

**The Nature and Existence of Mentoring Relationships at the  
United States Air Force Academy**

by

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## Abstract

The practice of mentoring and the study of mentoring relationships continue to garner interest from business and industry, education and military organizations. The purpose of this study was to examine the nature and existence of mentoring relationship at the United States Air Force Academy.

United States Air Force Academy Cadets in their Junior (C2C) or Senior (C1C) year were invited to participate in a web-based, mentoring relationships survey. A total of 710 invitations were sent and 325 responses were collected; which resulted in a 45.7% response rate. Survey respondents were asked to provide demographic data, general mentoring data, as well as information regarding the single most influential mentor.

Of the 325 USAFA Cadets who completed the mentoring relationships survey, 190 (59%) reported experiencing one or more mentor relationship, prior to attending the USAFA. Two hundred and thirty-six (73%) respondents reported having had one or more mentor relationships while at the United States Air Force Academy. Survey participants were asked whether or not they had acted as a mentor to other USAFA Cadets. Over 79% of mentored USAFA Cadets had also

mentored someone else. However, only 11.4% of non-mentored USAFA Cadets had acted as a mentored to someone else at the United States Air Force Academy.

Pearson r correlation analysis was performed between 15 mentoring functions and key outcomes of mentoring. Significant relationships were found, at the .01 and .05 level between the key outcomes of “satisfaction,” “importance,” and “intent” with several of the mentoring functions, however r values for these items revealed either a small or no level. However, significant relationships were observed (at the .01 and .05 level) when the key outcomes of “personal” and “professional growth” were analyzed using Pearson r. Regarding “professional growth,” the r value with “enhanced military career” noted a “large” correlation ( $r = .56$ ). Additionally, “personal growth” noted at .48 r value for “emotional support.”

Linear regression analysis was performed on selected mentoring functions with “professional growth” and “personal growth” key outcomes that had significant relationships at the .01 level, which explained 28% and 30%, respectively. Regarding “personal growth,” the mentoring function which best described this key outcome was “emotional support” ( $\beta = .31, p < 0.01$ ). “Professional growth” was found to be best described by “enhanced military career” ( $\beta = .51, p < 0.01$ ).

The findings of this study suggest mentoring is a worthwhile endeavor, with many benefits. Further research, such as longitudinal and those studies focusing on readiness are suggested.

## Dedication

I dedicated my work to the men and women of the United States Armed Forces.

## Acknowledgements

I would like to thank God for being the rock in which I stand upon. To my committee chair, Dr. Allen B. Dyal, Dr. David C. DiRamio and Dr. Williford thank you for your guidance, direction and support. Drs. Wright and Esco, thank you for volunteering to offer your help and excellent advice. Wayne Glass, thank you for allowing me the use of Inquisite. Sophie Ryan, your statistical advice was great. To mom, dad and family, you have been such a motivation to me. You would be proud of me, even if I had never accomplished this milestone. Paula Lansdon, you have been such a great Christian mentor to me and I appreciate you so very much. My “Tuesday Morning Group,” thank you all for who you are. Drs. Reed and Nath, when I think of great mentors, you two are at the top of the list. To my boys, may I always be the mentor and role model you can look up to. Katie, thank you for being you—simply put, but it says it all about you. Tabitha and Diana, you are both a friend and peer mentor to me. David Womack, Leah Nielsen and Jeff Halterman, you believed in me, when very few did—my inspiration for pursuing a doctoral degree. Finally, to the Auburn faculty, staff and students who were part of this journey, I say...WAR EAGLE!!!

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## List of Abbreviations

C1C	Cadet 1 <sup>st</sup> Class—Senior
C2C	Cadet 2 <sup>nd</sup> Class--Junior
C3C	Cadet 3 <sup>rd</sup> Class—Sophomore
C4C	Cadet 4 <sup>th</sup> Class—Freshman
USAFA	United States Air Force
USMA	United States Military Academy
USNA	United States Naval Academy

## CHAPTER I

### INTRODUCTION

#### Introduction

The first documented case of mentoring comes from Homer's classic tale *The Odyssey* (1946). In the tale, Odysseus (King of Ithaca) must fight in the Trojan War. Odysseus asks his friend *Mentor* to teach and care for his son, Telemachus, in his stead. Mentor obliged King Odysseus and as Telemachus grew into adulthood, so too he grew in wisdom. As the story goes, following the end of the war King Odysseus has trouble making his way home, so Telemachus takes it upon himself to find his father. When Athena, the goddess of wisdom and knowledge, gets word of Telemachus' plan, she decides she must aid Telemachus. Athena does so, by possessing Mentor's body. As time passed, over ten years in fact, Telemachus eventually found his father, King Odysseus.

Though it wasn't specifically called mentoring, the practice of mentoring can be assumed to have been taking place since the beginning of time, most likely in an informal way. Formal mentoring can be observed in the various guilds and crafts of early times, the medieval times and even today. In the late 1970s and

early 1980s, business and industry saw the resurgence of mentoring as a formal practice (Burke, 1984; Torrance, 1984; Kram, 1985; Kram, 1988).

The mentoring relationship can take on many forms and serve a variety of purposes. The overall purpose of a mentoring relationship is for a more experienced individual to share their wisdom, knowledge, experiences and insights with an individual with less experience in a given area (Quinlan, 1999; Zackary, 2000; Mosley, Megginson & Pietri, 2001).

There are a number of benefits associated with mentoring (Kram, 1985) and these benefits are typically divided into psychosocial functions and career-related functions. Kram (1985) noted that the psychosocial mentoring functions are necessary to enhance the protégé's self-esteem and self-confidence. Career-related functions help the protégé prepare for advancement and to obtain promotions.

The military is an organization where junior officers and junior enlisted (protégé) could potentially benefit from being mentored by more senior officers and senior enlisted personnel (mentor). Unfortunately, there are limited scientific research studies investigating the prevalence and nature of mentoring in military populations. The number of scientific mentoring research studies further decreases when mentoring junior officers and junior enlisted personnel is the query.



Johnson et al. (2001) and Johnson et al. (2003) addressed the prevalence and nature of mentoring relationships at the United States Naval Academy.

Johnson et al. (2003) developed a survey, where it was confirmed that Naval Academy Midshipmen who were mentored were more satisfied with their United States Naval Academy experience and were more likely to mentor others.

Johnson et al. (2003) suggests subsequent research be conducted at the United States Military Academy and the United States Air Force Academy to extend this line of research. Therefore, the purpose of this study was to determine the nature and existence of mentoring relationships at the United States Air Force Academy.

### Statement of the Research Problem

The importance and benefits of mentoring has been well documented; both in the lay literature as well as the scientific literature. The scientific literature points to career success and career satisfaction, increased competence, higher salaries, promotions, overall well-being and confidence (Roche, 1979; Phillips-Jones, 1982; Torrance, 1984; Kram, 1985; Russell & Adams, 1997). Scientific studies addressing military populations in various environments also confirm the aforementioned.

The scientific literature also notes the importance of experiencing mentoring relationships as early as possible (Torrance, 1984; Johnson et al., 1999; and Johnson et al., 2003). Unfortunately, military mentoring studies of officers in training is limited to two Navy Medical Corps studies (Yoder, 1992; and Schwerin and Bourne, 1998) and a handful of military studies on varying groups. Steinberg & Foley (1999) conducted a survey study on Commissioned and Non-Commissioned Officers in the Army. Shaffer (2003) studied the military officers across the various services. Johnson et al., (1999) conducted a study of 691 retired Navy Admirals.

Johnson et al. (2001) and Johnson et al. (2003) addressed the prevalence and nature of mentoring relationships at the United States Naval Academy. These two studies are the only known studies to investigate the prevalence and nature of mentoring relationships of junior officers in training. Therefore, to extend this line of research; the purpose of this study was to determine the nature and existence of mentoring relationships at the United States Air Force Academy.

#### Purpose of the Study

The purpose of this study was to determine the nature and existence of mentoring relationships at the United States Air Force Academy.

## Statement of the Hypothesis

In order to answer the research questions, the following null hypothesis were formulated:

$H\emptyset_1$ : There is no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering the following dependent variables: (a) GPA, (b) class standing, (c) overall order of merit and (d) prior military service.

$H\emptyset_2$ : There is no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets on: (a) race, (b) age and (c) gender.

$H\emptyset_3$ : There is no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering the following variables: (a) satisfaction with the USAFA, (b) plans to make the military a career, (c) mentoring of others and (d) perception of the importance of mentoring.

## Limitations of the Study

This study had the following limitations:

1. Only USAFA Cadets enrolled in a single leadership studies course were included in this study.
2. Students' pre-USAFA mentoring experiences were varied.

3. It is presumed that participant responses on the mentoring survey reflect their honest perceptions and experiences.

### Delimitations of the Study

This study had the following delimitation:

1. Cadets attending the United States Air Force Academy are highly qualified high school graduates, of which only 1,200 are selected out of a pool of over 10,000 Congressionally-nominated applicants.

### Assumptions of the Study

This study was based on the following assumptions:

1. Findings from the study may be generalized to other Air Force Academy cadets.
2. Participants did not try to game or provide fake responses on the mentoring survey.

### Importance of the Study

This study is important for society as a whole, the social sciences community and United States Military Organizations/Department of Defense.

This study is of specific importance to the United States Air Force Academy and

extends the research efforts of Johnson et al. (2001) and Johnson et al. (2003).

This study is of particular importance to the United States Air Force Academy, as in recent years, the USAFA has been faced with at least two very trying events.

In the Spring of 2003, Time.com published a story outlining a female cadet's story of her 1999 alleged rape and the USAF Academy's institutional failure to perform its due diligence in investigating and punishing offenders. According to the female cadet, her report of rape wasn't fully investigated and instead she was accused of lying. Over 22 other female cadets made similar charges. Two years later, in 2005, the United States Air Force Academy was again shocked by allegations of religious intolerance.

These two events are not meant to disparage the United States Air Force Academy. These events are only noted to illustrate the unfortunate acts of a few individuals who had the effect of creating a toxic climate within the Air Force Academy during those times. As noted, this current study is of specific importance to the United States Air Force Academy, as it investigates the nature and existence of mentoring relationships within the Air Force Academy. Additionally, this study provides a litmus test to gain a general idea of the climate at the Air Force Academy, by way of survey respondent input regarding the overall level of satisfaction with the USAFA and their intent to make the military a career.

## Significance of the Problem

Limited published studies were found in the literature review which addressed the mentoring relationships of officers in training. Perhaps knowing the existence and nature of mentoring relationships of United States Air Force Academy Cadets might extend mentoring and mentoring relationships at the USAFA. Doing so, may increase a Cadet's level of satisfaction with the USAFA and may encourage them to make the military a career. Further, mentoring may impact GPA, class standing and overall order of merit, as well as cause Cadets to mentor others more frequently and view mentoring as being essential.

## Definition of Terms

**Mentoring:** a personal relationship in which a more experienced individual (mentor) acts as a guide, role model, and teacher to a less experienced individual (protégé). Mentors provide protégés with knowledge, advice, challenge, counsel, and support in their pursuit of becoming full members of a particular profession (Johnson, 2003).

**Mentor:** a more experienced individual who acts as a coach, teacher, guide, or role model in order to lead a less experienced individual (Gibson, Tesone & Buchalski, 2000) for the purpose of psychosocial or career-related enhancement (Kram, 1985).

**Protégé:** an individual of lesser experience, who relies upon the expertise of a mentor to help develop various desired characteristics. Ganser (1999) gives several synonyms for the individual being mentored: protégé, mentee, intern, student, apprentice, advisee or charge.

**United States Air Force Academy (USAFA):** Established in 1954, the United States Air Force Academy is located in Colorado Springs Colorado. The United States Air Force Academy offers a four-year program of instruction and experience designed to provide Cadets the knowledge and character essential for leadership, and the motivation to serve as Air Force career officers. Each cadet graduates with a bachelor of science degree and a commission as a second lieutenant in the Air Force.

**United States Naval Academy (USNA):** Established in 1845, the United States Naval Academy (Annapolis) is located in Annapolis, Maryland. The United States Naval Academy offers a four-year program of instruction and experience designed to provide Midshipmen the knowledge and character essential for leadership, and the motivation to serve as Navy and Marine Corp career officers. Each Midshipmen graduates with a bachelor of science degree and earns a commission in the United States Navy or United States Marine Corp.

**Cadet:** a classification of individual enrolled at the United States Air Force Academy. C1C (Cadet 1st Class—Senior), C2C (Cadet 2nd Class—Junior), C3C (Cadet 3rd Class—Sophomore) and C4C (Cadet 4th Class—Freshman) .

**Midshipmen:** a classification of individuals enrolled at the United States Naval Academy. Fourth Class Midshipmen (Freshmen) are the lowest ranking Midshipmen and are also referred to as "plebes," from the Latin "plebeian," the lowest class of Roman citizen. Third Class Midshipmen (Sophomores), Second Class Midshipmen (Juniors), and First Class Midshipmen (Seniors) round out the general USNA Midshipmen ranks.

**Dyadic Mentoring:** the traditional form of mentoring, where a single mentor and a single protégé work together to accomplish a desired outcome.

**Formal Mentoring:** a structured mentoring program facilitated by an organization, which results in the pairing of a mentor and protégé for a specified or desired outcome.

**Informal Mentoring:** a voluntary mentoring relationship where two individuals (mentor and protégé) decide to establish a relationship in order to mutually enhance each other's potential and or well-being, with regard to career advancement or other psychosocial dimensions.

**Peer Mentoring:** a form of mentoring relationship, where for all other purposes the individuals are equal/peers. Due to varying experiences and



opinions, peer mentoring tends to benefit both individuals involved in the mentoring relationship.

**Co-Mentoring:** in contrast to traditional dyadic mentoring relationship, where there is a single mentor and single protégé who makes up the mentoring relationship, co-mentoring involves multiple mentors for a single protégé. Co-mentoring is also known as team mentoring and matrix mentoring,

### Overview of Study

This study consists of five chapters in total. Chapter II provides review of relevant research literature in the area of mentoring and addresses the following areas: 1) The prevalence of mentoring 2) mentoring relationship types, 3) the benefits of mentoring relationships, 4) mentoring relationship initiation, 5) potential pitfalls to mentoring relationships, 6) Mentoring in business and education, and 7) mentoring and mentoring relationships in the military.

Chapter III addresses the study's methodology and employed the use of a mentoring relationships survey developed by Johnson (2003). The survey instrument was originally designed for the United States Naval Academy and permission to use and adjust items to reflect Air Force Academy Cadet understanding was obtained from Dr. Brad Johnson (Johnson, 2001 and Johnson, 2003). The mentoring relationship survey consists of 35 main questions, with

several sub-questions. Seven Hundred and ten United States Air Force Academy Cadets were invited to be survey participants and 325 USAFA Cadets participated (46% response rate).

Chapter IV of this study provides the survey participant responses and the analysis performed in order to address the research questions in relation to the nature and existence of mentoring relationship at the United States Air Force Academy.

This study concludes with Chapter V, where the analysis from Chapter IV is further scrutinized in order to flesh out relevant interpretations of these data. Additionally, Chapter V provides recommendations for the extension of this line of research.

## Chapter I—Summary

This chapter, Chapter I, provides a general introduction regarding the origins of mentoring and mentoring relationships. The introduction notes several noted mentoring studies, which are expanded and supplemented in Chapter II of this study.

The statement of research problem is presented. Noted is the limited number of research studies investigating military populations. Further emphasis is made to the lack of mentoring studies for junior Air Force personnel in training. Accordingly, the purpose of this study was to determine the nature and existence of mentoring relationships at the United States Air Force Academy.

To accomplish this study, the researchers formulated the following null hypotheses:

$H\emptyset_1$ : There is no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering the following dependent variables: (a) GPA, (b) class standing, (c) overall order of merit and (d) prior military service.

$H\emptyset_2$ : There is no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets on: (a) race, (b) age and (c) gender.

$H\emptyset_3$ : There is no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering the following

variables: (a) satisfaction with the USAFA, (b) plans to make the military a career, (c) mentoring of others and (d) perception of the importance of mentoring.

Limitations, delimitations and assumptions of this study were then noted. Additionally, the importance and implication of this study were illustrated by mentioning two recent events which have negatively impacted the United States Air Force Academy. Offered was this studies potential to generally determine the Air Force Academy's climate by way of determining survey respondent's level of satisfaction with the USAFA and their intent to make the military a career.

The significance of the study was then noted and key terms were defined. Finally, an overview of the study was provided, which notes this chapter (Chapter I), the review of literature in Chapter II, this study's methodology in Chapter III, analysis of survey data in Chapter IV, and the recommendations and study implications in Chapter V.

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

Regardless of when the practice of mentoring or mentoring relationships began, the purpose of mentoring is for a more experienced individual to coach, teach, guide or lead a less experienced individual (Gibson, Tesone & Buchalski, 2000). Ganser (1999) gives several synonyms for the individual being mentored: protégé, mentee, intern, student, apprentice, advisee or charge.

The purpose of this study was to determine the nature and existence of mentoring relationships at the United States Air Force Academy.

The prevalence of mentoring and mentoring relationships are evident. This mentoring literature review addresses the following areas: 1) The prevalence of mentoring 2) mentoring relationship types, 3) the benefits of mentoring relationships, 4) mentoring relationship initiation, 5) potential pitfalls to mentoring relationships, 6) Mentoring in business and education, and 7) mentoring and mentoring relationships in the military.

## The Prevalence of Mentoring Relationships

Mentoring and mentoring relationships are very common and a number of studies have been conducted, addressing the subject of mentoring. In several studies, over 50% of respondents indicated they performed the role of being a mentor. Additionally, many survey respondents indicated that they had two or more mentors in their career. McGuire (2007) compiled the data found in Table 1, which indicates the study methodology, sample size and response rate, percentage of mentors and protégés, as well as the number of mentors in their career.

Table 1. Previous studies that report over 50% of the samples responded they were Mentors and/or Protégés (McGuire, 2007).

