31$ ) and first year students' perceptions ( $M = 10.37, SD = 4.09; t(32) = -1.81, p = .08$  two-tailed).

The independent samples *t*-test conducted to measure differences in perceptions of advisor roles and functions showed on average, faculty perceptions were lower ( $M = 75.90, SD = 6.92$ ) than first year student perceptions ( $M = 77.06, SD = 11.34$ ). This difference was not significant however,  $t(36) = -.56, p = .58$  two-tailed. The test measuring perceptions of the relationship construct found there was a significant difference though between faculty ( $M = 58.36, SD = 6.67$ ) and first year students ( $M = 63.03, SD = 8.62, t(42) = -2.91, p = .006$  two-tailed).

**Success Factor Constructs.** Perceptions of the success factor construct, academic success, were measured for faculty and first year students in order to determine differences. An independent samples *t*-test found no significant difference between faculty ( $M = 38.50, SD = 3.80$ ) and first year students ( $M = 38.64, SD = 4.70, t(43) = -.16, p = .87$  two-tailed). No significant difference was found between faculty perceptions ( $M = 50.13, SD = 4.49$ ) and first

year student perceptions ( $M = 49.03$ ,  $SD = 6.33$ ;  $t(40) = .94$ ,  $p = .35$  two-tailed) on the professional socialization construct. A significant difference was found however between faculty advisor perceptions ( $M = 17.53$ ,  $SD = 3.08$ ) and first year student perceptions ( $M = 20.56$ ,  $SD = 3.83$ ;  $t(41) = -4.17$ ,  $p = .000$ ) when using independent samples t-test to measure perceptions of the engagement construct.

**RQ2.e:** What are the differences between the perceptions of students in the second year to candidacy and faculty?

An independent samples  $t$ -test was conducted to compare the differences in perceptions for faculty advisors and students in their second year to candidacy on the three relationship constructs and three success factors. Two separate  $t$ -tests were conducted for the first relationship construct, attributes and characteristics. These tests were used in order to examine differences between positive and negative attributes and characteristics.

**Relationship Constructs.** No significant difference was found between faculty perceptions of positive advisor attributes and characteristics ( $M = 58.07$ ,  $SD = 4.75$ ) and second year to candidacy student perceptions ( $M = 56.71$ ,  $SD = 9.12$ ;  $t(188) = 1.31$ ,  $p = .19$  two-tailed). There was however a significant difference between faculty perceptions of negative advisor attributes and characteristics ( $M = 8.97$ ,  $SD = 2.31$ ) and second year to candidacy student perceptions ( $M = 9.96$ ,  $SD = 3.30$ ;  $t(192) = -2.25$ ,  $p = .03$  two-tailed).

The independent samples  $t$ -test conducted to measure differences in perceptions of advisor roles and functions showed on average, faculty perceptions were higher ( $M = 75.90$ ,  $SD = 6.92$ ) than second year to candidacy student perceptions ( $M = 70.91$ ,  $SD = 14.31$ ). This difference was significant,  $t(172) = 3.06$ ,  $p = .003$  two-tailed. Evaluation of perceptions of the relationship construct items showed no significant difference between faculty advisors ( $M =$

58.36,  $SD = 6.67$ ) and second year to candidacy students ( $M = 58.96$ ,  $SD = 10.62$ ),  $t(181) = -.45$ ,  $p = .66$  two-tailed.

**Success Factor Constructs.** The independent samples  $t$ -test, which measured perceptions of the first success factor construct, academic success, were measured for both groups. The test found a significant difference between faculty ( $M = 38.50$ ,  $SD = 3.80$ ) and second year to candidacy students ( $M = 36.89$ ,  $SD = 5.68$ ),  $t(181) = 2.17$ ,  $p = .03$  two-tailed. A significant difference was also found between faculty perceptions ( $M = 50.13$ ,  $SD = 4.49$ ) and second year to candidacy student perceptions ( $M = 45.61$ ,  $SD = 9.69$ ;  $t(184) = 4.30$ ,  $p = .000$  two-tailed) on the professional socialization construct. The final success factor item, which was measured using an independent samples  $t$ -test was engagement. No significant difference was found between faculty advisor perceptions ( $M = 17.53$ ,  $SD = 3.08$ ) and second year to candidacy student perceptions ( $M = 17.62$ ,  $SD = 5.21$ ;  $t(176) = -.15$ ,  $p = .88$ ).

**RQ2.f:** What are the differences between the perceptions of students post-candidacy and faculty?

Independent samples  $t$ -tests were used to compare the differences in perceptions for faculty advisors and students who are post-candidacy on the three relationship constructs and three success factors. A total of seven constructs, including a split of the first construct into positive and negative were measured. A separate analysis was conducted for each.

**Relationship Constructs.** A significant difference was found between faculty perceptions of positive advisor attributes and characteristics ( $M = 58.07$ ,  $SD = 4.75$ ) and post-candidacy student perceptions ( $M = 55.63$ ,  $SD = 10.40$ ;  $t(197) = 2.27$ ,  $p = .03$  two-tailed). There was however no significant difference between faculty perceptions of negative advisor attributes

and characteristics ( $M = 8.97$ ,  $SD = 2.31$ ) and post-candidacy student perceptions ( $M = 9.74$ ,  $SD = 3.56$ ;  $t(201) = -1.79$ ,  $p = .07$  two-tailed).

The independent samples t-test conducted to measure differences in perceptions of advisor roles and functions showed on average, faculty perceptions were higher ( $M = 75.90$ ,  $SD = 6.92$ ) than post-candidacy student perceptions ( $M = 69.63$ ,  $SD = 16.02$ ). This difference was significant,  $t(180) = 3.70$ ,  $p = .000$  two-tailed. However, when measuring perceptions of the relationship behavior construct items, no significant difference was found between faculty advisors ( $M = 58.36$ ,  $SD = 6.67$ ) and post-candidacy students ( $M = 58.80$ ,  $SD = 11.41$ ),  $t(189) = -.33$ ,  $p = .74$  two-tailed.

**Success Factor Constructs.** Perceptions of the first success factor construct, academic success, were measured for both groups of faculty advisors. An independent samples t-test found a significant difference between faculty ( $M = 38.50$ ,  $SD = 3.80$ ) and post-candidacy students ( $M = 36.72$ ,  $SD = 46.57$ ),  $t(189) = 2.33$ ,  $p = .02$  two-tailed. A significant difference was also found between faculty perceptions ( $M = 50.13$ ,  $SD = 4.49$ ) and post-candidacy student perceptions ( $M = 45.44$ ,  $SD = 9.44$ ;  $t(190) = 4.64$ ,  $p = .000$  two-tailed) on the professional socialization construct. The final success factor item, which was measured using an independent samples t-test was engagement. No significant difference was found between faculty advisor perceptions ( $M = 17.53$ ,  $SD = 3.08$ ) and post-candidacy student perceptions ( $M = 16.85$ ,  $SD = 5.34$ ;  $t(186) = 1.10$ ,  $p = .27$ ).

**RQ2.g:** What are the differences between the perceptions of STEM students versus social science students in each of the three phases?

Analysis of variance (ANOVA) was used to measure differences in perceptions of STEM students and social science students in the first year, second year to candidacy, and post-

candidacy stages. An ANOVA was chosen in order to measure the differences for students in each discipline, at each stage, for each of the construct items; attributes and characteristics (positive and negative), roles and functions, relationship behaviors, academic success, professional socialization, and engagement. Post-hoc tests were conducted on student status, but could not be utilized to determine differences between disciplines because there are fewer than three groups (Field, 2013).

**Relationship and Success Factor Constructs.** There was a non-significant main effect of discipline and status on perceptions of positive attributes and characteristics of an advisor,  $F(2, 123) = .826, p = .440, R^2 = .026$ , between all groups. A significant interaction effect was found for discipline and status for first year student perceptions of negative attributes and characteristics of an advisor,  $F(2, 121) = 13.828, p < .001, partial \eta^2 = .186$ . Bonferroni post hoc tests revealed that perceptions of students post-candidacy ( $M = 12.85, SD = 3.88$ ) was significantly different than first-year students,  $p = .002$ , and second year to candidacy students,  $p < .001, R^2 = .298$ .

There was a significant interaction effect was found for discipline and status on perceptions of advisor roles and functions for all groups,  $F(2, 118) = 5.264, p = .006, partial \eta^2 = .082$ . REGWQ post-hoc tests revealed there was a statistically significant difference between perceptions of first-year students ( $M = 57.10, SD = 12.97$ ) and second year to candidacy ( $M = 70.91, SD = 14.31$ ) and post-candidacy students ( $M = 69.60, SD = 16.18$ ), at the alpha .05 level,  $R^2 = .216$ .

There was a non-significant main effect of discipline and status on perceptions of relationship behaviors of an advisor,  $F(2, 125) = .050, p = .952, R^2 = .032$ , and for the role of the advisor in academic success for all groups,  $F(2, 125) = .405, p = .668, R^2 = .030$ .

The ANOVA conducted to measure perceptions of the advisor role in professional socialization revealed a non-significant effect,  $F(2, 123) = 1.200, p = .305, R^2 = .122$ . Post-hoc test were not used however because the Levene's test of homogeneity of variance was violated (.033) and the between subjects effect was not significant. The final construct resulted in a non-significant main effect of discipline and status on perceptions of the advisor role in student engagement for all groups,  $F(2, 120) = .023, p = .977, R^2 = .098$ .

The ANOVAs revealed differences between groups for each construct item. In order to understand more specific difference, descriptive statics were also calculated. Details of descriptive statistics for each construct can be seen in Table 22.

Table 22

*Mean Scores and Standard Deviations of STEM and Social Science Students in the First Year, Second Year to Candidacy and Post-Candidacy for all Constructs*

**Positive Attributes and Characteristics**

<b>Discipline</b>	<b>Status</b>	<b>M</b>	<b>SD</b>	<b>n</b>
<b>STEM</b>	<b>First Year</b>	58.9167	6.52031	24
	<b>Second Year</b>	57.2188	8.92526	32
	<b>Post-Candidacy</b>	54.9231	10.01153	39
	<b>Total</b>	56.7053	8.93579	95
<b>Social Science</b>	<b>First Year</b>	56.8571	9.11827	7
	<b>Second Year</b>	55.4615	9.82866	13
	<b>Post-Candidacy</b>	57.9286	11.80264	14
	<b>Total</b>	56.7647	10.31345	34
<b>Total</b>	<b>First Year</b>	58.4516	7.07031	31
	<b>Second Year</b>	56.7111	9.11697	45
	<b>Post-Candidacy</b>	55.7170	10.48144	53

<b>Total</b>	56.7209	9.27697	129
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### Negative Attributes and Characteristics

<b>Discipline</b>	<b>Status</b>	<b>M</b>	<b>SD</b>	<b>n</b>
<b>STEM</b>	<b>First Year</b>	9.5217	3.35572	23
	<b>Second Year</b>	9.5312	3.19258	32
	<b>Post-Candidacy</b>	14.2051	2.81144	39
	<b>Total</b>	11.4681	3.82887	94
<b>Social Science</b>	<b>First Year</b>	12.6667	5.60952	6
	<b>Second Year</b>	11.0000	3.43996	13
	<b>Post-Candidacy</b>	9.0714	4.02806	14
	<b>Total</b>	10.4848	4.22138	33
<b>Total</b>	<b>First Year</b>	10.1724	4.01843	29
	<b>Second Year</b>	9.9556	3.29570	45
	<b>Post-Candidacy</b>	12.8491	3.87991	53
	<b>Total</b>	11.2126	3.94130	127

### Roles and Functions

<b>Discipline</b>	<b>Status</b>	<b>M</b>	<b>SD</b>	<b>n</b>
<b>STEM</b>	<b>First Year</b>	52.2083	7.39553	24
	<b>Second Year</b>	71.1613	14.80562	31
	<b>Post-Candidacy</b>	69.8684	13.59485	38
	<b>Total</b>	65.7419	14.97309	93
<b>Social</b>	<b>First Year</b>	73.8571	14.41560	7

<b>Science</b>	<b>Second Year</b>	70.2500	13.55879	12
	<b>Post-Candidacy</b>	68.7500	23.30870	12
	<b>Total</b>	70.4839	17.66517	31
<b>Total</b>	<b>First Year</b>	57.0968	12.96754	31
	<b>Second Year</b>	70.9070	14.31419	43
	<b>Post-Candidacy</b>	69.6000	16.17885	50
	<b>Total</b>	66.9274	15.74965	124

### Relationship Behaviors

<b>Discipline</b>	<b>Status</b>	<b>M</b>	<b>SD</b>	<b>n</b>
<b>STEM</b>	<b>First Year</b>	63.3200	8.44946	25
	<b>Second Year</b>	59.1818	9.68715	33
	<b>Post-Candidacy</b>	58.6410	10.98920	39
	<b>Total</b>	60.0309	10.03894	97
<b>Social Science</b>	<b>First Year</b>	63.1429	9.97378	7
	<b>Second Year</b>	58.3846	13.12465	13
	<b>Post-Candidacy</b>	59.3571	13.31631	14
	<b>Total</b>	59.7647	12.40249	34
<b>Total</b>	<b>First Year</b>	63.2812	8.63315	32
	<b>Second Year</b>	58.9565	10.62064	46
	<b>Post-Candidacy</b>	58.8302	11.51877	53
	<b>Total</b>	59.9618	10.65285	131

**Academic Success**

<b>Discipline</b>	<b>Status</b>	<b>M</b>	<b>SD</b>	<b>n</b>
<b>STEM</b>	<b>First Year</b>	39.1200	4.52143	25
	<b>Second Year</b>	36.5758	5.59593	33
	<b>Post-Candidacy</b>	36.4359	6.41870	39
	<b>Total</b>	37.1753	5.76088	97
<b>Social Science</b>	<b>First Year</b>	37.7143	5.37631	7
	<b>Second Year</b>	37.6923	6.03303	13
	<b>Post-Candidacy</b>	37.6429	7.34436	14
	<b>Total</b>	37.6765	6.30402	34
<b>Total</b>	<b>First Year</b>	38.8125	4.66585	32
	<b>Second Year</b>	36.8913	5.67736	46
	<b>Post-Candidacy</b>	36.7547	6.62427	53
	<b>Total</b>	37.3053	5.88596	131

**Professional Socialization**

<b>Discipline</b>	<b>Status</b>	<b>M</b>	<b>SD</b>	<b>n</b>
<b>STEM</b>	<b>First Year</b>	49.4400	6.36448	25
	<b>Second Year</b>	46.0909	9.57002	33
	<b>Post-Candidacy</b>	41.0526	6.84163	38
	<b>Total</b>	44.9688	8.43483	96
<b>Social Science</b>	<b>First Year</b>	48.4286	6.65475	7
	<b>Second Year</b>	44.3846	10.26757	13

	<b>Post-Candidacy</b>	45.2308	14.20771	13
	<b>Total</b>	45.5758	11.22227	33
<b>Total</b>	<b>First Year</b>	49.2187	6.33340	32
	<b>Second Year</b>	45.6087	9.68728	46
	<b>Post-Candidacy</b>	42.1176	9.29870	51
	<b>Total</b>	45.1240	9.18474	129

### Engagement

<b>Discipline</b>	<b>Status</b>	<b>M</b>	<b>SD</b>	<b>n</b>
<b>STEM</b>	<b>First Year</b>	20.9167	3.74069	24
	<b>Second Year</b>	18.0968	4.97564	31
	<b>Post-Candidacy</b>	17.1795	5.20562	39
	<b>Total</b>	18.4362	4.98073	94
<b>Social Science</b>	<b>First Year</b>	19.4286	4.46681	7
	<b>Second Year</b>	16.4167	5.82250	12
	<b>Post-Candidacy</b>	16.0000	6.04152	13
	<b>Total</b>	16.9063	5.64749	32
<b>Total</b>	<b>First Year</b>	20.5806	3.88822	31
	<b>Second Year</b>	17.6279	5.20999	43
	<b>Post-Candidacy</b>	16.8846	5.38936	52
	<b>Total</b>	18.0476	5.17820	126

### Open-Ended Question Responses

Survey participants were given the opportunity to respond to an open-ended survey question. The purpose of this question was to allow participants to expand on any aspect of the

survey they felt necessary, and to offer thoughts participants did not believe they were able to give through answering the survey questions. Due to the small number of responses, only examples of participant responses were provided; no further analysis was conducted.