<i>Studies (Methodology)</i>	<i>Sample Size (Response Rate)</i>	<i>Percentage Who Were Mentors</i>	<i>Percentage Who Were Protégés</i>	<i># of Mentors In A Career</i>
Roche; 1979 (Survey)	4,004 Executives (31%)	61	63	33% Had 2+
Reich; 1985 (Survey)	520 Executives (80%)	74	90	NR
Tepper; 1996 (Survey)	259 Mixed (NR)	54	NR	NR
Sandoval; 1996, (Survey)	324 Air Force (NR)	NR	NR	70% Had More Than One
Johnson et al.; 1999, (Survey)	1,350 Navy (57%)	NR	67	3 Mentors on Average
Steinberg & Foley; 1999 (Mixed)	8,591 Army (57%)	74 Senior 57 Junior	45 Senior 56 Junior	NR
Ragins & Scandura; 1999 (Survey)	275 Executives (23%)	54	68	2.3
Ragins, Cotton & Miller; 1999, (Survey)	1,162 Mixed (39%)	NR	52.8	NR
Steinberg & Nourizadeh; 2001 (Survey)	6,824 Army (NR)	NR	69	NR

Note: NR = Not reported. Studies are listed chronologically.

Roche (1979) surveyed 4,004 executives with a response rate of 31%. Sixty-one percent of respondents reported that they had been mentors and 63% indicated that they had been a protégé to someone. Additionally, 33% of survey respondents reported that they had two or more mentors in their career. Reich (1985) surveyed 520 executives with a response rate of 80%. Seventy-four percent of respondents reported that they had been mentors and 90% indicated that they had been a protégé to someone. No data was available to indicate how many mentors the survey respondents had in their career. In another study of executives, Ragins & Scandura (1999) surveyed 275 executives. Fifty-four percent of respondents indicated they had been mentored, 68% were protégés and 2.3 was the average number of mentors these individuals had throughout their career.

In a mixed subject study of 259 individuals, Tepper (1996) found that 54% of respondents had been a mentor to someone. However, this study did not identify the number of mentors someone had, nor did it indicate how many people had been protégés. Ragins, Cotton & Miller (1999) conducted a mixed subject survey of 1,162 individuals. Fifty-two percent (52.8%) of survey respondents indicated that they had been a protégé.

Regarding military studies, Sandoval (1996) surveyed 324 Air Force subjects. Seventy percent of survey respondents indicated that they had more than one mentor in the Air Force career. Johnson et al. (1999) surveyed 1,350 Navy

Midshipmen, of which 67% of responding subjects had been mentored. Additionally, the average number of mentors the subjects had in their short career was 3. In a larger study, Steinberg & Foley (1999) surveyed and interviewed 8,591 Army junior and senior commissioned and non-commissioned officers. Seventy-four percent of senior and 57% of junior commissioned and non-commissioned officers reported that they had performed the role of a mentor. 45% senior and 56% junior commissioned and non-commissioned officers noted being a protégé in their career. Another large study, by Steinberg & Nourizadeh (2001) of 6,824 Army personnel found that 69% of respondents had been mentored at some point in their Army career.

McGuire (2007) found several studies which indicate that once an individual is in a mentoring relationship, they are very likely to remain in the mentoring relationship for several years. Table 2 illustrates the various studies where mentoring relationship duration was reported.



Table 2. Previous findings indicate that informal mentoring relationships endure over several years with most averaging over three years in duration (McGuire, 2007).

<b>Studies (Methodology)</b>	<b>Sample Size (Response Rate)</b>	<b>Duration of Relationship (Yrs)</b>
Levinson et al.; 1978 (Interview)	40 Senior Managers (NR)	2-3; with the maximum being 8.
Reich; 1985 (Survey)	520 Executives (80%)	8
Kram; 1985 (Interview)	18 Pairs (NR)	3-6
Ragins & Scandura; 1999 (Survey)	275 Executives (23%)	4.1
Ragins, Cotton & Miller; 2000 (Survey)	1,162 Mixed (39%)	6.7

Note: NR = not reported. Studies are listed chronologically.

Levinson et al. (1978) studied 40 senior managers and found that a typical mentoring relationship lasted between 2 to 3 years, with 8 years being the longest mentoring relationship reported. Reich (1985) surveyed 520 executives, where 8 years was reported as being the typical mentoring relationship duration. Kram (1985) interviewed 18 mentoring pairs, where 3 to 6 years were reported as being the duration of the mentoring relationship. Ragins et al (1999) found 4.1 years as the mentoring relationship duration of the 275 executives surveyed. Ragins et al.

(2000), surveyed 1,162 individuals, where 6.7 years reported as being the average duration of mentoring relationships.

### Mentoring Relationship Types

The mentoring relationship can take on many forms and serve a variety of purposes. The overall purpose of a mentoring relationship is for a more experienced individual to share their wisdom, knowledge, experiences and insights with an individual with less experience in a given area (Quinlan, 1999; Zackary, 2000; Mosley, Megginson & Pietri, 2001). Kochan & Trimble (2000) offer collegial relationships, peer mentoring, peer supervision or peer coaching as other possible mentoring relationship types, which are beyond the traditional dyadic mentor/protégé make-up. Additionally, Mullen, Kochan & Funk (2000) offer group mentoring programs and/or mentoring teams as another possible way in which mentoring can take place.

Mentoring relationships are typically organized by whether they are formal or informal in nature and structure. A formal mentoring relationship is one where an organization identifies an individual to act as the mentor of an identified protégé (Gibb, 1999; Ragins et al., 2000). Accordingly, the pairing is made and the organization typically will provide the mentor and protégé with the guidance

necessary to initiate and fulfill the goals and objectives of the mentoring relationship.

Informal mentoring relationships are initiated by individuals, without the actions of an organization (Ragins et al., 2000). As Kram (1985) notes, informal mentoring relationships tend to be more friendly and intimate than formal mentoring relationships. In a survey study of 764 Alumni from a Midwestern University, (Chao, Waltz & Gardner, 1992) found that the majority of respondents indicated that their mentoring relationship(s) were informal in nature and the focus of the mentoring relationship addressed career-related functions. Additionally, Ragins et al., (1999) surveyed 1,162 journalists, social workers and engineers. The study confirmed the findings and focus of Chao et al. (1992).

Several studies confirm a preference for informal mentoring relationships. McGuire (2007) compiled a list of studies where informal mentoring was preferred and is illustrated in Table 3.

In a study of 223 Army Majors, Kolditz et al. (2001) found that informal mentoring was preferred. A study of 13,500 Army Officers, of various ranks, was conducted (ATDLP, 2001), where informal mentoring was the preferred mode of accomplishing mentoring. Additionally, Merriam (1983), Sorley (1988), and Noe (1988) confirm the Army studies with literature reviews indicating the preference for informal mentoring.

Table 3. Studies indicate which type of mentoring relationship was preferred (McGuire, 2007).

<b>Studies (Methodology)</b>	<b>Sample Size (Response Rate)</b>	<b>Which Mentoring Relationship Type is Preferred?</b>
Merriam; 1983 (Literature Review)	NA	Informal
Sorley; 1988 (Literature of Practice)	NA	Informal
Noe; 1988 (Literature Review)	NA	Informal
Kolditz et al.; 2001 (Mixed)	223 Army Officers: Majors (22%)	Informal
ATLDP; 2001 (Mixed)	13,500 Army Officers: Mixed Ranks (NR)	Informal

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Note: NR = not reported. Studies are listed chronologically.

### The Benefits of Mentoring Relationships

The benefits of a mentoring relationship are many and are often divided into career and psychosocial functions (Kram, 1985). These functions are illustrated in Table 4. Burke (1984) describes psychosocial function of mentoring to include counseling, encouragement, support, role-modeling, and collegial friendship. Kram (1985) expanded on Burke's (1984) findings and Johnson

(2003), Jacobi (1991), Newby & Heide (1992) confirm the psychosocial function of mentoring. Kram (1985) noted that the psychosocial mentoring functions are necessary to enhance the protégé's self-esteem and self-confidence. The psychosocial mentoring functions are accomplished by the mentoring acting as a role model to their protégé, providing counsel and friendship and creating an environment that is accepting and confirming.

Table 4. The mentoring functions that protégés receive from their mentors fall into two categories, psychosocial and career-related (Kram, 1985).

<b>Psychosocial Mentoring Functions: Enhance Protégé's Esteem and Confidence</b>	
Role Modeling	Counseling
Friendship	Acceptance and Confirmation
<b>Career Mentoring Functions: Help protégé Prepare for Advancement</b>	
Sponsor	Exposure and Visibility
Protection	Coaching
Challenging Assignments	

Kram (1985) describes the necessity of career mentoring functions, as helping the protégé prepare for advancement and to obtain promotions. The career mentoring functions are accomplished by the mentoring being a sponsor and coach to their mentor. Additionally, the mentor provides their protégé with exposure and visibility to various opportunities and challenging assignments, all the while providing them with necessary protection. Johnson (2001) and Johnson (2003),

expand on Kram's mentoring career functions to include accesses to information, sponsorship and exposure within the organization, promotion, protection, teaching, and coaching. These career functions act as mechanisms which enhance the protégé's career development and advancement.

The benefits of mentoring relationships are enjoyed by the protégé, mentor and organization (Allen, Eby, Poteet, Lentz, & Lima, 2004; Noe, 1988; Wanberg, Welsh, & Hezlett, 2003). Specifically, protégés benefit through the attainment of higher levels of personal and professional goals and via the development of greater intention to remain with the organization (Payne & Huffman, 2005). According to Allen et al. (2004), protégés experience decreased levels of stress as a result of being mentored.

Mentors benefit from mentoring relationships, through the fulfillment of career development tasks (Kram, 1983 and Kram, 1985). According to Wanberg et al. (2003), mentors benefit in their personal life via a sense of "giving back." According to Kram (1985), employee retention is greater with organizations which promote mentoring, both with mentors and protégés.

There is a great deal of information in the lay literature which sings the praises of mentoring. The majority of these articles conclude that mentoring is necessary for career success and career satisfaction. The scientific literature confirms the lay literature, where several studies have been conducted which

found greater career satisfaction, increased competence, higher salaries, promotions, overall well-being and confidence (Roche, 1979; Phillips-Jones, 1982; Torrance, 1984; Kram, 1985; Russell & Adams, 1997).

### The Potential Pitfalls of Mentoring Relationships

There is no question of the many benefits of mentoring relationships. However, some potential issues regarding mentoring relationships should not be overlooked. Special consideration should be given prior to the initiation of and during the entirety of the mentoring relationship. Barnett (2008) noted boundaries, roles, and multiple relationships as such issues which should be considered whenever a mentoring relationship is initiated. If such issues are not addressed and handled, conflict of interest and exploitation could result. Kitchener (1988) and Kitchener (1992) noted five ethical behaviors which should be practiced and include the following: beneficence (for the benefit of others), nonmaleficence (do no harm), fidelity (a truthful connection to a source or sources), autonomy (self-directing freedom and especially moral independence), and justice (conformity to truth, fact, or reason).

## Mentoring Relationship Initiation

Prior to reaping the benefits of a mentoring relationship and dealing with the issues which might hamper the mentoring relationship, the mentoring relationship must be initiated by the organization, the mentor or protégé. There are several factors that impact the nature by which a mentoring relationship is initiated. Byrne (1971) and Ragins (1997) state that individual characteristics and demographic similarities impact the initiation of mentoring relationships. Accordingly, Byrne et al. (1971) and Ragins et al. (1997), minorities (race, gender, age, etc.) may be most affected by such barriers of difference.

Turbin, Dougherty, & Lee (2002); O'Neill (2002) and Wanberg (2003) address race and diversity in mentoring relationships and how such factors might impact the initiation of mentoring relationships. They note the importance of these factors and emphasized their effect on the stages of initiation, cultivation, separation, and redefinition, as offered by Kram (1988).

Hu, Thomas, & Lance (2008) studied the intentions to initiate mentoring relationships and how race, proactivity, deprivation feelings, and relationship roles impact initiation of mentoring relationships. These authors found negative impressions and discomfort can result when “demographic dissimilarities” exist. They note, the majority of individuals prefer “race similar” mentoring relationships.



Regarding cross-gender mentoring relationships, Noe (1988), Ragins (1989) and Kram (1983) found that females were less likely to be mentored since there are barriers related to “male-dominated” career paths. McGuire and Reger (2003) seem to support these previous findings and support what they call feminist co-mentoring. The authors suggest traditional dyadic mentoring is steeped in masculine values, such as, competition, hierarchy and objectivity. In place of these masculine values, McGuire et al. (2003) stress feminist values such as cooperation, non-hierarchical relationships which focus on the familial, personal and emotional needs of protégés. The authors suggest such feminist co-mentoring could prove beneficial for underrepresented populations such as females and racial minorities.

Robinson (1999) McCauley & Van Velsor (2004) reported many men would rather not mentor females, noting a fear of having the mentoring relationship be misinterpreted as sexual. In addition to these findings, Ragins and McFarlin (1990) noted the disparity of acceptable venues where mentoring relationships might take place, outside the organizational confines, which are socially acceptable for a cross-gender dyad.

In contrast to the above studies, McGuire (2007) compiled a list of studies, where there were no difference in mentoring relationships. These studies are

illustrated in Table 5 and indicate the study methodology and related sample size and response rate.

Ragins & Cotton (1991) surveyed 510 research and development employees and found no perceived gender difference in mentoring relationships. No perceived gender differences in mentoring relationships were found by Schor (1997) who interviewed the employees of 20 presidents and vice-presidents of large insurance companies. In a study of state government first-line supervisors, Allen, Poteet, Russell & Dobbins (1997) found no gender difference. Baker, Hocevar & Johnson (2003) surveyed 568 Naval Academy Midshipmen, finding no gender difference. Finally, in a large study of 8,591 Army personnel, Steinberg & Foley (1999) were unable to find a gender difference in mentoring relationships.

Table 5. Most studies indicate that while there are more barriers to overcome for women, there is little or no gender difference in mentoring relationship experiences (McGuire, 2007).

<b>Studies (Methodology)</b>	<b>Sample Size (Response Rate)</b>	<b>Is there a Gender Difference in Mentoring Relationships?</b>
Ragins & Cotton; 1991 (Survey)	510 Research & Development Employees (58%)	No
Schor; 1997 (Interview)	20 Presidents & Vice President Employees from Large Insurance Companies (NR)	No
Allen, Poteet, Russell & Dobbins; 1997 (Survey)	607 First-line Supervisors in a State Government Job. (41.7%)	No
Steinberg & Foley; 1999 (Mixed)	8,591 Army Members (57%)	No
Baker, Hovevar & Johnson; 2003 (Survey)	568 Midshipmen from the U.S. Naval Academy (41.5%)	No

### Mentoring and Mentoring Relationship Studies in Business and Education

Business and industry often implement formal mentoring programs as a means to help early career professionals. In many cases, the mentor is the supervisor or within the chain of command of the protégé. Depending upon the mentor's position relative to the position of the protégé has a direct impact on the success of the mentoring relationship (Steinberg and Nourizadeh, 2001). If the mentor is the supervisor of the protégé, three issues may arise: 1) protégé reluctance to confide in mentor, 2) unfavorable perception of protégé by co-

workers—appearance of favoritism, and 3) bullying and deception by mentor/supervisor.

Steinberg (2001), Merriam (1983), Sorley (1988), Noe (1988), and Kolditz (2001) all found many businesses and educational institutions focus their mentoring efforts on informal mentoring relationships. In addition to informal mentoring relationships, many businesses have established formal mentoring relationship rules, which restrict supervisors and subordinates from attempting to develop a mentoring relationship.

In the case of Chao (2009) a formal mentoring relationship was developed as a means to mentor early career psychologists. In the study, 14 mentors and 10 protégés participated, which represented 47% of the population. Great care was taken in the matching of potential mentors to protégés. The experience/expertise of the mentors was determined and various demographic data was also obtained. These data were matched with the interests and demographics of the potential protégés. According to Chao (2009), protégé and mentor satisfaction was generally positive and several participants expressed an interest in continuing their mentoring relationship beyond the study duration.

The advisor/advisee relationship is a formal relationship, with the potential of performing mentoring functions. Wrench and Punyanunt (2004) examined interpersonal communication variables in the graduate student advisor/advisee

relationship. As noted by Kram (1985), the mentor provides the opportunity of the protégé to be developed psychosocially or benefit relative to career advancement. Depending on whether the protégé feels the mentor is competent and credible, will often determine the success of the mentoring relationship. Wrench (2004) found advisee perception of their advisor's competence accounted for 43% of the variance with regard to advisee cognitive learning and 39% represented the advisee's perception of the effectiveness of the advisor/advisee relationship.

Collins (1994) studied 430 social workers to determine if mentoring relationships really made a difference regarding career outcomes. Survey data was gathered to establish who had never been mentored, been a mentor and protégé, who was a mentor only or a protégé only. Results indicated that both mentors [ $F(1, 427) = 7.85, p < .01$ ] and protégé [ $F(1, 427) = 13.50, p < .001$ ] experiences significantly impacted career success. Additionally, mentor [ $F(1, 425) = 11.99, p < .001$ ] results for career satisfaction were significantly impacted by the mentoring relationships they experienced.

Pitney and Ehlers (2004) studied the mentoring process involved with undergraduate athletic training students. In their study, a total of 16 interviews were conducted on 13 athletic training students (protégés) and 3 other individuals (mentors). Interview participants were asked questions with regard to their ideal mentor, who could act as a mentor, who initiated the mentoring relationship(s), the

advantages of having a mentor, and what advice would they give to a potential mentor or protégé. Open-, axial-, and selective-coding were used in transcribing their data. Three main themes were concluded from their data analysis: mentoring pre-requisites, interpersonal foundations, and educational dimensions. The mentoring prerequisites included approachability, accessibility, and protégé initiative. Interpersonal foundations included attributes such as trust, personal relationship, and congruent values. Finally, educational dimensions contained the following sub-areas: facilitating knowledge and skill development, individualizing learning, and encouraging professional perspectives.