Of the 137 faculty who completed the survey, 30 wrote comments in the open response section. The most frequent topics of comments included: the survey did not address master's student advising (four comments); issues and items participants thought should have been included in the survey (eight comments); the difficulty of responding to some questions because advising is based on the needs of the student at the time (six comments); and disagreement about the definition of STEM (two comments).

Of the 131 students who completed the survey, only six provided comments in the open response section. One comment was about issues related to the assignment of an advisor, one was about the definition of STEM, and one was a first semester who student who believed their perceptions would change over time. One student also commented on the lack of university support for the social sciences, while two commented on the importance of the role of an advisor.

### **Synthesis**

The two primary research questions in this study focused on the perceptions of faculty and students on the three relationship constructs, and three success factor constructs. These questions help to identify major findings and key elements of this study. The following summaries and tables illustrate these findings.

**Research Question One.** The first primary research question states, "How do faculty perspectives of characteristics of the faculty advisor/doctoral student relationship differ from student perspectives within and across disciplines?". Analysis of faculty and student data on each construct, including positive and negative attributes and characteristics, roles and functions,

relationship behaviors, academic success, professional socialization, and engagement revealed a number of significant differences. Analysis was conducted for all faculty and all students in both disciplines and at all at all program phases. Further analysis by discipline and phases could not be conducted due to small populations in each group.

The independent samples *t*-tests used to measure the differences in perception of these groups resulted in significant differences for all but one of the constructs. The only construct which did not have a significant difference between groups was engagement. The number of significant differences emphasizes a central part of this study through highlighting the number of ways in which faculty and student perceptions differ. These differences extend to an array of aspects of the faculty advisor/advisee relationship, all of which are vital to student retention and success. Details of significant and non-significant differences of faculty and student perceptions can be seen in Table 23.

Table 23

*Significance Levels for Faculty and Student Perceptions for all Constructs*

	<b>Positive Attributes and Characteristics</b>	<b>Negative Attributes and Characteristics</b>	<b>Roles and Functions</b>	<b>Relationship Behaviors</b>
<b>Faculty M</b>	58.047	8.97	75.90	58.36
<b>Students M</b>	56.47	10.12	71.42	56.09
<b><i>P</i></b>	.05*	.001*	.001*	.027*
	<b>Academic Success</b>	<b>Professional Socialization</b>	<b>Engagement</b>	
<b>Faculty M</b>	38.50	50.13	17.53	
<b>Students M</b>	37.23	46.21	17.85	
<b><i>P</i></b>	.036*	.000*	.54	

*Note.* Asterisk (\*) indicates a significant difference between groups

**Research Question Two.** The second primary research question states, “How does the faculty advisor/doctoral student relationship differ for faculty and students in the first year, second year to candidacy, and post-candidacy within and across disciplines?”. To answer this question STEM and social science faculty and STEM and social science students in each phase of their program were surveyed to measure their perceptions on each of the six constructs; attributes and characteristics, roles and functions, relationship behaviors, academic success, professional socialization, and engagement. Analysis of faculty and student data exposed some differences and some similarities between groups. Due to the low numbers of STEM and social science students in each phase analysis was not conducted by discipline.

Examination of difference between faculty and students in each of the three phases resulted in diverse significant differences for each group. When measuring differences in perceptions of faculty and first year students, only two construct items resulted in significant differences, relationship behaviors and engagement. In both instances, faculty perceptions were higher, indicating more agreement with their behaviors and roles than students.

A larger number of significant differences were found between faculty and second year to candidacy students. When measuring differences in perceptions for these groups, four of the constructs demonstrated significant differences. These included differences in perceptions of negative advisor attributes and characteristics, roles and functions and the advisor role in academic success and professional socialization. Advisors agreed less with negative attributes and characteristics, however demonstrated stronger agreement with items related to their roles and functions, and role in academic success and professional socialization.

Lastly, significant differences were also found between faculty and post-candidacy student perceptions on four of the seven measured constructs. Significant differences were found

for perceptions of positive attributes and characteristics, roles and function and advisor role in academic success and professional socialization. As with the second year to candidacy students, advisors agreed more with statements related to their role in these aspects of the faculty advisor/advisee relationship.

Investigation of these differences is important in understanding what differences exist in the faculty advisor/advisee relationship at different stages throughout a student’s doctoral program. These findings demonstrate not only differences in perceptions between faculty and students, but illuminate the shift that occurs in the advisor/advisee relationship from the first year on. Perceptions of second year to candidacy students and post-candidacy students share more similarities to each other than those of first year students. However, more differences exist between faculty and second year to candidacy students and faculty and post-candidacy students, than with faculty and first year students. Details of these differences can be seen in Table 24.

Table 24

*Significance Levels for Faculty and First Year Students, Second Year to Candidacy Students, and Post-Candidacy Students Perceptions for all Constructs*

	<b>Positive Attributes and Characteristics</b>	<b>Negative Attributes and Characteristics</b>	<b>Roles and Functions</b>	<b>Relationship Behaviors</b>
<b>Faculty M</b>	58.07	8.97	75.90	58.36
<b>1<sup>st</sup> Year Student M</b>	58.44	10.37	77.06	63.03
<b><i>p</i></b>	.78	.08	.58	.006*
<b>Faculty M</b>	58.07	8.97	75.90	58.36
<b>Second Year to Candidacy Student M</b>	56.71	9.96	70.91	58.96

<i>p</i>	.19	.03*	.003*	.66
<b>Faculty M</b>	58.07	8.97	75.90	58.36
<b>Post-Candidacy Student M</b>	55.63	9.74	69.63	58.80
<i>p</i>	.03*	.07	.000*	.74

	<b>Academic Success</b>	<b>Professional Socialization</b>	<b>Engagement</b>
<b>Faculty M</b>	38.50	50.13	17.53
<b>1<sup>st</sup> Year Student M</b>	38.64	49.03	20.56
<i>p</i>	.87	.35	.000*
<b>Faculty M</b>	38.50	50.13	17.53
<b>Second Year to Candidacy Student M</b>	36.89	45.61	17.62
<i>p</i>	.03*	.000*	.88
<b>Faculty M</b>	38.50	50.13	17.53
<b>Post-Candidacy Student M</b>	36.72	45.44	16.85
<i>p</i>	.02*	.000*	.27

*Note.* Asterisk (\*) indicates a significant difference between groups

## Chapter 5 - Discussion

Research in the area of doctoral student retention and success has highlighted several issues which require further exploration. These problems include low retention and completion rates, issues within the faculty advisor/doctoral student advisee relationship, and differing perceptions of the relationship between advisors and advisees (Barnes et al., 2010; Barnes & Austin, 2009; Council of Graduate Schools, 2008; Golde, 1998; Lovitts, 2001). Doctoral advisors play a critical role in the doctoral student experience, and can be instrumental in their success or failure (Barnes & Austin, 2009; Barnes et al., 2010; Girves & Wemmerus, 1988). The importance of this relationship, and the issues which stem from this relationship, have led to the development of this study.