Darwin and Palmer (2009) noted the traditional modes of mentoring in higher education being informal mentoring and more formal planned programs where junior faculty are paired with a more senior faculty member, in order to accomplish the mentoring function and achieve specifically stated goals and objectives. Stressing these traditional dyadic mentoring relationships do little to enhance collaboration within the higher education community, the authors offer “mentoring circles” as an adjunct. According to Darwin (2009), mentoring circles are also known as group mentoring. In their study, twenty individuals participated in mentoring circles of 6 to 8 people involving eight, 2 hour sessions over a period of 6-months were. Following the six month mentoring circle period, participants were given a survey. When asked for their reason for participating, over 60% of

respondents indicated “career development,” followed by “invited” (15%), “improve mentoring skills” (11%), and “investigate methods for mentoring” (9%). When asked to indicate the perceived benefits of mentoring, pre-mentoring results showed “interacting with others/sharing experiences” as 26% of total responses. However, post-mentoring resulted in over 61% of total responses for the same measure. Finally, when study participants were asked to indicate measures of success of a mentoring program, 11% of pre-mentoring responses noted “new relationships” as a measure. Upon completion of 6-month mentoring circle program, over 27% of survey responses included “new relationships” as a measure of mentoring program success.

### Mentoring Relationship Studies in the Military

Mentoring studies targeting military environments strongly supports many of the findings where non-military populations were studied. Yoder (1992) studied mentoring in the Navy Nurse Service Corp, where Schwerin and Bourne (1998) addressed mentoring in the Navy Medical Service Corps.

Johnson et al. (1999) transcend military medical corps paradigm and studied retired Navy Admirals. Six hundred and ninety-one retired admirals were studied and indicated that mentoring is perceived to be an important and necessary aspect of a Naval officer’s career.

Steinberg & Foley (1999) conducted a survey study on Commissioned and Non-Commissioned Officers in the Army. Shaffer (2003) studied the military officers across the various services. McGuire (2007) studied the senior military officers.

In addition to the previously mentioned American military studies, Hu, Wang, Sun & Chen (2008) studied formal mentoring in Taiwan military academies. In this study, mentoring was found to be positively related to mentor satisfaction and participants' provision of career mentoring to their protégés. Hu et al. (2008) found that career mentoring was negatively related to freshmen's commitment to a military career, but found psychosocial mentoring was positively related to mentor satisfaction and leadership competency.

Missing from military studies is the effect and prevalence of mentoring of officers in training environments. Many studies confirm, to be successful, mentoring relationships should begin as soon as possible. Several studies indicate, as soon as an individual enters an organization, he/she should be part of a mentoring relationship (Kram, 1985; Jacobi, 1991; Newby & Heide, 1992).



Replicated studies...Naval Midshipmen:  
Johnson et al. (2001) and Johnson et al. (2003)

*Johnson et al. (2001)*

Johnson et al. (2001) and Johnson et al. (2003) addressed the prevalence and nature of mentoring relationships at the United States Naval Academy. Johnson et al. (2001) surveyed 576 United States Naval Academy Midshipmen Juniors. In their study, the authors reported that only 40% of survey respondents indicated having ever been mentored. Of those Naval Academy Midshipmen who were mentored, the majority reported their mentor was a senior military officer and 87% of the senior military officers were male. Further results of Johnson (2001) indicated mentoring relationships for Naval Academy Midshipmen were mutually initiated and lasted for several years. As noted by Kram (1985), Johnson (2001) found both career and psychosocial mentoring functions were present in the Naval Academy Midshipmen mentoring relationships. Finally, survey respondents indicated mentoring relationships were very important and rated their own mentoring relationship as being extremely positive.

*Johnson et al. (2003)*

Johnson et al. (2003) developed a survey, where it was confirmed that Naval Academy Midshipmen who were mentored were more satisfied with their United States Naval Academy experience and were more likely to mentor others.

Johnson (2003) randomly selected 1,368 Naval Academy Midshipmen to participate in the study. This number was derived, as 10 of 30 companies or 1/3 of the Naval Academy Midshipmen was desired. Five Hundred and sixty-eight usable surveys were completed, resulting in a 41.5% response rate. Demographic data from the sample was compared to the entire brigade of Naval Academy Midshipmen. Table 6, illustrates the comparison of the survey sample to the brigade population.

Table 6. Naval Academy mentoring relationships comparison of sample and brigade demographic characteristics (Johnson, 2003).

<i>Characteristic</i>	<i>Sample</i>	<i>Brigade</i>
Gender		
<i>Male</i>	83.5%	85%
<i>Female</i>	16.5%	15%
<i>Age (M)</i>	20	20.9
<i>Race</i>		
<i>European</i>	86%	81.3%
<i>Hispanic</i>	5.3%	7.5%
<i>African-American</i>	4.8%	6.1%
<i>Asian</i>	2.3%	4.3%
<i>Grade Point Average</i>	2.85	3.01
<i>Prior Military Service</i>	10%	12%
<i>Graduating Class</i>		
2000 ( <i>seniors</i> )	12%	23.3%
2001 ( <i>juniors</i> )	24%	23.2%
2002 ( <i>sophomores</i> )	26%	25.9%
2003 ( <i>freshmen</i> )	38%	27.6%

The survey designed by Johnson et al. (2003) was a double-sided, four page questionnaire. The survey represented questions from previous mentoring studies (Clark, Harden, & Johnson, 2000; Johnson et al., 1999; Johnson et al., 2001).

Naval Academy Psychology faculty members were provided a draft of the mentoring survey. Minor adjustments were made to the survey, as a result of the review and critique of the psychology faculty members. The resulting survey was presented to and subsequently approved by the United States Naval Academy

Office of Institutional Research. The following definition of mentoring was provided on the mentoring relationships survey:

*Mentoring is a personal relationship in which a more experienced individual acts as a guide, role model, and teacher to a less experienced protégé. Mentors provide protégés with knowledge, advice, challenge, counsel, and support in their pursuit of becoming full members of a particular profession.*

The survey developed and utilized by Johnson et al. (2003) consisted of a demographic section, which included the following questions: grade point average, class standing, and overall order of merit. Class standing is a measure of overall class rank at the United States Naval Academy. Additionally, overall order of merit is a cumulative measure including academic/military courses, physical education/athletic performance, and conduct.

Regarding the prevalence of mentoring relationships, Johnson (2003) found 57% of survey respondents had experienced one or more mentoring relationship. Forty-five percent of the survey respondents indicated experiencing one or more mentoring relationship during their time at the Naval Academy.

Performing Chi-square analysis showed a significant relationship between having a mentor at the Naval Academy and gender. Sixty-three percent of female Midshipmen reported being mentored, compared to only 42% of male survey respondents. When asked to indicate the gender of their Naval Academy mentor, 95% of male respondents reported having a male mentor compared to 54% of female respondents having a male mentor. Johnson (2003) anticipated

relationships between class, race and prior military service whenever survey respondents indicated having had a mentor. However, Chi-square analysis, found no significant relationships between mentor and non-mentored midshipmen with regard to class, race and prior military service.

Seventy-five percent of respondents not experiencing a mentoring relationship while at the United States Naval Academy noted that they *did not need a mentor*. Nearly fourteen percent (13.7%) of non-mentored Midshipmen respondents were *Unable to find a mentor*. Almost six percent (5.8%) of respondents *had not heard of mentoring*. Having *never considered being mentored* was the final option for non-mentored survey respondents. Additionally, 5.8% of non-mentored survey respondents *never considered being mentored*.

To investigate their hypothesis that mentored USNA Midshipmen would have higher GPA, class standing, and overall order of merit; correlation statistical analysis was performed. The authors analyzed survey respondents *overall level of satisfaction with the USNA* and found there was *moderate satisfaction* with the USNA. Regarding the survey respondent's *intent to make the military a career*, Johnson et al. (2003) found survey respondents were *unsure or did not know* whether or not they would make the military a career. Table 7 illustrates Johnson's (2003) comparison between mentored and non-mentored survey respondents with regard to four hypotheses.

Table 7. Correlates of Mentoring: Mentored Compared to Non-Mentored USNA Midshipmen (Johnson, 2003).

	<i>Mentored</i>	<i>Non-Mentored</i> (Mean + SD)	<i>t</i>
<i>Hypothesis 1</i>			
GPA	2.83 ± 0.55	2.86 ± 0.54	<i>t</i> [561] = -0.59, ns
Class Standing	2.32 ± 1.07	2.27 ± 1.03	<i>t</i> [566] = -0.66, ns
Overall Order of Merit	2.30 ± 1.05	2.26 ± 1.03	<i>t</i> [566] = -0.44, ns
<i>Hypothesis 2</i>			
Overall Level of Satisfaction	<i>Moderately Satisfied</i> , 4.68 ± 1.32		<i>t</i> [565] = 3.22, <i>p</i> < .01
	4.87 ± 1.19	4.51 ± 1.41	
<i>Hypothesis 3</i>			
Military Career Intent	<i>Unsure/don't know</i> , 3.24 ± 1.03		<i>t</i> [566] = 1.61, ns
	3.31 ± .96	3.17 ± 1.08	
Mentoring Others	45%	N/A	X <sup>2</sup> (1, N = 568) = 78.43, <i>p</i> < .01

With regard to the *Importance of Mentoring*, Johnson et al. (2003) found a mean rating of 3.50 (SD = 0.90) when using a 5-point Likert scale for the entire Naval Academy Midshipmen population. When Johnson et al (2003) separated their data between mentored and non-mentored USNA Midshipmen, the following mean (SD) values were observed: Mentored--3.89 (SD = .79) and Non-Mentored--3.17 (SD = .85). These results showed there was not a significant difference. However, a significant difference was found when these data were segregated in male to female categories. Females reported a mean rating of 3.87 (SD = .86) compared to 3.42 (SD = .89) for males; illustrating the significant difference—*t* (474) = -4.5, *p* < .01.

With respect to mentoring relationship initiation and duration, Johnson et al. (2003) reported 48% of mentoring relationships were initiated by the mentor.

Another 47% of survey respondents noted that their mentoring relationship was initiated mutually. Regarding formal mentoring relationship initiation, only 5% of survey respondents noted having a third party initiate the relationship. Overall, survey respondents indicated mentoring relationship duration ranged from 1 month to two years. Fifty-eight percent, 25%, and 17% of survey respondents indicated mentoring relationship durations of less than 1 year, one to two years, and two or more years; respectively.

Johnson (2003) investigated various mentor characteristics with regard to survey respondent's *most significant mentor*. Accordingly, 41.6% of mentors were military personnel, 30.3% civilian personnel, and 28.1% Naval Academy Midshipmen (peer). Over 96% of survey respondents reported having a mentor older than themselves; with a mean age difference of 17.4 years ( $SD = 12.97$ ). Agreement or disagreement on a 5-point scale with ten mentor characteristics showed *honest and ethical* as the most significant characteristic of mentors ( $M = 4.53$ ,  $SD = 0.84$ ). *Caring, intelligent, friendly* and *wise* were the next most highly rated mentor characteristics.

Kram (1985) found several mentoring functions, which fall into the two broad categories. Johnson (2003) sought to determine survey respondent's opinion on 15 mentor functions. Table 8 provides an illustration of the 15

mentoring functions, means, standard deviations, and Pearson R correlations with some key outcomes of having a mentor (Johnson, 2003).

Table 8. Mentor Functions: Means, Standard Deviations, and Correlations with Key Outcomes of Having a Mentor (Johnson et al., 2003)

Function	M	SD	<i>Satisfaction w/USNA</i>	<i>Personal Growth</i>	<i>Professional Growth</i>	<i>Importance of Mentor Relationships</i>	<i>Intent of Military Career</i>
Support and encouragement	4.32	0.86	.09	.41	.20	.13	-.01
Enhanced military career	4.05	0.91	.17	.19	.43	.19	.16
Built professional networks	3.99	1.05	.10	.10	.33	.11	.07
Increased self-esteem	3.98	1.12	.01**	.35	.23	.06	-.02
Emotional support	3.95	1.06	.05*	.36	.20	.03*	-.05
Developed academic skills	3.92	0.97	-.03	.07	.06	-.02	-.03
Developed military skills	3.92	1.08	.11	.17	.39	.20	.13
Built personal ethics & values	3.73	1.04	.09	.38	.28	.11	.05*
Creativity and problem solving	3.73	1.10	-.03	.23	.18	.02*	-.01
Increased visibility and exposure	3.67	1.11	.04*	.14	.18	.03*	.07
Advocated for protégé	3.59	1.14	.04*	.20	.12	.03*	.06
Direct training	3.50	1.11	.09	.17	.24	.10	.09
Protection	3.45	1.20	.02*	.27	.19	.07	-.06
Gave opportunities	3.43	1.11	.02*	.28	.24	.03*	-.02
Bypass bureaucracy	2.86	1.06	.04*	.06	.14	-.33	-.07

\*p<.05, \*\*p<.01

Johnson et al. (2003) extended the initial findings of Johnson et al. (2001).

Accordingly, Johnson (2003) suggested the utility of subsequent research be conducted to investigate the United States Military Academy (Army) and the United States Air Force Academy populations.



## Chapter II—Review of Literature Summary

This literature review noted the prevalence of mentoring and mentoring relationships and addressed the various mentoring relationship types. The purpose of mentoring is for a more experienced individual to coach, teach, guide or lead a less experienced individual (Gibson, Tesone & Buchalski, 2000). Mentoring relationships can be formally or informally arranged. Additionally, the typical mentoring relationship make up includes at least one mentor and one protégé. In addition the typical dyadic approach to mentoring, mentoring relationship can also be accomplished via a peer relationship, as well as via multiple mentors.

Both the mentor and protégé, in a mentoring relationship, can benefit. These benefits include the enhancement of career-related and psychosocial functions as noted by Kram (1985).

This literature review addressed the dynamics which affect the initiation of mentoring relationship and also noted potential pitfalls of mentoring relationships. These pitfalls include the five ethical behaviors of beneficence, nonmalfeasance, fidelity, autonomy, and justice (Kitchener, 1988; and Kitchener, 1992).

Mentoring relationships in business and education were also address in this literature review. Finally, mentoring and mentoring relationships in the military were reviewed. Great detail and attention was given to the studies of Johnson

(2001) and Johnson (2003), as these studies are the impetus of this current research endeavor.

## CHAPTER III

### METHODOLOGY

#### Introduction

This chapter describes the methodology used in this research study: *The Nature and Existence of Mentoring Relationships at the United States Air Force Academy*. The description of the population, study participants, survey instrument used, data collection, and data analysis are discussed.

#### General Perspective

A descriptive case study design was used, as random assignment was not an option according to the rules and regulations of the United States Air Force Academy. As such, the United States Air Force Academy emphasized the fair and equal treatment of all Academy Cadets. Therefore, the mentoring relationships survey was offered to all Air Force Academy Cadets enrolled in the Air Force Academy's Behavioral Sciences and Leadership course, BS-310. BS-310 was selected as it is a key Junior/Senior level leadership course designed to support the United States Air Force Academy's Officer Development System (ODS).

ODS is the umbrella program that integrates activities across all mission elements and affects all dimensions of personal development and professional development of a USAFA Cadet.

### Research Context

Established in 1954, the United States Air Force Academy is located near Colorado Springs, Colorado. The United States Air Force Academy offers a four-year program of instruction and experience designed to provide Cadets the knowledge and character essential for leadership, and the motivation to serve as Air Force career officers. A *Cadet* is a classification of enrolled individuals at the United States Air Force Academy. Cadets are further classified in the following manner: C1C (Cadet 1st Class—Senior), C2C (Cadet 2nd Class—Junior), C3C (Cadet 3rd Class—Sophomore) and C4C (Cadet 4th Class—Freshman). Each Cadet graduates with a Bachelor of Science degree and a commission as a second lieutenant in the United States Air Force. Cadets attending the United States Air Force Academy are highly qualified high school graduates, who excel both academically and athletically. Each year over 10,000, Congressionally-nominated individuals apply to the United States Air Force Academy; of which, only 1,200 are selected.

Permission was requested and granted from the United States Air Force Academy Superintendent, Lieutenant General John F. Regni on January 15, 2009, to conduct the research study (Appendix A). Lt Gen Regni was very gracious in his permission and offered his assistance and his staff to accomplish this study. Major Rodric Smith, of the Air Force Academy Department of Behavioral Sciences and Leadership, was assigned as the faculty liaison and was augmented by Captain Mona Stilson and Lieutenant Colonel Douglas Lindsey.

### Research Questions

It was postulated, considering the many benefits of being mentored, that mentored Cadets might experience higher levels of academic performance (Kram, 1985 & Kram, 1988). Additionally, several research studies have highlighted the importance of demographic characteristics and their impact on mentoring relationship initiation and success (Byrne, 1971; Ragins, 1997; Turbin, 2002; O'Neill, 2002; and Wanberg, 2003). Further, Johnson (2003), Kram (1988), and others (Allen et al., 2004; and Wanber, 2003) note the increased satisfaction and greater career attainment levels achieved by mentored individuals. Finally, this research study is an extension of Johnson (2001) and Johnson (2003). Therefore, as an extension of their research, the researchers note the importance of replicating

Johnson (2003) as closely as possible. This study investigated the following research questions:

*Research Question 1 (RQ1):* Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering the following dependent variables: (a) GPA, (b) class standing, (c) overall order of merit and (d) prior military service? Overall order of merit is a cumulative measure, which scores from academic, military and physical education average (PEA).

*Research Question 2 (RQ2):* Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets on: (a) race, (b) age and (c) gender.

*Research Question 3 (RQ3):* Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering the following dependent variables: (a) satisfaction with the USAFA, (b) plans to make the military a career, (c) mentoring of others and (d) perception of the importance of mentoring.

### Research Participants

The target population of this study was the 710 USAFA Cadets enrolled in the Fall, 2009 offering of the Behavioral Sciences and Leadership Department's

BS-310 course. BS-310 is a key Junior/Senior level leadership course designed to support the United States Air Force Academy's Officer Development System (ODS).

ODS is the umbrella program that integrates activities across all mission elements and affects all dimensions of personal development and professional development of a USAFA Cadet.

### Research Instrument

To answer the study research questions, data was collected using a web-based mentoring relationships survey, designed and utilized by Johnson et al. (2003). Permission to use the United States Naval Academy Midshipmen Mentoring Relationships Survey on the Air Force Population was requested and granted by Dr. W. Brad Johnson of the Department of Leadership, Ethics, & Law of the United States Naval Academy (Appendix B).

The mentoring relationships survey instrument provided by Dr. W. Brad Johnson was only modified in the slightest manner, necessary to apply to the Air Force Academy Cadet population. Such changes included changing the "current order of merit" categories to reflect relevant USAFA terminology. Another modification to the original USNA mentoring survey was to modify such terms as Midshipmen first class to C1C (Cadet First Class), Midshipmen second class, and

so forth. Finally, wherever USNA or United States Naval Academy was studied on the original survey, USAFA or United States Air Force Academy was substituted.

Once such modifications were made, the initial mentoring relationships survey was provided to a 15 member pilot study group, who had recently graduated from the United States Air Force Academy within three years. These 15 individuals were available to participate in the pilot study, as they were serving within Air University at Maxwell Air Force Base, Alabama. The 15 USAFA graduates all provided feedback, necessary to ensure that once the mentoring relationships survey was provided to the perspective study participants, that there would be limited confusion and ambiguity within the survey questions. Suggestions provided by the 15 member pilot group were incorporated and again returned to the 15 recent USAF Academy graduates, to ensure any concerns they might have had were addressed and adequately corrected. The 15 member pilot study group provided validation and ensured the reliability of the survey mentoring relationships instrument.

The final United States Air Force Academy Mentoring Relationships Survey can be found at Appendix C. The survey is designed with three major sections: 1) demographic information, 2) general mentoring information, and 3) single most influential mentor.



The survey was initiated with a clear definition of mentoring. It is important to note there are varying definitions as to what mentoring is and what mentoring entails (Allen et al., 1997; Chao, 2009; and Hu, Wang, Sun, & Chen, 2008). The following is the standard definition utilized and presented on the original survey instrument:

*Mentoring is a personal relationship in which a more experienced individual acts as a guide, role model, and teacher to a less experienced protégé. Mentors provide protégés with knowledge, advice, challenge, counsel, and support in their pursuit of becoming full members of a particular profession (Johnson, 2003).*

Demographic questions addressing “order of merit,” which includes academic standing, military standing, physical education average, and overall standing were included. Additionally, cumulative GPA, rank, gender, class, race, leadership position, and prior military experience provided the necessary demographic data.

In the general mentoring information section, survey participants were asked to what extent individuals such as instructors and professors, peers, chaplains, and athletic coaches could reasonably serve as a mentor. Survey participants were then asked the number of mentors they had and the nature of those mentoring relationships. Additionally, survey participants were asked their intent to make the military a career and to whom they attribute their success and satisfaction with the Air Force Academy. The final components of the general

mentoring information section asked survey participants to describe their most influential mentor and what attributes made them most influential.

The final section of the survey capitalized on the general mentoring information section and asked specific questions related to the survey participants “single most influential mentor.” Such questions include whether or not the single most influential mentor was military and their rank or position, their race, gender, whether or not this mentor was older, how long the mentoring relationship lasted and whom initiated the mentoring relationship. The mentoring relationships survey then addressed various mentoring characteristics, such as “strong leader,” “intelligent,” “caring,” etc. and to what extent survey participants agree whether or not the aforementioned described their single most influential mentor. Survey participants were surveyed on how important their single most influential mentor was when considering their personal and professional growth. The survey participants were then surveyed to rate their level agreement whether or not their single most influential mentoring relationship served roles such as “increased my self-esteem,” “assisted in establishing professional networks,” “provided direct training or instruction,” etc.

The Air Force Academy Mentoring Relationships Survey was concluded with a request that survey participants describe an event or experience from the

mentoring relationship which best illustrated how they benefited from being mentored.

### Approval Process

The approval process and necessary steps performed to accomplish this research study included: 1) permission from Dr. W. Brad Johnson (e.g., Johnson, 2001 and Johnson, 2003), of the Department of Leadership, Ethics, and Law at the United States Naval Academy, to modify and use his survey instrument; 2) permission from the United States Air Force Academy (USAFA) to conduct the research study; 3) USAFA Office of Institutional Research approval and survey control number; 4) Auburn University Institutional Review Board (IRB) approval; and 5) USAFA IRB approval.

A request to acquire the mentoring survey utilized in Johnson (2003), was sent via e-mail to Dr. W. Brad Johnson. Dr. Johnson's response giving permission to utilize his survey can be found in Appendix B.

Upon receiving permission to use the mentoring relationships survey, this researcher had the opportunity to speak with Lieutenant General John F. Regni, USAFA Superintendent, regarding the utility of conducting this research endeavor on January 15, 2009. Accordingly, General Regni gave his verbal approval and allowed members of his staff to assist in this research study. It is important to note

the unprecedented cooperation afforded by General Regni and his staff. In fact, such a study could be rarely accomplished without the researcher's inside connection with Lieutenant General Regni.

Dr. Kathleen Odonnell and Ms. Nancy Bogenrief of the USAFA Office of Institutional Research and Ms. Gail Rosado of the USAFA Institutional Review Board assisted in the processes and procedures necessary to accomplish the necessary USAFA approval. Dr. Odonnell directed this researcher to the Collaborative Institutional Training Initiative (CITI) website, in order to complete the necessary training modules related to the treatment and protection of human subjects. Appendix A is the completion report required for any individual desiring to conduct research at the United States Air Force Academy. Additionally, Dr. Odonnell provided an introduction to lieutenant Colonel (Lt Col) Lindsey, Major (Maj) Smith and Captain (Capt) Stilson of the USAFA Department of Behavioral Sciences & Leadership (DFBL) to the researcher.

Prior to initiating the USAFA approval process, the researcher agreed to provide aggregate data and an executive summary of the research findings upon completion of the research study. Accordingly, Maj Smith and Lt Col Lindsey acknowledged their acceptance and noted the utility of such information on potential curriculum development opportunities.

In working with Lt Col Lindsey, Maj Smith and Capt Stilson; together this researcher and the aforementioned individuals completed and submitted the USAFA IRB *Request for Research Exemption Final Determination* document (Appendix D) on 8 April 2009. On April 16, 2009, the USAFA IRB Office assigned protocol *FAC20090041E*, exempt status for this research study (Appendix E). On May 1, 2009, Ms. N. Bogenrief and Ms. Patricia Egleston of the USAFA Office of Institutional Research reviewed the survey instrument and assigned *USAFA SCN 09-12* (Appendix F), as the survey control number (SCN).

On May 11, 2009, the *Auburn IRB Protocol Review Submission* was forwarded to the Auburn IRB (Appendix G). On June 18, 2009, the Auburn IRB completed their review and assigned the following protocol identification: #09-141 EX 0905, approved (Appendix H). In addition to their approval letter, the Auburn IRB approved the Informed Consent document can be found at Appendix I. As this research effort was being performed via an online survey, the informed consent information found at Appendix I preceded the survey instrument found at Appendix B.

### Data Collection

The mode of data collection was via a web-based survey. Dillman (2000) and Creswell (2005) noted the importance of obtaining a high response rate when

conducting survey research. Accordingly, Porter & Whitcomb (2003) and Hamilton (2003) indicated that a response rate of 30% is considered to be average and higher response rates are encouraged. Regarding this research study, 710 requests to participate were sent to all USAFA Cadets enrolled in the Department of Behavioral Sciences & Leadership's BS-310 Course. Accordingly, 410 Cadets responded to the survey. Hamilton (2003), indicated a "useable" survey is one where 80% or more questions are answered. Given Hamilton's (2003) definition, 325 survey responses were usable. Therefore the response rate for useable surveys is calculated to be 45.7% (325 responses / 710 invitations).

The following paragraphs provide an overview of the methods exercised with regard to data collection. Initially, Capt Stilson of USAFA Department of Behavioral Sciences & Leadership forwarded a contact list of all 710 Cadets enrolled in the BS-310 course on August 8, 2009, to the researcher.

Prior to sending the official invitation to the survey participants, the mentoring relationships survey was posted on a secure website. A web link was sent to Capt Stilson for her to ensure the USAFA Cadets would be able to access the online survey. Accordingly, Capt Stilson affirmed her ability to access the survey and therefore we were reasonably assured data collection could begin.

There were a total of three invitational contacts made with the seven hundred and ten USAFA Cadets enrolled in the BS-310 course (Appendix J). The

first invitation to participate in this research study was sent to on Sunday, August 16, 2009, to each participant. The second contact was made on Tuesday, August 18, 2009 and the final contact occurred on Tuesday, August 25, 2009.

As mentioned previously, all 710 USAFA Cadets enrolled in the BS-310 course were invited to participate in this research study. A total of 410 survey responses were collected; however, only 325 surveys were usable, according to Hamilton's (2003) criteria of 80% survey completion.

### Data Analysis

The study examined the nature and existence of mentoring relationships at The United States Air Force Academy. The data were analyzed using several statistical analysis strategies. Descriptive statistical tests, to include mean, standard deviation and frequencies were performed. Due to this research effort being a duplication of Johnson et al. (2003), data analysis replicates the data analysis techniques of Johnson et al. (2003). In addition to the data analysis indicated above further data analysis were performed on the research data. The research questions are listed below with a description of the data analysis procedures performed to address each research question.

*Research Question 1 (RQ1):* Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when

considering the following dependent variables: (a) GPA, (b) class standing, (c) overall order of merit and (d) prior military service?

*Statistical analysis for RQ1:* To address the first research question, Chi-square analysis was performed. Pearson correlation analysis was performed to determine whether significant relationships existed between mentored and non-mentored USAFA Cadets with regard to GPA, class standing, overall order of merit and prior military service were taken into count. Descriptive analysis was performed to determine the mean, standard deviation and frequency of the above variables.

*Research Question 2 (RQ2):* Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets on: (a) race, (b) age and (c) gender.

*Statistical analysis for RQ2:* To address the first research question, Chi-square analysis was performed. Correlation analysis was performed to determine whether significant relationships existed between mentored and non-mentored USAFA Cadets when race, gender and age were considered. Descriptive analysis was performed to determine the mean, standard deviation and frequency of the above variables.

*Research Question 3 (RQ3):* Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when



considering: (a) satisfaction with the USAFA, (b) plans to make the military a career, (c) mentoring of others and (d) perception of the importance of mentoring.

*Statistical analysis for RQ3:* To address the third research question, T-test analysis was performed. Correlation analysis was performed to determine whether significant relationships existed between mentored and non-mentored USAFA Cadets when satisfaction with the USAFA, intent to make the military a career, and the perception of the importance of mentoring were addressed. Descriptive analysis was performed to determine the mean, standard deviation and frequency of the above variables.

Descriptive statistical analysis, such as mean, standard deviation, and frequencies were performed to determine the initiation and duration of mentoring, as well as the characteristics of mentors. To determine whether there was a significant mean difference in the aforementioned areas of mentoring, t-test statistical analysis was performed, as well.

Pearson  $r$  correlation analysis, in addition to mean and standard deviation were performed with the following key outcomes of having a mentor, as noted by Kram (1985): a) support and encouragement, b) enhanced military career, c) built professional networks, d) increased self-esteem, e) emotional support, f) developed academic skills, g) developed military skills, h) build personal ethics & values, i) creativity and problem solving, j) increased visibility and exposure, k)

advocated for protégé, l) direct training, m) protection, n) gave opportunities, and o) bypass bureaucracy.

As a result of significant relationship being observed between both “Personal Growth” and “Professional Growth” key outcomes of mentoring with many of the 15 functions of mentoring, linear regression analysis was performed. Linear regression analysis was decidedly the statistical test which determined the linear combination of various functions of mentoring, in explaining the variance of the key outcomes of personal growth and professional growth.

### Chapter III—Methodology Summary

This chapter describes the methodology used in this research study: *The Nature and Existence of Mentoring Relationships at the United States Air Force Academy*.

The general perspective and research context were presented, where the mentoring environment of the United States Air Force Academy was described. The three research questions, with sub-components were outlined and the *Mentoring Relationships Survey* instrument is also described in detail.

The extensive approval process within the United States Air Force Academy and Auburn University's IRB is also described. Included is the approval provided by Lt Gen John F. Regni, the USAFA Office of Institutional Research, the Department of Behavioral Sciences & Leadership, and the USAFA IRB. Additionally, the Auburn University approval process is also described.

The data collection procedures were then outlined, which included contacting the 710 Cadets enrolled in the BS-310 course a total of three times. Additionally, response rates are also reported.

Finally, the statistical data analysis was described, which were performed to address the three research questions. Descriptive statistical analysis was performed to include mean, standard deviation, and frequency data; t-test statistics were performed to determine mean difference; Chi-square analysis was performed

on various data; Pearson r correlation analysis was also performed to determine if significant relationships existed between selected variables. In addition to correlation statistics, linear regression analysis were also performed.

## CHAPTER IV

### FINDINGS

#### Introduction

The purpose of this study was to determine the nature and existence of mentoring relationships at the United States Air Force Academy. The military is an organization where junior officers and junior enlisted individuals (protégé) could benefit from being mentored by more senior officers and senior enlisted personnel (mentor). Unfortunately, there are limited scientific research studies investigating the prevalence and nature of mentoring in military populations. The number of scientific mentoring research studies further decreases when mentoring junior officers and junior enlisted personnel is the query (Yoder, 1992; Schwerin & Bourne, 1998; Johnson, 1999; Steinberg & Foley, 1999; Shaffer, 2003; McGuire, 2007; and Hu, Wang, Sun & Chen, 2008).

Johnson (2001) and Johnson (2003) addressed the prevalence and nature of mentoring relationships at the United States Naval Academy. Johnson et al. (2003) developed a survey, where it was confirmed that Naval Academy Midshipmen who were mentored were more satisfied with their United States Naval Academy experience and were more likely to mentor others.

Johnson et al. (2003) suggests subsequent research be conducted at the United States Military Academy and the United States Air Force Academy to extend this line of research. Therefore, this research study is an effort to extend the research of Johnson et al. (2003), by studying the nature and existence of mentoring relationships at the United States Air Force Academy. This study was accomplished by utilizing mentoring relationships survey developed by Johnson et al. (2003).

The following questions guided the research of this study:

*Research Question 1 (RQ1):* Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets by considering the following dependent variables: (a) GPA, (b) class standing, (c) overall order of merit and (d) prior military service?

*Research Question 2 (RQ2):* Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets related to: (a) race, (b) age and (c) gender.

*Research Question 3 (RQ3):* Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering the following variables: (a) satisfaction with the USAFA, (b) plans to make the military a career, (c) mentoring of others and (d) perception of the importance of mentoring.

To accomplish this research study, the researcher navigated the following approval process and steps: 1) permission from Dr. W. Brad Johnson (e.g., Johnson, 2001 and Johnson, 2003), of the Department of Leadership, Ethics, and Law at the United States Naval Academy, to modify and use his survey instrument; 2) permission from the United States Air Force Academy (USAFA) to conduct the research study; 3) USAFA Office of Institutional Research approval and survey control number; 4) Auburn University Institutional Review Board (IRB) approval; and 5) USAFA IRB approval.

Once approval from the USAFA and Auburn University were granted for this research study, a request to complete the web-based mentoring relationships survey was sent to the USAFA Cadets included in this study. An expanded description of the approval process and request to complete the web-based survey can be found in Chapter III of this study.

### Response Rate and Representative Sample

Data collected from the web-based mentoring relationship survey resulted in a 45.7% response rate (325 responses / 710 invitations). Table 9 shows descriptive data of the United States Air Force Academy mentoring relationships study and comparison of sample, 2010 (C1C-Senior), 2011 (C2C-Junior), 2010/2011 (Seniors and Juniors), and Wing demographic characteristics.

Table 9. United States Air Force Academy mentoring relationships study comparison of sample, 2010 (C1C), 2011 (C2C), 2010/2011, and Wing demographic characteristics.

<i>Characteristic</i>	<i>Study Respondents</i>	<i>'10 (C1C-Senior)**</i>	<i>'11 (C2C-Junior)***</i>	<i>'10 + '11 Combined</i>	<i>Wing (All Cadets)</i>
Gender					
Male	79.6%	81.8%	80.3%	81.0%	80.0%
Female	20.4%	18.2%	19.7%	19.0%	20.0%
Race					
Caucasian	79.6%	73.4%	74.4%	73.9%	74.8%
African-American	6.8%	4.6%	5.3%	5.0%	5.2%
Hispanic/Latino	5.2%	7.5%	7.2%	7.4%	8.4%
Asian	6.8%	9.3%	8.8%	9.1%	8.3%
Other	1.5%	5.1%	4.3%	4.7%	3.7%
Average GPA	2.9 of 4.0	2.8 of 4.0	2.8 of 4.0	2.8 of 4.0	2.8 of 4.0
Age	20.6 ± 1.1	21.6 yrs*	20.7 yrs*	21.2 yrs*	20.0 yrs*
Prior Military Service	0.1%	3.3%	5.1%	4.2%	3.8%

\*SD information not available from the USAFA.

\*\*'10 (C1C-Senior) = Cadet First Class/Senior Graduating in 2010.

\*\*\*'11 (C2C-Junior) = Cadet Second Class/Junior Graduating in 2011.

### *Demographic Data*

Demographic data collected from survey respondents indicated that the majority of participants (79.6%) were male. Table 10 provides an overview of the demographic data collected from the web-based mentoring relationships survey.



Table 10. Summary of Demographic Data for the Respondents of the USAFA Mentoring Relationships Survey.

<i>Characteristic</i>	<i>n</i>	<i>%</i>
Gender	324	100
Male	258	79.6
Female	66	20.4
Class	324	100%
C1C	92	28.4
C2C	232	71.6
Age	324	100
19	17	5.2
20	164	50.6
21	97	29.9
22	28	8.6
23	7	2.2
24	8	2.5
25	3	0.9
Race		
Caucasian	258	79.6
African-American	22	6.8
Hispanic/Latino	17	5.2
Asian	22	6.8
Prior Military Service		
No	304	93.8
Yes	20	6.2
Prior Military Service Yrs.		
1	3	0.9
2	6	1.9
3	8	2.5
4	2	0.6
5	1	0.3

The mean age of the survey participants was 20.6 years (SD = 1.1). Grade Point Average (GPA) data obtained, indicated a mean GPA of 2.9 (SD = 0.5). Very few

survey respondents indicated *having prior military service* (6.2%), with 2.6 years (SD = 1.0) mean service being reported.