This study has contributed to the current body of literature on this topic in a number of ways. The data collected provides an opportunity to identify perceptions of each group individually, and to compare responses between groups in order to identify differences in perceptions. This study highlighted key differences between two disciplines, STEM and social science, as well as it provided insight into how perceptions vary for students at different stages in their doctoral program; first year, second year to candidacy, and post-candidacy.

In this study faculty and student responses to survey items were analyzed to determine what perceptions were of the faculty advisor/advisee relationship. The development of this survey allowed for direct comparison between groups in regards to perceptions of particular aspects of the advisor/advisee relationship. Analysis of the data supported some findings from previous studies, and also identified perceptions which have not been addressed in previous research.

Specifically, comparison and identification of differences were assessed for six constructs. Students and faculty were asked to provide their perspectives of advisor attributes and characteristics, roles and functions, and relationship behaviors. Participants were also asked to answer questions which measured their perceptions of the advisor role in student academic success, professional socialization, and engagement. The following discussion highlights noteworthy responses and significant differences found between groups.

## **Discussion**

### **Attributes and Characteristics**

Previous research from the advisor perspective (Barnes & Austin, 2009) and the student perspective (Ferrer de Valero, 2001) helped to identify perspectives of faculty advisor attributes and characteristics, including friendly, professional, collegial, caring, accessible, honest, disinterested, and unhelpful. Results from this study indicated agreement with many of these characteristics, but highlighted differences in the perspectives of faculty and students, as well as between faculty in STEM and social science disciplines.

Students and advisors both identified three top positive attributes and characteristics they perceive a faculty advisor to possess; honest, helpful, and professional. Faculty also strongly identified the characteristic of respectful. These responses corroborate previous research on advisor perspectives (Barnes & Austin, 2009), but do not necessarily directly support findings from studies which focused on student views of advisor attributes and characteristics, which included descriptions such as mentoring, caring (Ferrer de Valero, 2001), inaccessible, and unhelpful (Barnes et al., 2010).

When examining differences in perceptions between faculty and students for all attributes and characteristics as a whole, significant differences were found regarding the positive and

negative attributes of an advisor. Faculty responses indicated more agreement with positive descriptors of advisor attributes and characteristics than students ( $p = .05$ ), whereas student responses showed more agreement with negative descriptors of advisor attributes and characteristics than faculty ( $p = .001$ ). Differences in perception of negative advisor attributes and characteristics were also present between social science and STEM faculty ( $p = .000$ ), and between second year to candidacy students and faculty ( $p = .03$ ).

One of the key points of interest within these findings is the difference between how positively or negatively a faculty advisor is viewed within the advisor/advisee relationship. Although students did strongly agree with many positive attributes and characteristics they perceive faculty advisors to have, the significant difference between faculty and student perceptions of positive and negative attributes and characteristics is of concern. Advisor characteristics influence, at least to some extent, students' overall attitudes about their doctoral experience (Barnes et al., 2010).

Perceptions of advisor characteristics can impact the nature of the relationship students have with their advisors, and can affect their ability to make progress toward their degrees (Barnes et al., 2010; Girves & Wemmerus, 1988). Research as shown students' positive or negative perceptions of their advisors' attributes and characteristics can be the cornerstone in the type of relationship they develop (Barnes et al., 2010). Therefore, researchers suggest that incongruent perceptions between advisors and students could result in delayed or stopped progress towards degree completion.

### **Roles and Functions**

Previous research has resulted in several views on the roles and functions of an advisor, which are often times conflicting (Barnes & Austin, 2009; Barnes et al., 2010; Golde & Dore,

2001; Lovitts, 2001; Nettles & Millett, 2006). Advising has been difficult to define due to the numerous roles and responsibilities of a doctoral advisor. Some definitions have been developed based on defined responsibilities within the job description for faculty; however a widely accepted definition has not been determined within higher education (Harding-DeKam et al., 2012).

Review of data collected from this study further proved the lack of congruence between perceptions of the roles and functions of an advisor for both student groups and faculty advisors. Multiple differences regarding the roles and functions of an advisor were found during data analysis. The highest ranked, indicating most agreement with, perceived roles and functions of an advisor from the student perspective included advisors encouraging students to present at and attend professional conferences and scholarly meetings, and helping students learn behaviors appropriate to their discipline. Faculty advisors on the other hand identified their most important role and function as helping students become independent in their ability to plan, conduct, and execute research projects. Conversely, the roles and functions which were least perceived by faculty was regarding their role in encouraging student involvement, specifically outside of the department.

Data analysis of all items measuring perceived roles and functions of an advisor demonstrated significant differences between multiple groups. Significant differences in perceptions of this construct were identified between all faculty and all students ( $p = .001$ ), between second year to candidacy students and faculty ( $p = .003$ ), post-candidacy students and faculty ( $p = .000$ ), and between students in their first year with students in their second year to candidacy ( $p = .006$ ) and post-candidacy ( $p = .006$ ). The number of differences identified

supports previous research, which has determined that doctoral students often find the expectations of their relationship with their advisor to be unclear (Foss & Foss, 2008).

Research has shown that doctoral students may enter the advisor/advisee relationship with expectations which are incongruent with the expectations an advisor has of themselves (Harding-DeKam et al., 2012). If expectations of the relationship, and specifically the roles and functions of an advisor are not explicitly discussed, there is no way to determine whether or not advisors and advisees have matching ideas of this aspect of their relationship. Failure to clearly outline the roles and functions of an advisor can strain relationships and possibly lead to student attrition (McCormack, 2005).

The differences in perceptions of faculty and students identified here are extremely important to understand. Recognition of these differences is a critical step towards more clearly defining the role of a faculty advisor. Understanding these differences can also open the door for further conversations between advisors and students regarding their expectations of the advisor/advisee relationship.

### **Relationship Behaviors**

Relationship behaviors include different types of behaviors and interactions which impact the nature of the advisor/advisee relationship (Barnes & Austin, 2009; Barnes et al., 2010). These behaviors and interactions can include acting as a mentor and advocate (Barnes & Austin, 2009), providing counseling and feedback (Spillett & Moisiejewicz, 2004), and providing other types of support and guidance throughout the stages of a doctoral program (Baird, 1995; Vilkinas, 2008). These behaviors, whether present or lacking, can set the tone of the advisor/advisee relationship. Research has determined the advisor/advisee relationship is one of

the most important relationships a student engages in throughout their doctoral program (Baird, 1995; Barnes & Austin, 2009; Girves & Wemmerus, 1988).

Data analysis revealed a lack of congruence between perceptions of different groups regarding the behaviors of an advisor, and the relationship between an advisor and advisee. Participants in this study were asked their perceptions of advisor behaviors such as serving as a mentor for advisees, mentoring through being a role model and mentoring by setting standards. Participants were also asked their perceptions of how advisors and advisees work in partnership on projects, deal with conflict, discuss personal and professional problems, and the frequency of meetings between advisors and advisees.

Key differences were identified through examining individual item responses of students and faculty. Students showed the most agreement with the statement that advisors should have regularly scheduled meetings with their advisees. Student responses also indicated the most difficult aspect of the relationship between an advisor and advisee is discussing personal conflicts within the advisor/advisee relationship. Faculty on the other hand placed more emphasis on their role as a mentor for their students, although their responses showed agreement with the difficulty in discussing conflict within the advisor/advisee relationship.

These findings emphasize the importance for students to meet with their advisors regularly. Navigating a doctoral program is a difficult task. The ability for students to regularly meet with their advisor can provide more consistent opportunities for feedback and guidance. Regular meetings may also help to strengthen the advisor/advisee relationship, which could in turn make dealing with conflict within the relationship easier for both parties.