## Data Analysis

### *Prevalence of Mentoring Relationships*

Of the 324 USAFA Cadets who completed the mentoring relationships survey, 190 (59%) reported experiencing one or more mentor relationship, prior to attending the USAFA. Two hundred and thirty-six (73%) respondents had one or more mentor relationships while at the United States Air Force Academy.

Chi-square analysis did not reveal a significant relationship between survey respondent gender and having a mentor at the USAFA,  $X^2(1, N = 324) = 0.36, p < 0.55$ . Accordingly, 75.8% of females reported being mentored, compared to 72.1% of male survey respondents. Chi-square analysis did not reveal a significant relationship between the gender of respondent and the gender of the Cadet's most influential mentor,  $X^2(1, N = 256) = 1.16, p < 0.28$ . Further, Chi-square analysis did not detect a significant relationship between mentored and non-mentored Cadets in relation to a) class, b) race, and c) prior military service. Class,  $X^2(1, N = 324) = 0.69, p < 0.41$ ; race,  $X^2(4, N = 324) = 2.51, p < 0.64$ ; and prior military service,  $X^2(4, N = 20) = 3.85, p < 0.43$ .

Table 11 shows Chi-square results between (1) survey respondent gender and having a mentor at the USAFA; (2) gender of respondent and the gender of the Cadet’s most influential mentor; and (3) between mentored and non-mentored Cadets in relation to a) class, b) race, and c) prior military service.

Table 11. Chi-square results for various items: Respondent Gender and USAFA Mentor; Respondent Gender and Gender of Most Influential Mentor; and Mentored and Non-mentored Cadet—Class, Race and Prior Military Service.

Survey respondent gender and having a mentor at the USAFA	$X^2 (1, N = 324) = 0.36, p < 0.55$
Gender of respondent and the gender of the Cadet’s most influential mentor	$X^2 (1, N = 256) = 1.16, p < 0.28$
Between mentored and non-mentored Cadets in relation to:	
Class	$X^2 (1, N = 324) = 0.69, p < 0.41$
Race	$X^2 = (4, N = 324) = 2.51, p < 0.64$
Prior military service	$X^2 = (4, N = 20) = 3.85, p < 0.43.$

Survey participants who indicated that they did not experience a mentoring relationship while at the United States Air Force Academy were asked to specify the reason they were not mentored. Accordingly, 62.1% of non-mentored USAFA Cadets indicated *I do not feel I need or needed a mentor*, where 28.8% of non-mentored USAFA Cadets noted *I have been unable to find a mentor*, as their reason for not experiencing a mentoring relationship at the USAFA. The remaining 9.1% of non-mentored respondents reported *Other* as their response for experiencing a mentoring relationship at the USAFA.

### *Mentoring Means and t-Tests*

The first research question, that USAFA Cadets with a mentor would have a higher GPA, class standing, and overall order of merit, was disconfirmed. There were no significant mean differences between mentored subjects and non-mentored subjects with respect to GPA [on a 4.0 scale] (mentored [M = 2.92, SD = 0.50], non-mentored [M = 3.03, SD = 0.51],  $t [322] = 1.34, p < 0.19$ ), class standing [on a 4.0 scale] (mentored [M = 2.85, SD = 1.04], non-mentored [M = 2.95, SD = 1.05],  $t [324] = 0.65, p < 0.52$ ), and overall order of merit [on a 4.0 scale] (mentored [M = 2.68, SD = 0.78], non-mentored [M = 2.93, SD = 0.81],  $t [322] = 0.60, p < 0.55$ ). Table 12 illustrates the aforementioned mean values and the associated t-test results.

Table 12. Means and t-Test: GPA, Class Standing, and Overall Order of Merit.

	Mentored	Non-Mentored	t-Test
GPA	2.29 $\pm$ 0.50	3.03 $\pm$ 0.51	$t [322] = 1.34, p < 0.19$
Class Standing	2.95 $\pm$ 1.05	2.95 $\pm$ 1.05	$t [324] = 0.65, p < 0.52$
Overall Order of Merit	2.68 $\pm$ 0.78	2.93 $\pm$ 0.81	$t [322] = 0.60, p < 0.55$

The second research question, that there would be statistically significant mean differences between mentored and non-mentored USAFA Cadets with regard to age was disconfirmed. The following is the mean data and t-test (mentored [M = 20.68, SD = 1.16], non-mentored [M = 20.61, SD = 1.01],  $t [324]$

= 0.60,  $p < 0.55$ ). Race and gender were not tested for mean difference/t-test, as these variables were categorical data and therefore did not lend themselves to such statistical testing.

The third research question, that there would be a statistically significant mean difference between mentored and non-mentored USAFA Cadets with regard to the cadet's level of satisfaction with the USAFA and plans to make the military a career was disconfirmed. Related to USAFA satisfaction and military career intentions, there were no significant mean differences between mentored subjects and non-mentored subjects with respect to USAFA satisfaction [1 = extremely dissatisfied, 6 = extremely satisfied] (mentored [M = 4.51, SD = 0.80], non-mentored [M = 4.28, SD = 1.01],  $t [324] = 1.60$ ,  $p < 0.11$ ) and intent for a military career [1 = positively WILL stay in, 5 positively will NOT stay in] (mentored [M = 2.68, SD = 1.16], non-mentored [M = 2.61, SD = 1.01],  $t [324] = 0.43$ ,  $p < 0.67$ ). Table 13 illustrates the aforementioned mean values and the associated t-test results.

Survey participants were asked whether or not they had acted as a mentor to other USAFA Cadets. Over 79% of mentored USAFA Cadets had also mentored someone else. However, only 11.4% of non-mentored USAFA Cadets had acted as a mentored to someone else at the United States Air Force Academy. There was a significant mean difference found between mentored and non-mentored

Cadets [M = 0.65, SD = 0.48], non-mentored [M = 0.31, SD = 0.46], t [324] = 4.41, p < 0.01).

Table 13. Means and t-Test: Satisfaction, Intent for a military career, and Mentored another cadet—In relation to Mentored or Non-Mentored USAFA Cadets.

	Mentored	Non-Mentored	t-Test
Satisfaction	4.51 ± 0.80	4.28 ± 1.01	t [324] = 1.60, p < 0.11
Intent for a military career	2.68 ± 1.16	2.61 ± 1.01	t [324] = 0.43, p < 0.67
Mentored another cadet	0.65 ± 0.48	0.31 ± 0.46	t [324] = 4.41, p < 0.01**

\*\* p < .01

### *Importance of Mentoring*

Survey respondents were asked to rate their opinion of the importance of mentoring relationships. The total sample mean rating was 3.95 (SD = 0.81). A significant mean difference was found with regard to the perception of the importance of mentoring [1 = extremely unimportant, 5 extremely important] (mentored [M = 3.44, SD = 0.81], non-mentored [M = 3.89, SD = 0.76], t [324] = 3.49, p < 0.01).

Respondents were asked to rate their level of agreement (1 = strongly disagree, 5 = strongly agree) with two statements: 1) *In general, I attribute my success at the USAFA to myself* and 2) *In general, I attribute my success at the*

USAFA to mentors. Initial mean ratings for . . .*myself* was 3.47 (SD = 1.00) and . . .*mentor(s)* 2.93 (SD = 1.07). To investigate whether there was a significant difference mean between mentored and non-mentored Cadets rated the above items, a Within subjects t-test was performed. Accordingly, with regard to . . .*myself*, (mentored [M = 3.61, SD = 1.00], non-mentored [M = 3.55, SD = 0.91], t [88] = 0.47, p < 0.64). A Within subjects t-test was performed on . . .*mentor(s)*, (mentored [M = 2.90, SD = 0.99], non-mentored [M = 2.27, SD = 1.22], t [88] = 3.72, p < 0.01). These results indicate that there was not a significant mean difference when “. . .*myself*” means were compared in relation to mentored and non-mentored Cadets. However, when “. . .*mentor(s)*” mean values were compared in relation to mentored and non-mentored Cadets, a significant mean difference was observed. Table 14 illustrates the aforementioned correlates of mentoring data.

Table 14. Mentored or Non-Mentored USAFA Cadets. Means and t-Tests: In general, I attribute my success at the USAFA to...

	Mentored	Non-Mentored	t-Test
...Myself	3.61 ± 1.00	3.55 ± 0.91	t [88] = 0.47, p < 0.64
...Mentor(s)	2.90 ± 0.99	2.27 ± 1.22	t [88] = 3.72, p < 0.01**

\*\* p < .01

### *Initiation and Duration of Mentoring*

Respondents, who were mentored, were asked to indicate who initiated their most influential mentoring relationship. Thirty percent (30.3%) of respondents indicated that they, the protégé initiated the mentoring relationship. Nearly fifty-seven percent (56.7%) of respondents noted the mentoring relationship was initiated by the mentor. The remaining 13.0% of mentored Cadets indicated the mentoring relationship was either initiated somewhat mutually, by a third party or for “other” reasons.

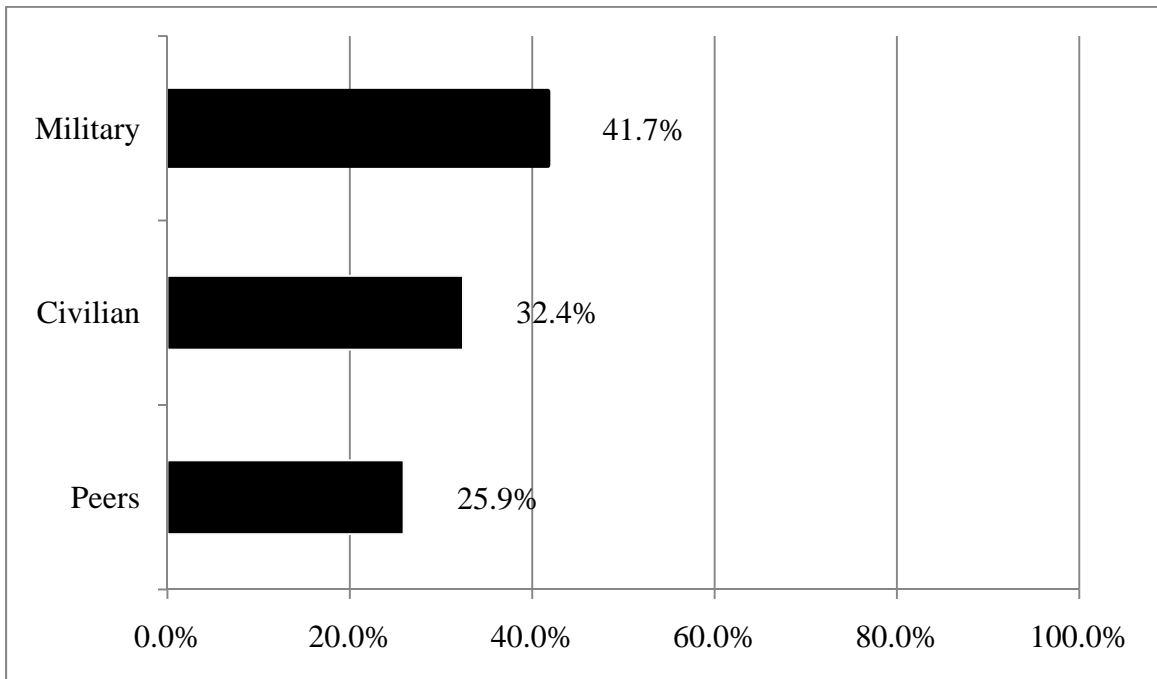
When asked how long their mentoring relationship lasted, these responses ranged from one month to more than three years. Those mentoring relationships lasting less than a year accounted for 21.8% of responses. Another 4.2% of responses noted their mentoring relationship lasted less than two years, but more than one year. Slightly over twenty-one percent (21.2%) of respondents indicated their mentoring relationship lasted two years. Mentoring relationships lasting less than three years, but more than two years accounted for 2.8% of responses. Finally, mentoring relationships lasting three years or more (3.5 years) accounted for the remaining 10.4% of survey responses.



### *Characteristics of Mentors*

Survey respondents, who were mentored, were asked several questions regarding their *most influential* mentor at USAFA. Military mentors made up 41.7% of mentors, while civilian mentors accounted for 32.4%, followed by peer mentoring by other Cadets (25.9%). Figure 1 shows the demographic data of the survey respondent's most influential mentor characteristics with regard to their status/classification.

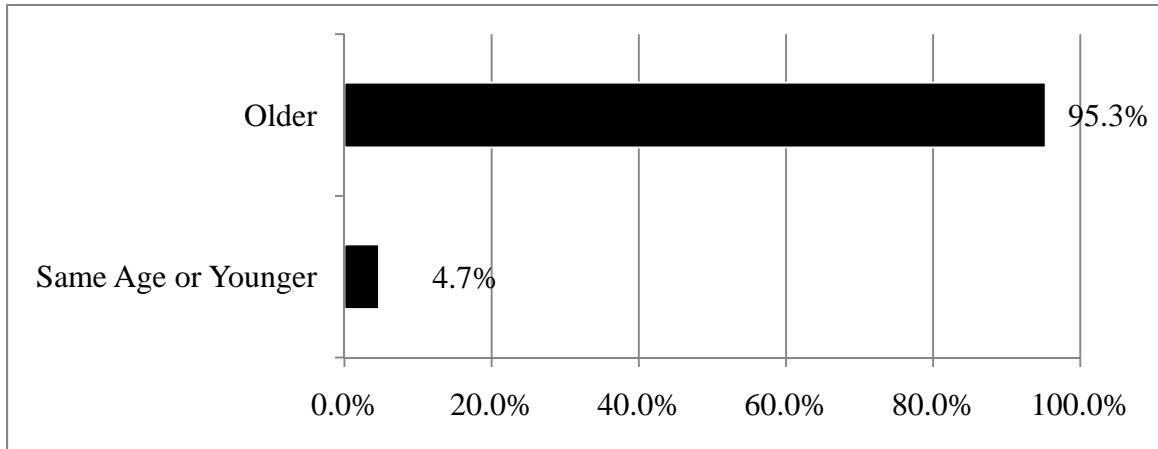
Figure 1. Most Influential Mentor Demographic Characteristics--Status.



With regard to age, 95.3% of survey respondents indicated their most influential mentor was older than they were. Further, 4.7% of survey respondents

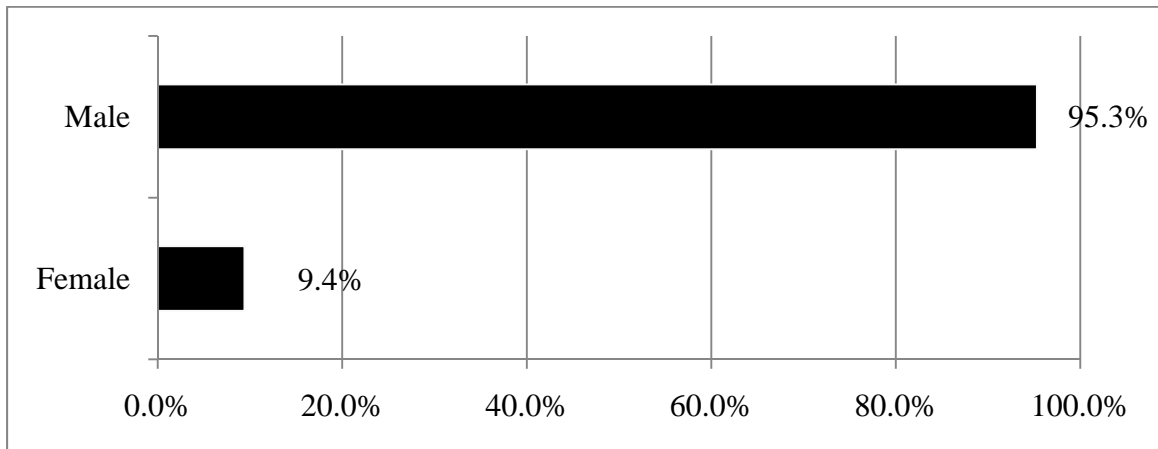
noted their most influential mentor was their same age or younger. Figure 2 shows the demographic data of the survey respondent's most influential mentor in relation to age.

Figure 2. Most Influential Mentor Demographic Characteristics--Age.



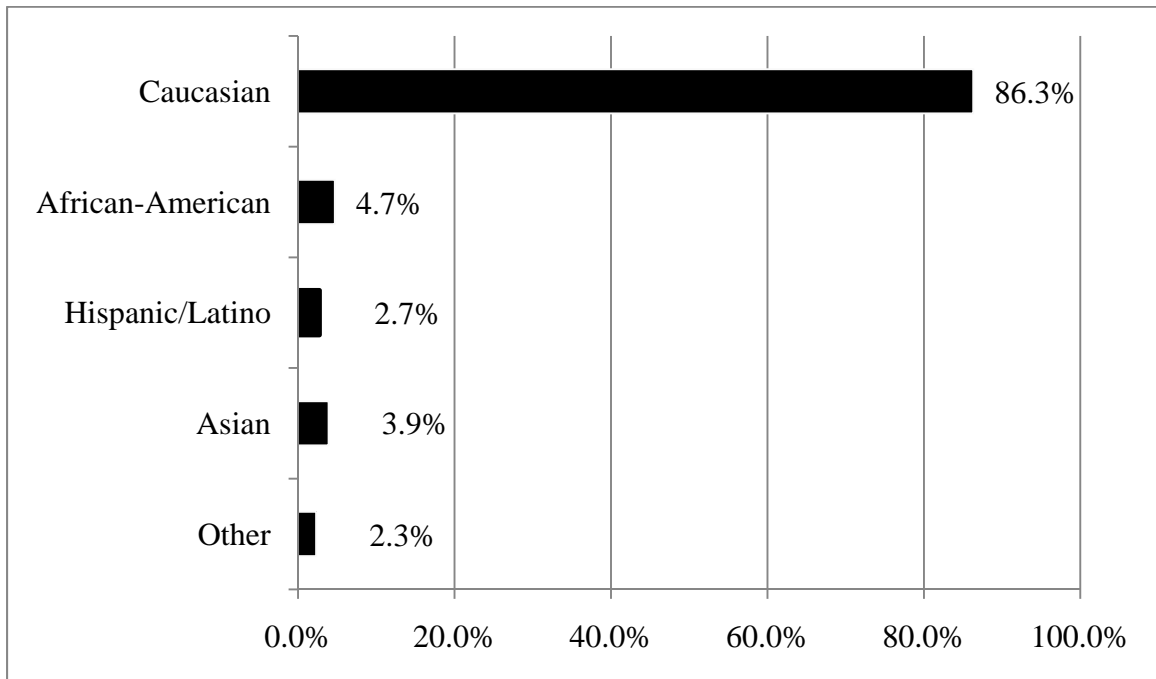
The gender data reported by survey respondents indicated that 90.6% of most influential mentors were male and the remaining 9.4% were female. Figure 3 shows the demographic data of the survey respondent's most influential mentor in relation to age.