Data analysis of the relationship behaviors construct also revealed significant differences between groups, including between faculty and students ( $p = .027$ ) and first year students and

faculty ( $p = .006$ ). The lack of significant difference found between second year to candidacy students and faculty, and post-candidacy students and faculty could indicate that over time the advisor/advisee relationship grows, and expectations of the relationship become clearer. This could also indicate that as advisors and advisees work together they become more open about discussing their relationship, expectations, and conflicts.

### **Academic Success**

Success has been defined as the ability of a student to complete their degree in a timely manner (Ferrer de Valero, 2001), although this is only one measure of academic success.

Academic success is an important part of the doctoral degree process, and has been found to be greatly impacted by interaction with a students' faculty advisor (Girves & Wemmerus, 1988; Sakurai et al., 2012). This study measured perceptions of the advisor role in academic success of doctoral students.

There were significant differences found when reviewing responses to individual items measuring these perceptions, and when looking at all items together. Data revealed students' perceptions that regularly scheduled meetings with their advisor are important. The ability to meet regularly with their faculty advisor gives them more opportunity to receive valuable feedback and guidance. Outside of aspects of the advisor/advisee relationship directly addressed in this study, other official responsibilities such as discussing coursework, completing programs of study (Barnes & Austin, 2009; Nettles & Millett, 2006), evaluating written and oral examinations, and directing theses and dissertations (Winston & Polkosnik, 1984) are also important for students to achieve academic success. Being able to meet with their faculty advisor regularly can provide more opportunity for discussion of coursework, degree progress, and completion of necessary paperwork such as programs of study.

Advisor perceptions of their role in the academic success of doctoral students revealed an emphasis on assessing individual needs, and supporting student progress through feedback. Advisors however did not perceive it as being their responsibility to initiate meetings with their advisees. This is an important aspect of the relationship which should be clearly discussed or outlined as part of departmental policies. For students who are first entering their program, having guidelines and information regarding how to navigate meetings with their advisor, and responsibilities of an advisor, would be beneficial.

Data analysis also showed significant differences between second year to candidacy students and faculty ( $p = .036$ ), and post-candidacy students and faculty ( $p = .02$ ) in regards to the advisor role in academic success. Faculty responses indicated more agreement with items relating to their actions and role in student academic success. This could be an indication that students become more independent throughout their program, and therefore do not see the advisor as being as much a part of this aspect of their doctoral process.

### **Professional Socialization**

Professional socialization is an important part of the doctoral student experience, and has been found to play a role in degree completion (Gardner, 2010a; Turner & Thompson, 1993; Weidman et al., 2001). Results of data collected on perceptions of the advisor role in professional socialization revealed similarities and differences between groups. “An advisor serves as a mentor” was the highest scored item for both students and faculty. This is an important finding from this study based on previous research.

The lack of distinction between the terms “advisor” and “mentor” has been a focus of research in this area. Within doctoral education research the terms “advisor” and “mentor” have regularly been used interchangeably. However, the definitions of these terms are conflicting; an

advisor is defined as acting in an official capacity outlined by their required job responsibilities, and a mentor is a person who develops a deeper relationship and provides guidance in a number of ways (Barnes & Austin, 2009; Nettles & Millett, 2006). Identification of the perceptions of faculty and students of an advisor serving as a mentor may help to clarify the broader role of a faculty advisor, outside of their documented job responsibilities. This is also important to professional socialization because mentoring is seen as a key part of students becoming socialized within their department, campus, and field (Gardner, 2010b).

Regarding other aspects of the advisor role in professional socialization, student and faculty responses both revealed less agreement with the perception that advisors help prepare students for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae. Considering faculty advisors are seen as an essential part of professional socialization for students (Gardner, 2010b), it is concerning this was not perceived as an important role of an advisor. This also leaves open the question of who is present to assist students with this aspect of their socialization and preparation for careers after graduation.

Analysis also revealed significant differences in perceptions of the advisor role in professional socialization for second year to candidacy students and faculty ( $p = .000$ ), and post-candidacy students and faculty ( $p = .000$ ). There was no significant difference found between first year students and faculty though. This may be due to the fact that professional socialization may not be as much of a concern for first year students, who are more focused on their entrance into the program, and not as much on their future professional life. According to Tinto's (1993) Graduate Student Persistence Theory, during the first stage of a student's program they are focused on establishing their membership in their academic community. As they transition into later stages they become more concerned with acquiring knowledge and skill related to research,

and focusing on their socialization to the department (Gardner & Barnes, 2007). The findings then may also be a strong indication that the faculty advisor/advisee relationship changes throughout the course of a student's program of study as the needs and focus of a student change.

### **Engagement**

Engagement is an important part of the doctoral student experience. Students who are more involved, and more connected to their university and department are more likely to persist. Engagement in professional organizations can also assist with socialization and networking (Gardner, 2005; Gardner & Barnes, 2007). As with all other aspects of the doctoral student experience, the faculty advisor plays an important role in student engagement through encouraging engagement in professional and student organizations (Gardner & Barnes, 2007). This study aimed to measure perceptions of the advisor role in doctoral student engagement in departmental and campus activities.

Both students and faculty indicated the faculty advisor does play a role in student engagement. Both groups had the overall lowest score, indicating the least amount of agreement, for the statement that advisors prompt student engagement less than peers of the student prompt engagement. This indicates students and faculty both see the advisor role in prompting engagement to be in line with the amount of encouragement and support received from peers regarding involvement. There was however a statistically significant difference between faculty and first year students ( $p = .000$ ) regarding the overall advisor role in student engagement.

Perceptions of faculty demonstrated more agreement with their role in encouraging and supporting engagement than student perceptions when measuring all roles in engagement as a group. Interestingly, students responded they perceived advisors to support student involvement in departmental groups and activities, whereas advisors stated they more so encouraged

involvement in departmental groups and activities. This raises the question whether students initially choose to get involved through their own interest, or through the suggestion of their faculty advisor.

The support for engagement in departmental groups and activities can be an important part of helping students feel connected (Gardner & Barnes, 2007), and with their socialization to the department (Gardner, 2008; Gardner, 2010b; Golde, 1998). This is an important finding because of the importance of student involvement is part of their success (Astin, 1984). If students do not feel encouraged or supported by their advisor to become involved, it may hinder their ability or desire to do so.

Another interesting finding is the support and encouragement for involvement in departmental groups and activities, rather than in campus wide organizations and activities. Engagement in activities and groups outside of a students' department can aid in their socialization, networking, and feeling of connectedness to their university outside of their department. This sense of belonging could aid in encouraging students to persist.

### **Limitations**

The completion of this study was not without limitations. Findings from this study should be interpreted while keeping the limitations of the study in mind. Limitations of the study included the time when the survey was deployed, the number of participants, limitations with analyses and lack of generalizability of results.

The survey used to collect data from participants was delivered during the first two weeks of November. This could have hampered participation due to the busy scheduled of participants during that time of year. This could be why less than half of the initial survey population completed the survey.

The low completion numbers for some groups also caused issues with analyzing collected data. The uneven number of participants in each group limited the statistical tests which could be used to discover differences between groups. This also limits how the differences which were discovered can be interpreted.

Lastly, there is an issue with the generalizability of results. Because only faculty and students in two disciplines at one university were surveyed, the results cannot be generalized to a larger population. Although the findings of this study offer good insights into perceptions of the faculty advisor/advisee relationship, it cannot be assumed these findings apply to other groups of people.

## **Implications**

### **Implications for Future Research**

Findings from this study allowed for identification of several important aspects of the faculty advisor/doctoral student advisee relationship from the perspective of both the advisor and students. Although results of this study provided significant information, it aided in identifying areas for future research. This includes further research of the advisor/advisee relationship including the roles of the advisee, examination of university and departmental policies and procedures which help to define the role of the advisor and the advisor/advisee relationship, and research using a national sample so findings may be generalized to a larger audience.