Figure 3. Most Influential Mentor Demographic Characteristics--Gender.



Finally, the racial breakdown for the mentored Cadet's most influential mentor is as follows: Caucasian (86.3%), African-American (4.7%), Hispanic/Latino (2.7%), Asian (3.9%), and other (2.3%). Figure 4 shows the graphical representation of these data.

Figure 4. Most Influential Mentor Demographic Characteristics--Race.



Survey respondents were asked to indicate their level of agreement (1 = strongly disagree, 5 = strongly agree) with prominent mentor characteristics in relation to how well they described their most influential mentor. Table 16 illustrates the mean and standard deviation values for each of the ten mentor characteristics. “Caring/Genuinely Concerned,” (M = 4.74, SD = 0.55) was the highest rated mentor characteristic. Closely rated was “Honest/Ethical,” (M = 4.72, SD = 0.60). There were no significant difference between these two variables,  $t(253) = 0.63, p < 0.53$ . After “Caring/Genuinely Concerned” and “Honest/Ethical,” mentors were described as “Friendly,” “Wise,” “Intelligent,” a

“Strongly Leader,” “Available,” “Humorous,” “Professional,” and “Warm.” All ten mentor characteristics had a mean rating of 4.26 or greater. Table 15 illustrates the mean and standard deviation values of the ten mentor characteristics.

Table 15. Most Desirable Mentor Attributes According to Survey Respondents: Means and Standard Deviations.

Characteristic	M	SD
Strong Leader	4.55	0.64
Honest / Ethical	4.72	0.60
Intelligent	3.57	0.69
Warm	4.26	0.89
Professional	4.47	0.81
Caring / Genuinely Concerned	4.74	0.55
Available	4.54	0.66
Wise	4.57	0.62
Friendly	4.63	0.68
Humorous	4.49	0.75

Respondents were asked to rate the extent (1 = very low, 5 = moderate, and 10 = very high) to which key individuals could reasonably serve as mentor to them as a Cadet. This scale is consistent with the scale used by Johnson et al. (2003). Table 16 illustrates the mean and standard deviation values for each potential mentor category. “Instructors / Professors” were considered to be most likely to reasonably serve as a mentor (M = 7.21, SD = 1.91). Interestingly, “Chaplains” and “Other” received the lowest ratings of M = 5.92 (SD = 2.46) and M = 5.84 (SD = 2.13), respectively.

Table 16. Individuals Who Are Considered Potential Mentor(s): Means and Standard Deviations.

Characteristic	M	SD
Instructor / Professors	7.21	1.91
Peers	6.88	1.87
Company Officers	6.49	2.12
Chaplains	5.92	2.46
Athletic Coaches	6.10	2.63
Other	5.84	2.13

### *Functions of Mentoring*

Kram (1985) developed a list of 15 mentoring functions, which include psycho-social components and career-development functions. Accordingly, respondents were asked to rate their level of agreement (1 = strongly disagree, 5 = strongly agree) with these fifteen mentoring functions. Table 17 illustrates the mean and standard deviations of each of the 15 mentoring functions. Interestingly, all 15 mentoring functions had a mean rating of 3.29 or higher. “Support and Encouragement” was the highest rated mentoring function (M = 4.54, SD = 0.63). All 15 mentoring functions received a mean rating of 3.29 or higher. “Direct training,” “Advocated for protégé,” “Gave opportunities,” “Increased self-esteem,” “Enhanced military career,” “Protection,” and “Emotional support” were rated 4.01 or higher.

Table 17. Mentor Functions Described by Kram (1985) and Survey Respondent Inputs: Means & Standard Deviations.

Function	M	SD
Support and encouragement	4.54	0.63
Enhanced military career	4.09	0.91
Built professional networks	3.78	0.93
Increased self-esteem	4.10	0.86
Emotional support	4.01	0.99
Developed academic skills	3.40	1.13
Built personal ethics & values	4.18	0.87
Creativity and problem solving	3.76	0.94
Increased visibility and exposure	3.90	1.01
Advocated for protégé	4.29	0.80
Direct training	4.34	0.84
Protection	4.07	0.90
Gave opportunities	4.20	0.84
Bypass bureaucracy	3.60	0.97

Table 18 illustrates key outcomes of having a mentor through Pearson r correlation analysis and the associated level of significance. These key outcomes include the Cadet's level of satisfaction with the USAFA, their opinion of the importance of mentoring relationships, and their intent to pursue a military career.

Table 18. Mentor Functions: Means, Standard Deviations, Pearson r and Level of Significance: Satisfaction, Importance and Intent (n = 209).

Function	<i>Satisfaction w/USAFA</i>	<i>Importance of Mentoring Relationships</i>	<i>Intent of Military Career</i>
Support & encouragement	r = 0.03, p = 0.69	r = 0.13, p = 0.03*	r = -0.11, p = 0.08
Enhanced military career	r = -0.04, p = 0.56	r = 0.05, p = 0.46	r = -0.00, p = 0.96
Built professional networks	r = -0.01, p = 0.88	r = 0.09, p = 0.15	r = -0.10, p = 0.09
Increased self-esteem	r = 0.14, p = 0.03*	r = 0.10, p = 0.09	r = -0.05, p = 0.44)
Emotional support	r = 0.16, p = 0.01**	r = 0.20, p = .01**	r = -0.13, p = 0.03*
Developed academic skills	r = 0.08, p = 0.24	r = 0.05, p = 0.41	r = 0.06, p = 0.33
Built personal ethics & values	r = 0.04, p = 0.51	r = 0.04, p = 0.53	r = -0.10, p = 0.11
Creativity & problem solving	r = 0.06, p = 0.34	r = 0.08, p = 0.22	r = 0.01, p = 0.84)
Increased visibility & exposure	r = 0.01, p = 0.83	r = 0.11, p = 0.09	r = -0.03, p = 0.59
Advocated for protégé	r = 0.06, p = 0.36	r = 0.07, p = 0.29	r = -0.06, p = 0.35
Direct training	r = -0.00, p = 0.99	r = 0.11, p = 0.09	r = -0.03, p = 0.63
Protection	r = 0.11, p = 0.08	r = 0.11, p = 0.07	r = -0.07, p = 0.29
Gave opportunities	r = 0.09, p = 0.16	r = 0.00, p = 0.95	r = 0.03, p = 0.62
Bypass bureaucracy	r = 0.08, p = 0.22	r = -0.04, p = 0.53	r = 0.14, p = 0.02*

\* p < .05. \*\* p < .01.

As Table 18 illustrates, significant relationships at the .05 level were observed between “Satisfaction with USAFA” and “Increased self-esteem.” A significant relationship was observed at the .01 level again with “Satisfaction with USAFA” and “Emotional Support.” Another significant relationship, at the .01 level was also observed between “Emotional Support” and “Importance of Mentoring.” The “Importance of Mentoring” was also found to have a significant relationship with “Support/Encouragement,” which was observed at the .05 level. Finally, “Intent of Military Career” was observed to have significant relationships, at the .05 level, with “Emotional Support” and “Bypass Bureaucracy.”



Table 19 illustrates significant relationships were observed between the key outcome of “Personal growth” with 12 of the 15 mentoring functions. As indicated, the majority of the significant relationships were observed at the .01 level. Additionally, Table 19 shows that significant relationships were observed between the key outcome of “Professional growth” and 15 of the listed mentoring functions; the majority of which were observed at the .01 level.

Table 19. Mentor Functions: Means, Standard Deviations, Pearson r and Level of Significance: Personal Growth & Professional Growth (n = 209).

Function	<i>Personal Growth</i>	<i>Professional Growth</i>
Support & encouragement	r = 0.41, p < 0.01**	r = 0.13, p = 0.04*
Enhanced military career	r = 0.08, p = 0.20	r = 0.56, p < 0.01**
Built professional networks	r = 0.14, p = 0.03*	r = 0.31, p < 0.01**
Increased self-esteem	r = 0.38, p < 0.01**	r = 0.14, p = 0.03*
Emotional support	r = 0.48, p < 0.01**	r = 0.18, p = 0.01**
Developed academic skills	r = 0.15, p = 0.02*	r = 0.13, p = 0.04*
Built personal ethics & values	r = 0.33, p < 0.01**	r = 0.33, p < 0.01**
Creativity & problem solving	r = 0.28, p < 0.01**	r = 0.18, p = 0.01**
Increased visibility & exposure	r = 0.06, p = 0.39	r = 0.21, p < 0.01**
Advocated for protégé	r = 0.24, p < 0.01**	r = 0.21, p < 0.01**
Direct training	r = 0.06, p = 0.31	r = 0.24, p = 0.99**
Protection	r = 0.27, p < 0.01**	r = 0.15, p = 0.02*
Gave opportunities	r = 0.23, p < 0.01**	r = 0.28, p < 0.01**
Bypass bureaucracy	r = 0.19, p < 0.01**	r = 0.20, p < 0.01**

\* p < .05. \*\* p < .01.

To determine which mentoring functions best explain the “personal growth” key outcome, linear regression analysis were performed and resulted in an R<sup>2</sup> value of .276 (p = .01). Table 20 illustrates the coefficient data for the

respective mentoring functions, which resulted from linear regression analysis. The linear combination of the mentoring functions listed in Table 20 and the resulting  $R^2$  value explain 28% of the variance in the “personal growth” key outcome of mentoring.

Table 20. Coefficients: Linear combination of Select Functions of Mentoring in Explaining Personal Growth.

<i>Variable</i>	<i>B</i>	<i>SE B</i>	$\beta$	<i>T</i>	<i>Sig.</i>
Constant	1.909	0.292	-	6.545	0.000**
Support and Encouragement	0.210	0.073	0.189	2.890	0.004**
Increased Self-Esteem	0.108	0.054	0.131	1.975	0.049*
Emotional Support	0.218	0.049	0.305	4.419	0.000**
Ethics & Values	0.018	0.035	0.029	0.523	0.601

$R^2=.276$ , \* $p<.05$ , \*\* $p<.01$ ,  $df=4/244$ ,  $F = 23.251$

To determine which mentoring functions best explain the “professional growth” key outcome, linear regression analysis were performed and resulted in an  $R^2$  value of .302 ( $p = .01$ ). Table 21 illustrates the coefficient data for the respective mentoring functions, which resulted from linear regression analysis. The linear combination of the mentoring functions listed in Table 21 and the resulting  $R^2$  value explain 30% of the variance in the “professional growth” key outcome of mentoring.

Table 21. Coefficients: Linear combination of Select Functions of Mentoring in Explaining Professional Growth.

<i>Variable</i>	<i>B</i>	<i>SE B</i>	$\beta$	<i>T</i>	<i>Sig.</i>
Constant	2.280	0.216	-	10.538	0.000**
Enhanced Military Career	0.417	0.050	0.512	8.415	0.000**
Built Professional Networks	0.048	0.049	0.061	0.997	0.320
Ethics & Values	0.018	0.035	0.028	0.508	0.612

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$R^2=.302$ , \*\* $p<.01$ ,  $df=3/246$ ,  $F = 35.475$

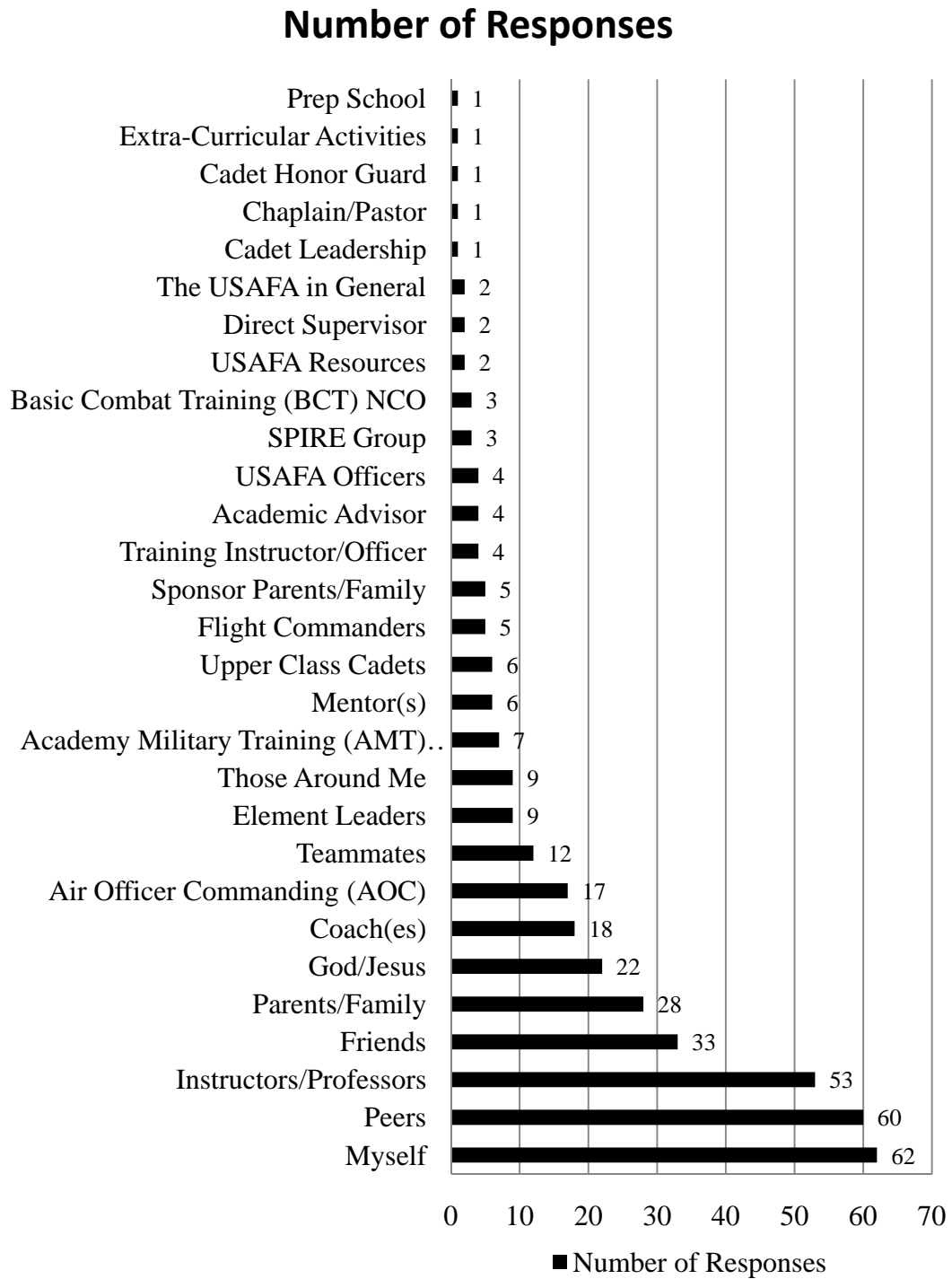
#### *Open-Ended Responses*

Survey respondents were given a total of five opportunities to provide open-ended information while completing the mentoring relationships survey. The five opportunities are listed and described below. 1) *In general, I attribute my success at the USAFA to \_\_\_\_\_*; 2a) *Describe who your MOST influential mentor was*; 2b) *What were some attributes which made them MOST influential?*; 4) *Was your most influential mentor in the military?...If no, describe your most influential USAFA mentor*; 5) *What expectations do you think your mentor has/had of you?*. Question 2a and 2b were asked together, but with a separate space, to reduce any possible confusion.

*Question 1: In general, I attribute my success at the USAFA to \_\_\_\_\_*

Initially, survey participants were asked to indicate their level of agreement to who they attribute their success at the USAFA, regarding themselves and their mentor. Following those two questions, survey participants were asked: *In general, I attribute my success at the USAFA to \_\_\_\_\_*. A total of three-hundred and thirty-eight data points were provided, with some survey respondents providing multiple attributions. Accordingly, Figure 5 illustrates the twenty-nine groups or individuals who the survey respondents attributed the success at the USAFA. “Myself” received a total of 62 notations, and “Peers” were emphasized the second most with 60 notations. “Instructors/Professors” received 53 notations and “Friends” and “Parents/Family” received thirty-three and 28 notations, respectively. A note of interest came when “God” garnered 22 notations as whom or what survey respondents attribute their success at the USAFA. This is interesting, because when survey respondents were asked to rate the extent (1 = very low, 5 = moderate, and 10 = very high) to which various individuals could reasonably serve as mentor to them as a Cadet, “Chaplains” received the lowest ratings of  $M = 5.92$  ( $SD = 2.46$ ).

Figure 5. Frequency Chart: In general, who do you attribute your success at the United States Air Force Academy?



*Question 2a: Describe who your MOST influential mentor was.*

To begin “Part III – Single Most Influential Mentor” survey respondents were provided a statement which read as follows: *when answering the remaining questions, please focus on your **Single Most Influential Mentor** while at the USAFA. If you have never had a mentor at the USAFA, you may stop.*

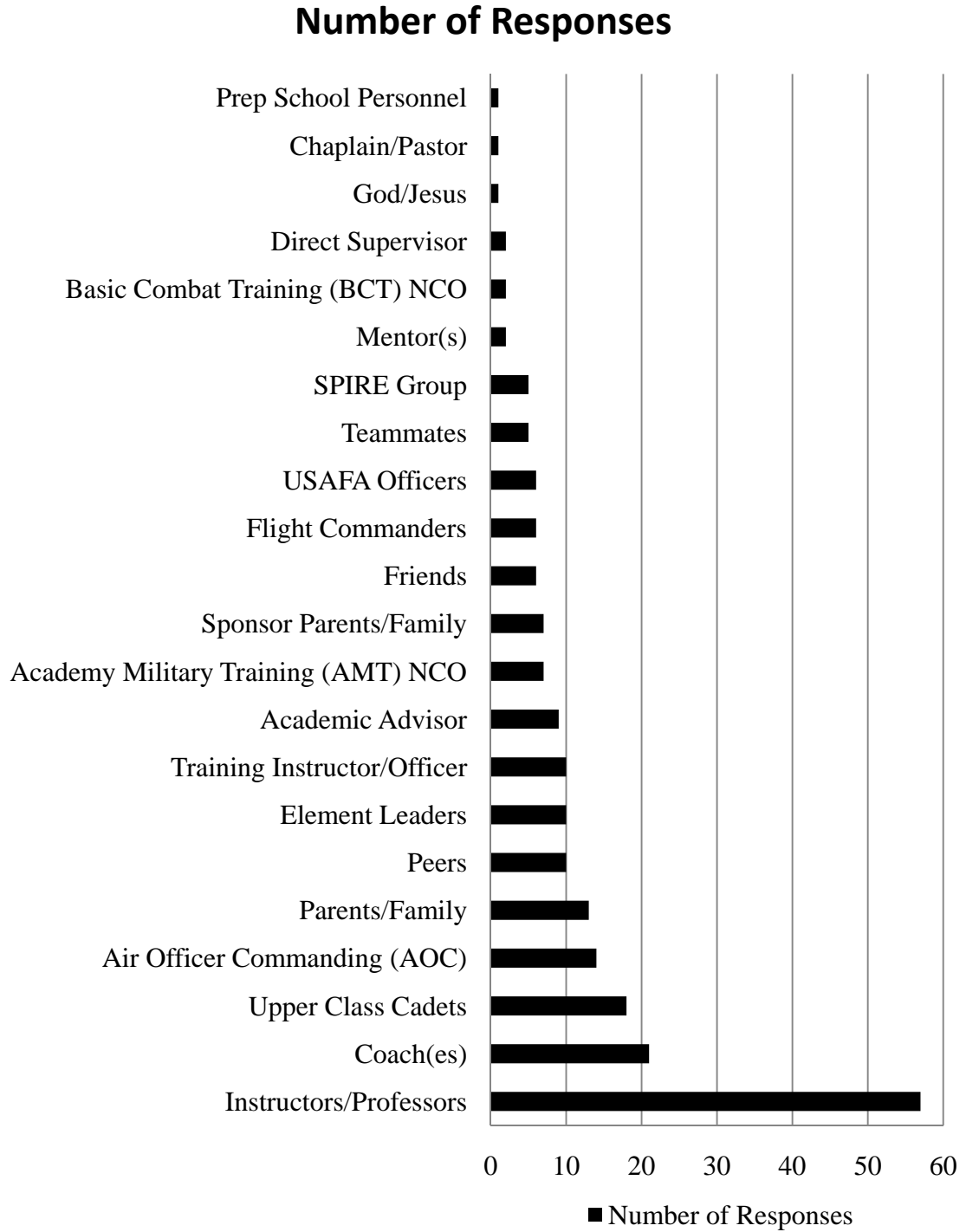
Accordingly, the following question was asked of the survey respondents:

*Describe who you MOST influential mentor was (specific names not needed), just position or role.*

A total of 212 individuals (151 Males and 61 Females) provided inputs for this question. “Instructors/Professors” overwhelmingly topped the list as being the Single Most Influential Mentor category, with 57 total notations. “Coaches” received the next highest notations, with 21 total inputs. “Upper Class Cadets,” “Air Officer Commanding,” and “Parents/Family” round top five most listed Most Influential Mentor list with 18, 14, and 13 notations, respectively.

Figure 6, provides total values for the frequency by which survey respondent indicated who their most influential mentor was (i.e., instructor/professor, advisor, etc). Both males and female cadets agreed “Instructors/Professors” were their Single Most Influential Mentor. However, there was limited agreement or no agreement at all with the remaining categories.

Figure 6. Frequency Chart: Describe who your MOST influential mentor was at the USAFA.



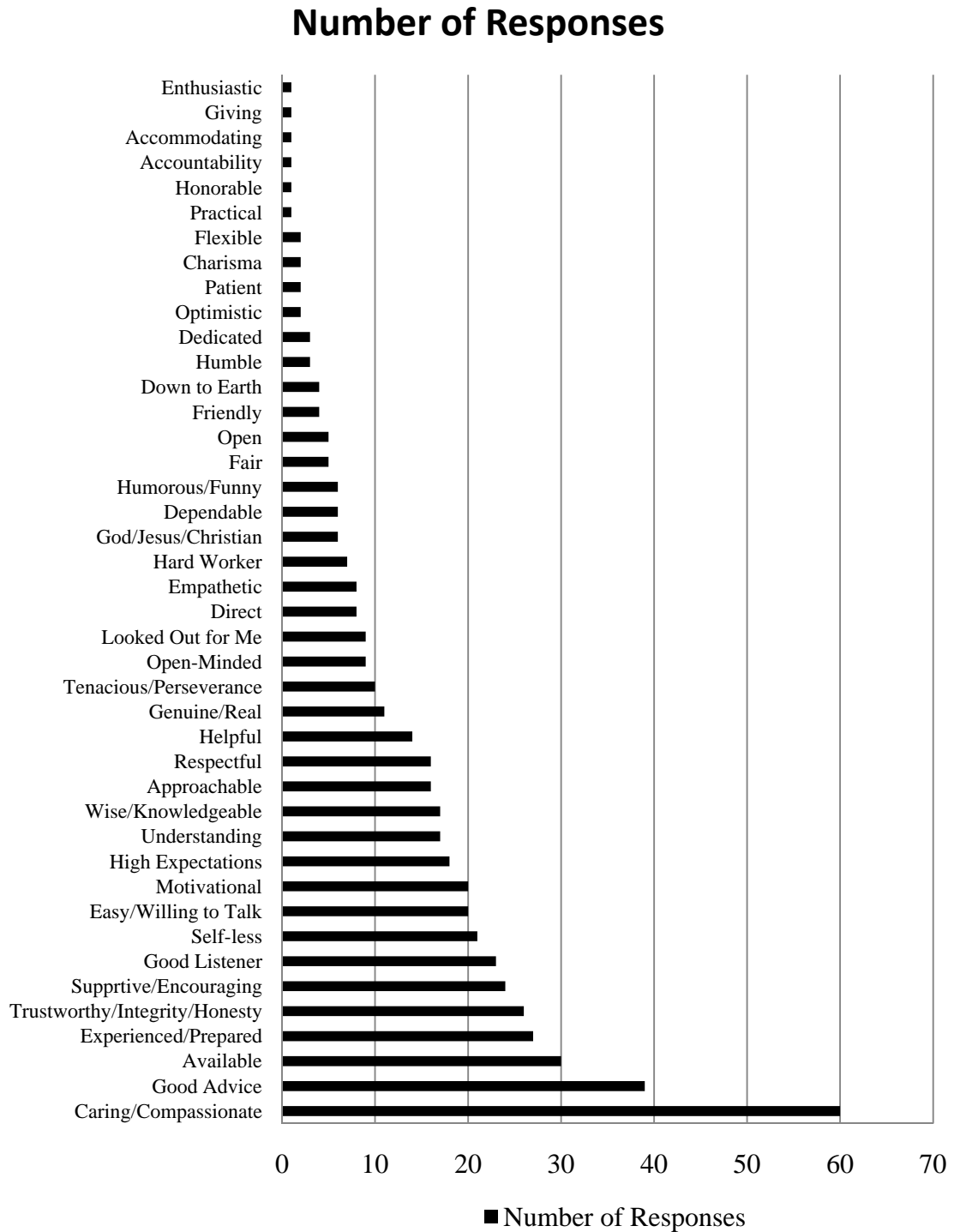
*Question 2b: What were some attributes which made them MOST influential?*

Closely related and grouped with the previous question, survey respondents were asked: *What were some attributes which made them MOST influential?*

Again, a total of 212 individuals (151 Males and 61 Females) provided inputs for this question. The attribute of “Caring/Compassion” received the most notations with 60. The attribute of “Good Advise” garnered 39 responses, with “Available” receiving 30 mentions. “Easy/Willing to Talk,” “Good Listener,” “Supportive/Encouraging,” “Trustworthy/Integrity/Honesty,” and “Experienced/Prepared” received less than thirty, but more than 20 notations as attributes which made their mentor most influential. Figure 7 illustrates the total responses received for the 42 Most Influential Mentor Attributes.



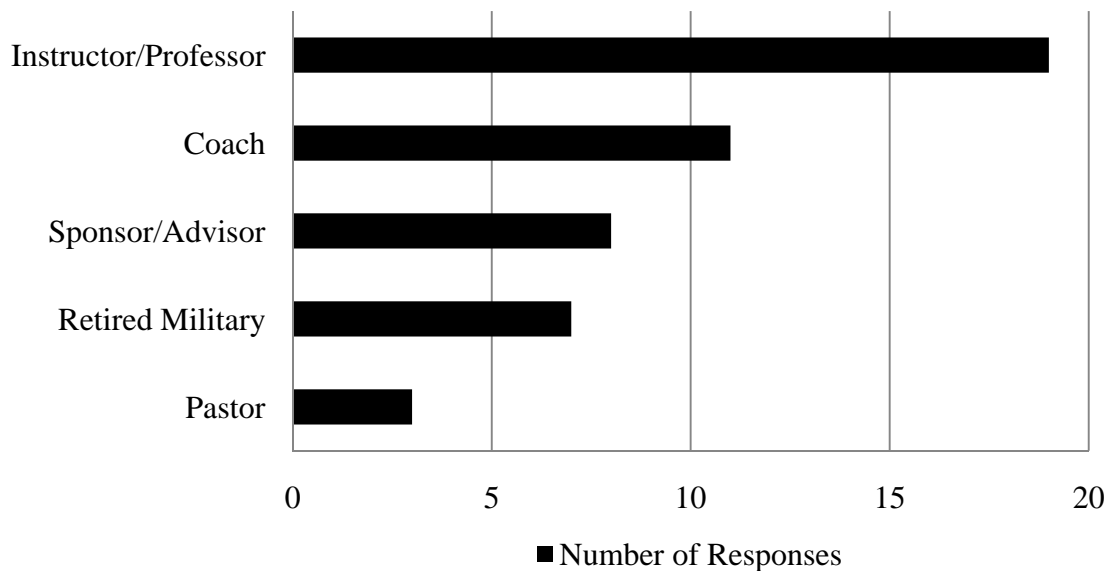
Figure 7. Frequency Chart: Most Influential Mentor Attributes.



*Question 4: (Was mentor military?) If no, describe your most influential USAFA mentor.*

The majority of survey respondents (164 of 212) indicated their most influential mentor was military. However, survey respondents were asked to *describe your most influential USAFA mentor (if not military)*. Nine-teen respondents noted that a civilian USAFA “Instructor/Professor” was their most influential mentor. The above supports the overall question of *who was your most influential mentor*, regardless of whether or not their mentor was military or civilian. Figure 8 illustrates that “Coaches,” “Sponsor/Advisor,” “Retired Military,” and “Pastor” were also considered to be most influential Non-Military mentors.

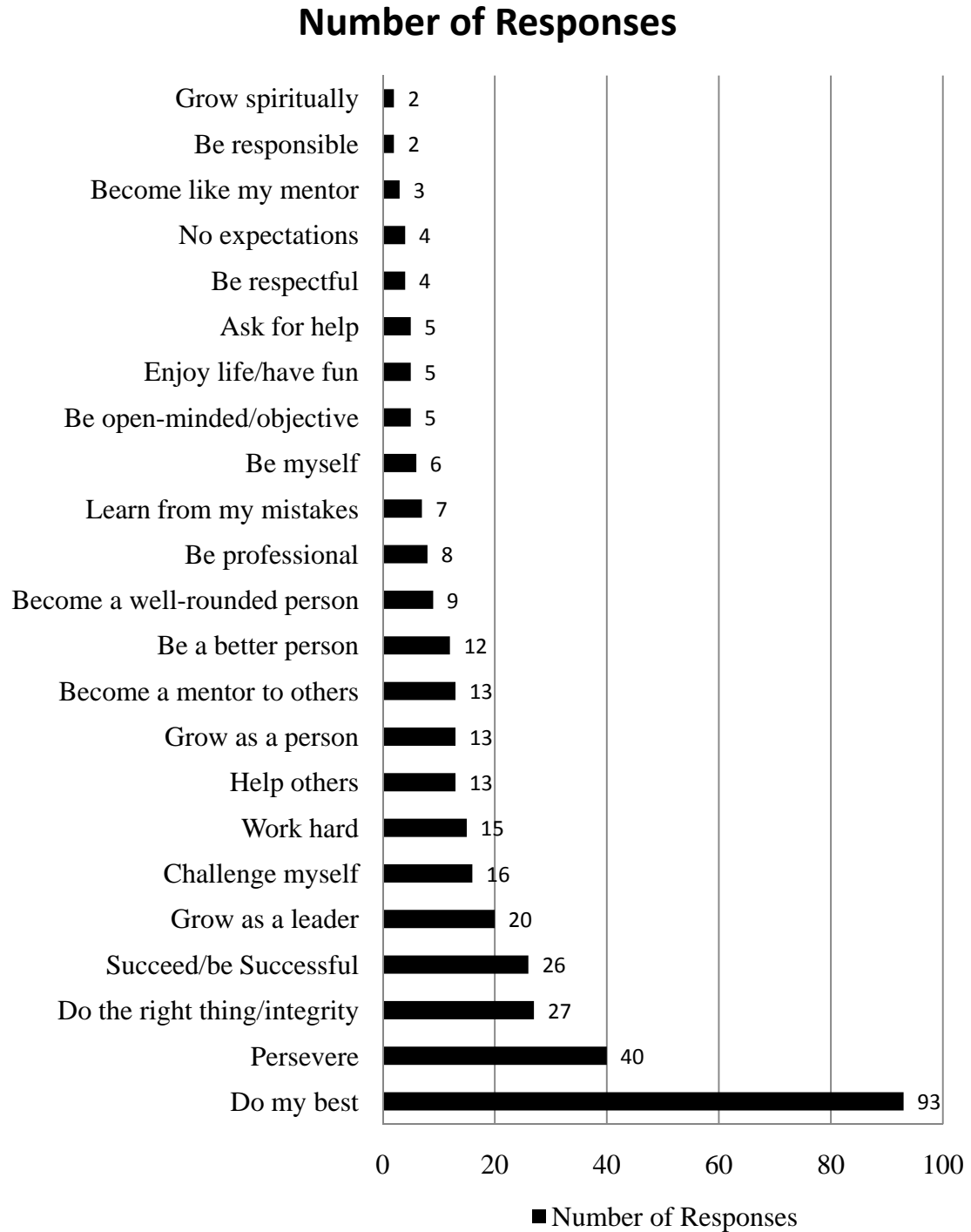
Figure 8. Frequency Chart: Most influential mentor, if not military.



*Question 5: What expectations do you think your mentor has/had of you?*

The final open-ended question asked survey respondents to indicate: *What expectations do you think your mentor has/had of you?* Two-hundred and forty-five (192 male and 52 female) cadets responded to this survey question. Ninety-three noted to “Do my best” as the expectation their mentor had of them. “Persevere” was the next highest expectation mentors had of their cadet protégés, followed by “Do the right thing/Integrity” and “Succeed/Be successful” with 27 and 26 notations, respectively. Figure 9 illustrates the list of 23 expectation categories offered by the survey respondents.

Figure 9. Frequency Chart: What expectations do you think your mentor has/had of you?



Coupled with the question *What expectations do you think your mentor has/had of you*, was the question *did you or do you think you fulfilled those expectations* [of your mentor]? Accordingly, 90.2% (221 of 245) of survey respondents indicated they believe they did fulfill the expectations their mentor had for them and their mentoring relationship.

## Chapter IV—Summary of Findings

Data collected from the web-based mentoring relationship survey resulted in a 45.7% response rate (325 responses / 710 invitations). Over 79% of survey respondents were male and a mean age of 20.6 years (SD = 1.1). The majority (79.6%) of survey respondents indicated Caucasian as their race.

Chi-square analysis did not find significant relationships with regard to the prevalence of mentoring relationships. Additionally, limited significant relationships were found with regard to the various correlates of mentoring. The exception appeared, when Within subjects t-test revealed a significant mean difference between mentored and non-mentored Cadets, when asked whether they had mentored someone else at the USAFA; mentored [M = 0.65, SD = 0.48], non-mentored [M = 0.31, SD = 0.46],  $t [324] = 4.41, p < 0.01$ ).

Regarding the importance of mentoring, a significant difference was found with regard to the perception of the importance of mentoring [1 = extremely unimportant, 5 extremely important] (mentored [M = 3.44, SD = 0.81], non-mentored [M = 3.89, SD = 0.76],  $t [324] = 3.49, p < 0.01$ ).

Additionally, when asked to rate their level of agreement (1 = strongly disagree, 5 = strongly agree) to the statement: *in general, I attribute my success at the USAFA to mentors*. Initial mean ratings for . . .*mentor(s)* 2.93 (SD = 1.07). Within subjects t-test was performed to investigate significant mean difference.

Accordingly, mean values resulted in the following findings: (mentored [M = 2.90, SD = 0.99], non-mentored [M = 2.27, SD = 1.22],  $t [88] = 3.72, p < 0.01$ ). A significant mean difference is observed.

Initiation and duration of mentoring relationships noted 56.7% of mentoring relationships were initiated by the mentor and 30.3% were initiated by the protégé. Additionally, mentoring relationships lasted from as little as one month to more than three years in duration. Mentoring relationships lasting a year or less accounted for 21.8% of responses and 10.4% of responses accounted for mentoring relationships lasting more than three years.