The majority of research related to doctoral student retention and advising has focused on advisor attributes, roles, and responsibilities. Little research has focused on the responsibilities of the student in the advisor/advisee relationship. This study has paved the way for further research in this area. Methods similar to those used in this study could be used to measure faculty advisor and doctoral student perceptions of the role of an advisee.

Further research into defined policies and procedures for faculty advisors is necessary. The discrepancies identified between groups in this study may be due in part to the lack of documentation outlining the roles and responsibilities of the advisor, and the advisor/advisee relationship. Research, which could lead to more formalized procedures, could improve the advisor/advisee relationship across disciplines, and potentially lead to higher completion rates and shorter time to degree completion.

Lastly, this study provides a model for future research in the field with a broader audience. Conducting research regarding perceptions of the faculty advisor/advisee relationship with a national sample would allow for generalization of findings. This would be extremely beneficial in identifying specific issues within the faculty advisor/advisee relationship, which exist across multiple disciplines and at multiple institutions.

### **Implications for Practice**

The outcomes of this study have created multiple implications for practitioners in the field. The differences in perceptions of faculty and students, and of groups in different disciplines have highlighted the need for more formal guidelines for the faculty advisor/doctoral student advisee relationship. The development of training for doctoral advisors could lead to a stronger advisor/advisee relationship.

According to previous research, most doctoral advisors advise in the same manner in which they were advised (Knox, Schlosser, Pruitt, & Hill, 2006). This practice only perpetuates the current problems which exist in the advisor advisee relationship. The mismatched perceptions identified in this study can lead to the development of guidelines for advisors. The findings have also emphasized the need for more open communication between advisors and advisees regarding their perceptions and expectations of the relationship.

The development of training and documented guidelines for faculty advisors could provide more opportunity to learn about different strategies to employ in within the advisor/advisee relationship. This could also allow for opportunities to brainstorm new approaches for working with students. Lastly, development of guidelines can limit the amount of guessing and make navigating the advisor/advisee relationship easier for both parties.

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# Appendix A - Institutional Review Board Approval Letter



University Research Compliance Office

TO: Linda Thurston  
SECSA  
17 Bluemont

FROM: Rick Scheidt, Chair   
Committee on Research Involving Human Subjects

DATE: 10/28/2015

RE: Proposal #7915.1, entitled "Relationship Factors Influencing Doctoral Student Retention and Success: An Exploratory Study of Faculty Advisor and Doctoral Student Perceptions."

A MINOR MODIFICATION OF PREVIOUSLY APPROVED PROPOSAL #7915, ENTITLED, "Relationship Factors Influencing Doctoral Student Retention and Success: An Exploratory Study of Faculty Advisor and Doctoral Student Perceptions"

The Committee on Research Involving Human Subjects at Kansas State University has approved the proposal identified above as a minor modification of a previously approved proposal, and has determined that it is exempt from further review. This exemption applies only to the most recent proposal currently on file with the IRB. Any additional changes affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Unanticipated adverse events or problems involving risk to subjects or to others must be reported immediately to the IRB Chair, and / or the URCO.

It is important that your human subjects project is consistent with submissions to funding/contract entities. It is your responsibility to initiate notification procedures to any funding/contract entity of changes in your project that affects the use of human subjects.

## **Appendix B - Faculty Survey**

Dissertation Faculty Survey

Major Professor/Advisee Roles and Relationship Survey

Welcome to the Major Professor/Advisee Roles and Relationship Survey. This study aims to explore the major professor/advisee relationship through examining the roles and functions of the major professor and various aspects of the major professor/advisee relationship. The goal of this study is to help advance research in this field and to gather valuable information which can help in improving major professor/advisee relationships. As a major professor I know you understand the importance of this relationship to the success of your students.

This research has been approved by the Kansas State University Institutional Review Board (IRB). Each participant in the study will be assigned a unique identification number by Qualtrics to assure confidentiality. All responses from this survey will be aggregated in order to maintain anonymity of all participants. Your responses will not be aligned with your name.

I greatly appreciate your participation in this study. The survey should take approximately 10-15 minutes of your time. By answering the questions you are providing your consent to participate in this study. Your responses should be based on your experience as a major professor. This is not meant to measure your opinion of ideal roles or relationships, but instead should be based on personal experience, observations, and discussions. If you have any questions you can direct them to the researcher at [ajfairbanks@ksu.edu](mailto:ajfairbanks@ksu.edu).

Q1 Instructions: The following terms are possible descriptors of a major professor. Thinking about your own experience as a major professor, please rate each descriptor on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor is:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Accessible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helpful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Socializing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collegial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supportive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Positive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Respectful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouraging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Negative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Businesslike	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disinterested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inaccessible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unhelpful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q2 Instructions: The following statements refer to roles and functions of a major professor. Thinking about your own experience as a major professor, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Assesses individual needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supports advisees progress by providing clear direction and feedback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helps advisees find dissertation projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helps advisees become independent in their ability to plan, conduct, and execute research projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discusses program requirements including coursework, dissertation progress, comprehensive exams, and career goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducts annual reviews of advisees academic progress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3 Instructions: The following statements refer to roles and functions of a major professor. Thinking about your own experience as a major professor, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Helps advisees develop professional skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helps advisees learn intellectual behaviors appropriate to their discipline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prepares advisees for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4 Instructions: The following statements refer to roles and functions of a major professor. Thinking about your own experience as a major professor, please rate each statement on a 5-point scale, with 5 = Almost Always, 4 = Frequently, 3 = Occasionally, 2 = Rarely, 1 = Never. In my experience, a major professor:

	5 = Almost Always, 4 = Frequently, 3 = Occasionally, 2 = Rarely, 1 = Never				
	Almost Always 5	Frequently 4	Occasionally 3	Rarely 2	Never 1
Encourages advisees to attend scholarly and professional conferences and meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encourages advisees to present at scholarly and professional conferences and meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaborates with advisees in publishing research in their discipline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assists advisees in networking with other professionals in their field	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5 Instructions: The following statements refer to roles and functions of a major professor. Thinking about your own experience as a major professor, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Encourages advisees to get involved in departmental groups and activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encourages advisees to get involved in campus groups and activities outside of the department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supports advisees involvement in departmental groups and activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supports advisees involvement in campus groups and activities outside of the department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prompts student engagement less than student peers of advisees prompt engagement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6 Instructions: The statements below refer to the major professor/advisee relationship. Thinking about your own experience as a major professor, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Serves as a mentor for their advisees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentors through being a role model	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentors through setting standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentors through helping advisees fulfill their potential	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7 Instructions: The statement below refers to the major professor/advisee relationship. Thinking about your own experience as a major professor, please rate the statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor:

5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree					
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Works in partnership with their advisees on projects where both are equally contributing members	<input type="radio"/>				

Q8 Instructions: The statements below refer to the major professor/advisee relationship. Thinking about your own experience as a major professor, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. Using your own experience rate these statements:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Conflict between major professors and advisees should be dealt with openly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working through conflict with a major professor strengthens the major professor/advisee relationship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Major professors are very open about discussing conflict in the major professor/advisee relationship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy for students to discuss personal problems with a major professor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy for students to discuss interpersonal conflicts with a major professor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy for students to discuss professional problems with a major professor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

It is easy for students to discuss professional interpersonal conflicts with a major professor	<input type="radio"/>				
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Q9 Instructions: The statements below refer to the major professor/advisee relationship. Thinking about your own experience as a major professor, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. Using your own experience rate these statements:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral	Disagree 2	Strongly Disagree 1
A major professor should have regularly scheduled meetings with their advisee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A major professor should meet with their advisee frequently (e.g. weekly)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A major professor should initiate meetings with their advisee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 Please indicate which gender you identify with:

- Male
- Female
- Transgender
- Other
- Prefer not to say

Q11 What is your racial/ethnic identity? (If you are of a multi-racial/multi-ethnic/multi-cultural identity, mark all that apply):

- Alaskan Native
- American Indian
- Asian/Asian American
- Black/African/African American
- Latino(a)/Chicano(a)/Hispanic
- Middle Eastern
- Native Hawaiian
- Pacific Islander
- White
- Prefer Not to Say
- Other \_\_\_\_\_

Q12 Please indicate your discipline: STEM (Chemistry, Physics, Agronomy, Mathematics, Biology, Animal Sciences, Computer Science, Mechanical and Nuclear Engineering, Electrical and Computer Engineering, Grain Science, Entomology, Civil Engineering, Chemical Engineering, Biochemistry) Social Science (Economics, Psychological Sciences, Statistics, History, Sociology, Geography)

- STEM
- Social Science

Q13 What year did you first serve as a major professor for a doctoral student?

- Before 1975
- 1976
- 1977
- 1978
- 1979
- 1980
- 1981
- 1982
- 1983
- 1984
- 1985
- 1986
- 1987
- 1988
- 1989
- 1990
- 1991
- 1992
- 1993
- 1994
- 1995
- 1996
- 1997
- 1998
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015

Q14 How many doctoral students do you currently serve as a major professor for?

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- More than 10

Q15 How were you matched with your advisees? (Please mark all that apply):

- Advisees were assigned by department at the start of their program
- Advisee self-selected you as an advisor prior to start of their program
- Advisee self-selected you as an advisor after the start of their program
- Advisees were assigned by the department with the option to switch
- Other \_\_\_\_\_

Q16 This survey has asked you to reflect upon a number of issues related to the roles and functions of a major professor, and the major professor/advisee relationship using a multiple-choice format. If you wish to elaborate upon any of your survey responses, or provide any additional feedback, please do so in the space provided below.

Q17 Thank you for participating in this survey. If you have any questions or would like information on how to access the findings from this study, please feel free to contact Amanda Fairbanks at [ajfairbanks@ksu.edu](mailto:ajfairbanks@ksu.edu).

## **Appendix C - Student Survey**

Dissertation Student Survey

Major Professor/Advisee Roles and Relationship Survey

Welcome to the Major Professor/Advisee Roles and Relationship Survey. This study aims to explore the major professor/advisee relationship through examining the roles and functions of the major professor and various aspects of the major professor/advisee relationship. The goal of this study is to help advance research in this field and to gather valuable information which can help in improving major professor/advisee relationships. As a Ph.D. student I know you understand the importance of this relationship to your own success.

This research has been approved by the Kansas State University Institutional Review Board (IRB). Each participant in the study will be assigned a unique identification number by Qualtrics to assure confidentiality. All responses from this survey will be aggregated in order to maintain anonymity of all participants. Your responses will not be aligned with your name.

I greatly appreciate your participation in this study. The survey should take approximately 10-15 minutes of your time. By answering the questions you are providing your consent to participate in this study. Your responses should be based on your experience as a Ph.D. student. This is not meant to measure your opinion of ideal roles or relationships, but instead should be based on personal experience, observations, and discussions. If you have any questions you can direct them to the researcher at [ajfairbanks@ksu.edu](mailto:ajfairbanks@ksu.edu).

Q1 Instructions: The following terms are possible descriptors of a major professor. Thinking about your own experience, please rate each descriptor on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor is:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Accessible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helpful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Socializing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collegial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supportive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Positive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Respectful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouraging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Negative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Businesslike	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disinterested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inaccessible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unhelpful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q2 Instructions: The following statements refer to roles and functions of a major professor. Thinking about your own experience, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Assesses individual needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supports advisees progress by providing clear direction and feedback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helps advisees find dissertation projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helps advisees become independent in their ability to plan, conduct, and execute research projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discusses program requirements including coursework, dissertation progress, comprehensive exams, and career goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducts annual reviews of advisees academic progress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3 Instructions: The following statements refer to roles and functions of a major professor. Thinking about your own experience, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Helps advisees develop professional skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helps advisees learn intellectual behaviors appropriate to their discipline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prepares advisees for careers after graduation by allowing them to practice job talks, and helping them with their curriculum vitae	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4 Instructions: The following statements refer to roles and functions of a major professor. Thinking about your own experience, please rate each statement on a 5-point scale, with 5 = Almost Always, 4 = Frequently, 3 = Occasionally, 2 = Rarely, 1 = Never. In my experience, a major professor:

	5 = Almost Always, 4 = Frequently, 3 = Occasionally, 2 = Rarely, 1 = Never				
	Almost Always 5	Frequently 4	Occasionally 3	Rarely 2	Never 1
Encourages advisees to attend scholarly and professional conferences and meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encourages advisees to present at scholarly and professional conferences and meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaborates with advisees in publishing research in their discipline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assists advisees in networking with other professionals in their field	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5 Instructions: The following statements refer to roles and functions of a major professor. Thinking about your own experience, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Encourages advisees to get involved in departmental groups and activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encourages advisees to get involved in campus groups and activities outside of the department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supports advisees involvement in departmental groups and activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supports advisees involvement in campus groups and activities outside of the department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prompts advisees engagement less than student peers of advisees prompt engagement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6 Instructions: The statements below refer to the major professor/advisee relationship. Thinking about your own experience, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Serves as a mentor for their advisees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentors through being a role model	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentors through setting standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentors through helping students fulfill their potential	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7 Instructions: The statement below refers to the major professor/advisee relationship. Thinking about your own experience, please rate the statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. In my experience, a major professor:

5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree					
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Works in partnership with their advisees on projects where both are equally contributing members	<input type="radio"/>				

Q8 Instructions: The statements below refer to the major professor/advisee relationship. Thinking about your own experience, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. Using your own experience rate these statements:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Conflict between major professors and advisees should be dealt with openly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working through conflict with a major professor strengthens the major professor/advisee relationship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Major professors are very open about discussing conflict in the major professor/advisee relationship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy to discuss personal problems with a major professor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy to discuss interpersonal conflicts with a major professor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy to discuss professional problems with a major professor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy to discuss professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

interpersonal conflicts with a major professor					
--	--	--	--	--	--

Q9 Instructions: The statements below refer to the major professor/advisee relationship. Thinking about your own experience, please rate each statement on a 5-point scale, with 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. Using your own experience rate these statements:

	5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree				
	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
A major professor should have regularly scheduled meetings with their advisee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A major professor should meet with their advisee frequently (e.g. weekly)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A major professor should initiate meetings with their advisee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 Please indicate which gender you identify with:

- Male
- Female
- Transgender or Other
- Prefer not to say

Q11 Please indicate your student status:

- Kansas Resident
- Out-of-State
- International
- Prefer not to say

Q12 What is your racial/ethnic identity? (If you are of a multi-racial/multi-ethnic/multi-cultural identity, mark all that apply):

- Alaskan Native
- American Indian
- Asian/Asian American
- Black/African/African American
- Latino(a)/Chicano(a)/Hispanic
- Middle Eastern
- Native Hawaiian
- Pacific Islander
- White
- Prefer Not to Say
- Other \_\_\_\_\_

Q13 Please indicate your discipline: STEM (Chemistry, Physics, Agronomy, Mathematics, Biology, Animal Sciences, Computer Science, Mechanical and Nuclear Engineering, Electrical and Computer Engineering, Grain Science, Entomology, Civil Engineering, Chemical Engineering, Biochemistry ) Social Science (Economics, Psychological Sciences, Statistics, History, Sociology, Geography)

- STEM
- Social Science

Q14 What year did you first enter your Ph.D. program?

- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015

Q15 Please indicate which best describes your current student status:

- Doctoral student (still taking courses, has not yet completed/passed preliminary/qualifying exams)
- Doctoral candidate (has successfully completed/passed preliminary/qualifying exams and has been admitted to candidacy by the Graduate School)

Q16 How was your advisor selected?

- Assigned by department at the start of program
- Self-selected prior to start of program
- Self-selected after start of program
- Assigned by department with the option to switch
- Other \_\_\_\_\_

Q17 Do you intend to complete your degree?

- Yes
- No
- Unsure

Q18 Please indicate your current overall GPA:

- 3.50 - 4.0
- 3.00 - 3.49
- 2.50 - 2.99
- Less than 2.50

Q19 Please indicate what type of department and/or campus activities you are involved in (Please mark all that apply):

- Departmental graduate student group
- Campus wide graduate student group
- Greek organization
- University athletic team
- Intramural activities
- Campus religious organization
- I am not part of any departmental or campus organization
- Other \_\_\_\_\_

Q20 Please indicate which of the following best describes the frequency of your involvement in departmental or campus activities outside of your coursework or required duties for a campus/departmental job or position.

- 1 to 2 times a week
- 1 to 2 times a month
- 1 to 2 times a semester
- Never

Q21 This survey has asked you to reflect upon a number of issues related to the roles and functions of a major professor, and the major professor/advisee relationship using a multiple-choice format. If you wish to elaborate upon any of your survey responses, or provide any additional feedback, please do so in the space provided below.

Q22 Thank you for participating in this survey. If you have any questions or would like information on how to access the findings from this study please feel free to contact Amanda Fairbanks at [ajfairbanks@ksu.edu](mailto:ajfairbanks@ksu.edu).

## Appendix D - Survey E-Mails to Faculty

### **E-Mail 1:**

**Sent November 2<sup>nd</sup> at 8:30 a.m.**

Good morning,

I am writing to ask for your participation in a survey that I am conducting at Kansas State University. I am asking faculty who serve as major professors for doctoral students to reflect on their experiences working with advisees.

Your response to this survey is very important. This study aims to explore the major professor/advisee relationship through examining the roles and functions of the major professor and various aspects of the major professor/advisee relationship. The goal of this study is to help advance research in this field and to gather valuable information which can help in improving major professor/advisee relationships. As a major professor I know you understand the importance of this relationship to the success of your students.

This is a short survey and should only take approximately 10-15 minutes of your time. By answering the questions you are providing your consent to participate in this study.

This research has been approved by the Kansas State University Institutional Review Board (IRB). Each participant in the study will be assigned a unique identification number by Qualtrics to assure confidentiality. All responses from this survey will be aggregated in order to maintain anonymity of all participants. Your responses will not be aligned with your name. I would greatly appreciate your participation in this study.

Your responses should be based on your experience as a major professor. This is not meant to measure your opinion of ideal roles or relationships, but instead should be based on personal experience, observations, and discussions.

Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser) to access the survey.

Again, I appreciate your time and consideration in completing the survey. Thank you for participating in this study. It is only through the help of faculty like you that we can provide information which can advance research in field.

Sincerely,

Amanda Fairbanks

Ph.D. Candidate, Department of Special Education, Counseling and Student Affairs

Kansas State University

ajfairbanks@ksu.edu

**E-Mail 2:**  
**Sent November 9<sup>th</sup> at 9:00 a.m.**

Good morning,

I recently sent you an e-mail asking you to respond to a brief survey focusing on major professor/advisee relationships. Your responses to this survey are important and will help in advancing research in this field.

This is a short survey and should only take approximately 10-15 minutes of your time. By answering the questions you are providing your consent to participate in this study. If you have already completed the survey, I appreciate your participation. If you have not yet responded to the survey, I encourage you to take a few minutes and complete the survey.

Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser) to access the survey.

Your responses should be based on your experience as a major professor. This is not meant to measure your opinion of ideal roles or relationships, but instead should be based on personal experience, observations, and discussions.

Sincerely,  
Amanda Fairbanks  
Ph.D. Candidate, Department of Special Education, Counseling and Student Affairs  
Kansas State University  
ajfairbanks@ksu.edu

**E-Mail 3:**  
**Sent November 12<sup>th</sup> at 9:00 a.m.**

Good morning,

I know this is a very busy time for faculty, and I understand how valuable your spare time is during the semester. I am hoping you may be able to give about ten minutes of your time before Friday, November 13<sup>th</sup> to help me collect important information regarding the major professor/advisee relationship by completing a short survey.

If you have already completed the survey, I appreciate your participation. If you have not yet responded to the survey, I encourage you to take a few minutes and complete the survey. By answering the questions you are providing your consent to participate in this study.

Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser) to access the survey.

Thank you in advance for completing the survey. Your responses are important and I truly appreciate your willingness to participate.

Sincerely,  
Amanda Fairbanks  
Ph.D. Candidate, Department of Special Education, Counseling and Student Affairs  
Kansas State University  
ajfairbanks@ksu.edu

## Appendix E - Survey E-Mails to Students

### **E-Mail 1:**

**Sent November 2<sup>nd</sup> at 8:30 a.m.**

Good morning,

I am writing to ask for your participation in a survey that I am conducting at Kansas State University. I am asking doctoral students to reflect on their experiences working with major professors.

Your response to this survey is very important. This study aims to explore the major professor/advisee relationship through examining the roles and functions of the major professor and various aspects of the major professor/advisee relationship. The goal of this study is to help advance research in this field and to gather valuable information which can help in improving major professor/advisee relationships. As a doctoral student I know you understand the importance of this relationship to your own success.

This is a short survey and should only take approximately 10-15 minutes of your time. By answering the questions you are providing your consent to participate in this study.

This research has been approved by the Kansas State University Institutional Review Board (IRB). Each participant in the study will be assigned a unique identification number by Qualtrics to assure confidentiality. All responses from this survey will be aggregated in order to maintain anonymity of all participants. Your responses will not be aligned with your name. I would greatly appreciate your participation in this study.

Your responses should be based on your experience as a doctoral student. This is not meant to measure your opinion of ideal roles or relationships, but instead should be based on personal experience, observations, and discussions.

Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser) to access the survey.

Again, I appreciate your time and consideration in completing the survey. Thank you for participating in this study. It is only through the help of students like you that we can provide information which can advance research in field.

Sincerely,

Amanda Fairbanks

Ph.D. Candidate, Department of Special Education, Counseling and Student Affairs

Kansas State University

ajfairbanks@ksu.edu

**E-Mail 2:**  
**Sent November 9<sup>th</sup> at 9:00 a.m.**

Good morning,

I recently sent you an e-mail asking you to respond to a brief survey focusing on major professor/advisee relationships. Your responses to this survey are important and will help in advancing research in this field.

This is a short survey and should only take approximately 10-15 minutes of your time. By answering the questions you are providing your consent to participate in this study. If you have already completed the survey, I appreciate your participation. If you have not yet responded to the survey, I encourage you to take a few minutes and complete the survey.

Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser) to access the survey.

Your responses should be based on your experience as a doctoral student. This is not meant to measure your opinion of ideal roles or relationships, but instead should be based on personal experience, observations, and discussions.

Sincerely,  
Amanda Fairbanks  
Ph.D. Candidate, Department of Special Education, Counseling and Student Affairs  
Kansas State University  
ajfairbanks@ksu.edu

**E-Mail 3:**  
**Sent November 12<sup>th</sup> at 9:00 a.m.**

Good morning,

I know this is a very busy time for students, and I understand how valuable your spare time is during the semester. I am hoping you may be able to give about ten minutes of your time before Friday, November 13<sup>th</sup> to help me collect important information regarding the major professor/advisee relationship by completing a short survey.

If you have already completed the survey, I appreciate your participation. If you have not yet responded to the survey, I encourage you to take a few minutes and complete the survey. By answering the questions you are providing your consent to participate in this study.

Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser) to access the survey.

Thank you in advance for completing the survey. Your responses are important and I truly appreciate your willingness to participate.

Sincerely,  
Amanda Fairbanks  
Ph.D. Candidate, Department of Special Education, Counseling and Student Affairs  
Kansas State University  
ajfairbanks@ksu.edu