There are a variety of characteristics of “most influential mentors” was addressed; of which mentor gender, race, age, and whether they were civilian or military. Over 90% of respondent indicated their mentor was male. Additionally, 86.3% of respondents noted having a Caucasian “most influential” mentor.

Prominent mentor characteristics, with regard to how well they described their most influential mentor, were also addressed. “Caring/Genuinely Concerned” and “Honest/Ethical” were rated the highest of mentor characteristics. Within subjects t-test found no significant difference when mean difference for these two items,  $t (253) = 0.63, p < 0.53$  were compared. All ten mentor characteristics had a mean rating of 4.26 or greater.

Survey respondents were asked to rate various individuals as to how they might reasonably perform the duties of a mentor. Instructors/professors were considered most likely to be reasonably able to perform as a mentor. Chaplains and “other” were rated as least likely to perform the role of a mentor at the USAFA.

Fifteen mentoring functions were addressed, as noted by Kram (1985). All 15 mentoring functions received a 3.29 or higher on a five-point Likert Scale. Pearson Correlation analysis was performed on key outcomes, such as USAFA Satisfaction, Personal Growth, Professional Growth, Importance of Mentoring Relationships, and Intent to remain in the Military. Significant relationships were observed and can be seen in Table 19.

Finally, survey respondents had the opportunity to provide open-ended responses to the following questions: 1) *In general, I attribute my success at the USAFA to \_\_\_\_\_*; 2a) *Describe who your MOST influential mentor was*; 2b) *What were some attributes which made them MOST influential?*; 4) *Was your most influential mentor in the military?...If no, describe your most influential USAFA mentor*; 5) *What expectations do you think your mentor has/had of you?*. Question 2a and 2b were asked together, but with a separate space, to reduce any possible confusion.



Regarding the question: *In general, I attribute my success at the USAFA to \_\_\_\_\_*, results for this question are as follows. Figure 5 illustrates the twenty-nine groups or individuals who the survey respondents attributed the success at the USAFA. “Myself” received a total of 62 notations, where “Peers” were emphasized the second most with 60 notations; followed by “Instructors/Professors” who received 53 notations.

A total of 212 individuals (151 Males and 61 Females) provided inputs for the request to-- *Describe who you MOST influential mentor was (specific names not needed), just position or role.* “Instructors/Professors” overwhelmingly topped the list as being the Single Most Influential Mentor category, with 57 total notations. “Coaches” received the next highest notations, with 21 total inputs.

Figure 8 provides total values for the frequency by which survey respondent indicated their most influential mentor category. Both males and female cadets agreed “Instructors/Professors” were their Single Most Influential Mentor. However, there was limited agreement or no agreement at all with the remaining categories. Closely related and grouped with the previous question, survey respondents were asked: *What were some attributes which made them MOST influential?* The attribute of “Caring/Compassion” received the most notations with 60. Figure 7 illustrates the total responses received for the 42 Most Influential Mentor Attributes.

The majority of survey respondents (164 of 212) indicated their most influential mentor was military. However, survey respondents were asked to *describe your most influential USAFA mentor* (if not military). Nine-teen respondents noted that a civilian USAFA “Instructor/Professor” was their most influential mentor. Figure 8 illustrates the people who were considered to be most influential Non-Military mentors.

The final open-ended question asked survey respondents to indicate: *What expectations do you think your mentor has/had of you?* Ninety-three survey respondents noted to “Do my best” as the expectation their mentor had of them. “Persevere” was the next highest expectation mentors had of their cadet protégés. Figure 9 illustrates the list of 23 expectation categories offered by the survey respondents. In a closely related question--*did you or do you think you fulfilled those expectations* [of your mentor]? 90.2% (221 of 245) of survey respondents indicated they believe they did fulfill the expectations their mentor had for them and their mentoring relationship.

## CHAPTER V

### SUMMARY, DISCUSSION, RECOMMENDATIONS, AND IMPLICATIONS

#### Introduction

The purpose of this study was to determine the nature and existence of mentoring relationships at the United States Air Force Academy. The military is an organization where junior officers and junior enlisted individuals (protégé) could benefit from being mentored by more senior officers and senior enlisted personnel (mentor). Unfortunately, there are limited scientific research studies investigating the prevalence and nature of mentoring in military populations. The number of scientific mentoring research studies further decreases when mentoring junior officers and junior enlisted personnel is the query (Yoder, 1992; Schwerin & Bourne, 1998; Johnson, 1999; Steinberg & Foley, 1999; Shaffer, 2003; McGuire, 2007; and Hu, Wang, Sun & Chen, 2008).

Johnson (2001) and Johnson (2003) addressed the prevalence and nature of mentoring relationships at the United States Naval Academy. Johnson et al. (2003) developed a survey, where it was confirmed that Naval Academy Midshipmen who were mentored were more satisfied with their United States Naval Academy experience and were more likely to mentor others.

Johnson et al. (2003) suggests subsequent research be conducted at the United States Military Academy and the United States Air Force Academy to extend this line of research. Therefore, this research study is an effort to extend the research of Johnson et al. (2003), by studying the nature and existence of mentoring relationships at the United States Air Force Academy. This study was accomplished by utilizing mentoring relationships survey developed by Johnson et al. (2003).

Chapter I provided a background of mentoring relationships, provided a statement of research problem, the purpose of this research study, stated the research hypothesis, noted assumptions, limitations and delimitations of the study and provided a definition of terms. Chapter II provided an extensive review of the scientific literature regarding the topic of mentoring. Specifically, the prevalence of mentoring, mentoring relationship types, the benefits of mentoring relationships, potential pitfalls of mentoring, mentoring relationship initiation, mentoring in education and business, and mentoring in the military context were all addressed. Extensive attention was devoted to Johnson et al. (2001) and Johnson et al. (2003), as these studies established the theoretical framework this research effort was built upon. Johnson et al. (2003) strongly recommended that the research they conducted at the United States Naval Academy be extended to the United States Military Academy (US Army) and the United States Air Force

Academy. Therefore, the researchers took it upon themselves to replicate Johnson's (2003) work at the United States Air Force Academy. Chapter III identified the research methods and research procedures enlisted in order to accomplish this research study. An overview of the target population and description of research subjects were provided. Additionally, a description of the approval process, the research instrument and description of the data analysis performed were outlined and discussed in Chapter III of this study. Chapter IV illustrated and described the analysis performed in this research effort. Specifically, the data analysis addresses the three major research questions, as well as additional questions and queries which drove additional analysis to be performed. This final chapter of this study will provide discussion, conclusions and will offer recommendations for further research in the area of mentoring:

The following questions guided this research effort:

1. Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering: (a) GPA, (b) class standing, (c) overall order of merit and (d) prior military service?
2. Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering: (a) race, (b) age and (c) gender?

3. Is there a statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering: (a) satisfaction with the USAFA, (b) plans to make the military a career, (c) mentoring of others and (d) perception of the importance of mentoring?

### Summary

Descriptive statistics, correlation, regression and non-parametric statistical analysis were utilized in this research study, in order to investigate the above research questions. The statistical analysis performed in this study was accomplished through the use of the Statistical Package for the Social Sciences (SPSS), version 17.

Seven hundred and ten United States Air Force Academy Cadets enrolled in the USAFA Behavioral Sciences and Leadership Department's BS-310 was invited to participate in this study. Overall, 325 Cadets responded to the web-based mentoring relationships survey (Appendix B). Participation in the web-based survey resulted in a 46% response rate, but more importantly far exceeded the 253 subject level necessary to accomplish a 95% confidence level.

The BS-310 course was selected for this study, due to the fact that all USAFA Cadets must take the course once they are a Junior (C2C—Cadet 2<sup>nd</sup> Class) or Senior (C1C—Cadet 1<sup>st</sup> Class). The latter was important for this study,

as C2C and C1C Cadets would be more likely to have had the opportunity to be mentored, merely because of the overall time spent at the USAFA would be greater than that of C3C (Cadet 3<sup>rd</sup> Class [Sophomore]) or C4C (Cadet 4<sup>th</sup> Class [Freshman]).

Prior to the official launch of the web-based mentoring relationships survey, 15 recent USAFA graduates participated in a pilot study, in order to convert the United States Naval Academy focus mentoring survey into a salient and applicable United States Air Force Academy mentoring relationships survey. The 15 member pilot study group provided validity and reliability to this research effort.

The data analysis performed discovered two significant findings. First, there was a statistically significant relationship discovered between mentored and non-mentored Cadets, [M = 0.65, SD = 0.48], non-mentored [M = 0.31, SD = 0.46],  $t [324] = 4.41, p < 0.01$ ), when USAFA Cadets were asked if they had mentored any USAFA Cadets. The second statistically significant relationship discovered was between mentored and non-mentored cadets, when USAFA Cadets were asked to indicated their perception of the importance of mentoring relationships; (mentored [M = 3.44, SD = 0.81], non-mentored [M = 3.89, SD = 0.76],  $t [324] = 3.49, p < 0.01$ ). With the exception of the two statistically

significant findings, all three research questions previously noted were disconfirmed.

In addition to analysis noted above, Pearson correlation analysis was performed on the 15 functions of mentoring (Kram, 1985), to determine if there was a significant correlation between the 15 functions and five key outcomes of mentoring (USAFA satisfaction, personal growth, professional growth, importance of mentoring relationships, and intent of military career). The results of the Pearson correlation analysis can be seen in Table 13, Chapter IV of this study. Several significant correlations were discovered between the 15 functions of mentoring and the 5 key outcomes of mentoring. Specifically, the key outcomes of personal growth and professional growth accounted for the most significant correlations.

To determine which mentoring functions best explain the “personal growth” key outcome, linear regression analysis were performed and resulted in an  $R^2$  value of .29 ( $p = .01$ ). Table 21 illustrates the coefficient data for the respective mentoring functions, which resulted from linear regression analysis. The linear combination of the mentoring functions listed in Table 21 and the resulting  $R^2$  value explain 29% of the variance in the “personal growth” key outcome of mentoring.



To determine which mentoring functions best explain the “professional growth” key outcome, linear regression analysis were performed and resulted in an  $R^2$  value of .357 ( $p = .01$ ). Table 22 illustrates the coefficient data for the respective mentoring functions, which resulted from linear regression analysis. The linear combination of the mentoring functions listed in Table 22 and the resulting  $R^2$  value explain 36% of the variance in the “professional growth” key outcome of mentoring.

## Discussion

This study was conducted at the United States Air Force Academy near Colorado Springs, Colorado via a web-based survey. Cadets attending the United States Air Force Academy are highly qualified high school graduates, who excel both academically and athletically. Each year over 10,000, Congressionally-nominated individuals apply to the United States Air Force Academy; of which, only 1,200 are selected.

The environment at the USAFA is highly competitive and any advantage that might ensure success is sought after. With regard to the competitiveness of the USAFA environment, it was the researcher’s intent to determine the nature and existence of mentoring relationships at the United States Air Force Academy. Accordingly, the researcher hypothesized:  $H_0$ : There was no statistically

significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering: (a) GPA, (b) class standing, (c) overall order of merit and (d) prior military service.  $H_0_2$ : There was no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering: (a) race, (b) age and (c) gender.  $H_0_3$ : There was no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering: (a) satisfaction with the USAFA, (b) plans to make the military a career, (c) mentoring of others and (d) perception of the importance of mentoring.

All but  $H_0_3$  C and D were disconfirmed. There were no significant differences found, as the summary above notes, for  $H_0_1$  A, B, & C;  $H_0_2$  A, B & C and  $H_0_3$  A & B. However, as noted in the summary above and the analysis provided in Chapter IV of this study, several statistically significant differences were found when mentored and non-mentored Cadets were compared. Accordingly, these results support the literature in underlining the importance of mentoring and mentoring relationships in business, education and in this case, the military environment.

## Recommendations

This research effort was a replication and extension of Johnson et al. (2003), when United States Naval Academy Midshipmen were studied. The researcher would like to offer the following recommendations and note that this is not an all inclusive list:

1. A replication of this study at the United States Military Academy (U.S. Army).
2. A replication of this study at the United States Naval Academy, to determine; 1) the nature and existence of mentoring relationships at the USNA and 2) a comparison of data gathered in Table 2 and data gathered in Johnson et al. (2003), to determine if there has been a change in Naval Academy Midshipmen responses
3. A comparative study between the results of this research study, to those gleaned from items 1 and 2 above.
4. Longitudinal studies investigating the effects of mentoring on career success and satisfaction of graduates of the service academies.
5. Longitudinal studies investigating the effects of mentoring on mission readiness.

## Implications

This study found that mentoring is a complex subject; however with many benefits. These benefits include career-related and psycho-social implications and impacts. Accordingly, the results of this study will be shared in the aggregate with the United States Air Force Academy, United State Naval Academy and United States Military Academy to: 1) potentially impact the curricular offerings at the respective military academies, and 2) serve as an impetus for the research recommendations provided.

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APPENDIX A  
CITI TRAINING CERTIFICATE

## CITI Collaborative Institutional Training Initiative

### Human Research Curriculum Completion Report Printed on Friday, November 14, 2008

**Learner:** Shawn OMailia (username: omailsp)

**Institution:** U.S. Air Force

**Contact Information** 501 LeMay Plaza South  
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Maxwell AFB, AL 36112-6106 USA  
Department: Curriculum Technology  
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**Air Force Academy Researchers Training:** Air Force Academy Training Module-  
for USAF Academy personnel only.

#### Stage 2. Refresher 2 Course Passed on 11/14/08 (Ref # 2298286)

Required Modules	Date Completed	Score
Refresher Course 101 Introduction	11/14/08	no quiz
SBR 101 REFRESHER MODULE 1. History and Ethics	11/14/08	5/5 (100%)
SBR 101 REFRESHER MODULE 2. Regulatory Overview	11/14/08	5/5 (100%)
SBR 101 REFRESHER MODULE 3. Fundamental Issues.	11/14/08	5/5 (100%)
SBR 101 REFRESHER MODULE 4. Vulnerable Subjects	11/14/08	4/4 (100%)
Records-Based Research, Part 1	11/14/08	1/1 (100%)
Records-Based Research, Part 2	11/14/08	1/1 (100%)
Records-Based Research, Part 3	11/14/08	1/1 (100%)
HIPAA and Human Subjects Research.	11/14/08	2/2 (100%)
Conflicts of Interest in Research Involving Human Subjects.	11/14/08	2/2 (100%)

**For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.**

Paul Braunschweiger Ph.D.  
Professor, University of Miami  
Director Office of Research Education  
CITI Course Coordinator

Return

APPENDIX B

APPROVAL TO USE MENTORING SURVEY





UNITED STATES NAVAL ACADEMY  
ANNAPOLIS, MARYLAND

November 19, 2009

W. Brad Johnson, PhD  
Dept. of Leadership, Ethics & Law  
United States Naval Academy  
Luce Hall, Stop 7B  
Annapolis, MD 21402

Shawn P. O'Mailia  
549 Hollow Wood Rd.  
Montgomery, AL 36109

Dear Shawn,

You have my full permission to use any of the mentoring surveys that my colleagues and I have used in any previous journal article publications. I understand that you will use or modify these scales for your own research purposes.

Sincerely,

A handwritten signature in black ink, appearing to read "W. Brad Johnson".

W. Brad Johnson  
410.293.6545  
johnsonb@usna.edu

Hello Shawn!

Glad you have interest in this work. I have attached the survey. This was completed by an M.A. student at the Naval Postgraduate School, Bret Baker.

Best of luck with your work.

Brad Johnson

---- Original message ----

>Date: Thu, 21 Feb 2008 09:06:58 -0600

>From: "OMailia, Shawn P Civ USAF AETC AU/CFAB" <Shawn.OMailia@MAXWELL.AF.MIL>

>Subject: The Prevalence and Nature of Service Academy Mentoring: A Study of Navy Midshipmen

>To: <johnsonb@usna.edu>

>

> Sir, I am writing you from Air University at Maxwell  
> AFB. I recently came across your article noted in  
> the subject line above. My interest was piqued as  
> the Director of Institutional Research at Air  
> University and as a doctoral student in the  
> administration of higher education at Auburn  
> University.

>

>

>

> I would like to request a copy of your survey  
> instrument to determine if there is applicability  
> here at Air University.

>

>

>

> Thank you in advance for you time and consideration.

>

>

>

> v/r

>

>

>

> Shawn O.

>

>

>

> Mr. Shawn P. O'Mailia  
> Chief, Institutional Research  
> Air University (AU/CFAI)  
> 55 LeMay Plaza South  
> Maxwell AFB AL 36112-5944

>

> (334) 953-4151 \* (DSN) 493-4151

> [shawn.omialia@maxwell.af.mil](mailto:shawn.omialia@maxwell.af.mil)

APPENDIX C  
USAFA MENTORING SURVEY

**USAFA Cadet Mentoring Relationships Survey**  
 USAFA SCN: 09-12  
 USAFA Protocol: #FAC20090041E  
 AUBURN University Protocol: #09-141 EX 0905

The following questions pertain to your experience of having been mentored.

Mentoring is a personal relationship in which a more experienced person acts as a guide, role model, and teacher to a less experienced person. Mentors provide knowledge, advice, challenges, counsel and strong support in the junior person's pursuit of becoming a full member of the profession--the military in this case.

With this idea in mind, please answer the following questions in regard to mentoring as you may have experienced it at the United States Air Force Academy (USAFA).

**Part I - Demographic Information**

1. What is your current order of merit?	Top 25%	2nd 25%	3rd 25%	Bottom 25%
a. Academic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Military	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. PEA (Physical Education Average)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Overall class standing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. What is your current cumulative GPA?

3. What is the highest rank you have attained?

4. Gender?  
 Male  Female  
 No  Yes (Specify)

5. Age?

6. Have you ever held a leadership position on an USAFA sports team?  
 No  Yes (Specify)

7. What is your class?  
 C1C  C2C  C3C  C4C

8. What is your race/ethnic group?  
 Caucasian  African American  Hispanic/Latino  Asian  Other (Specify)

9. Do you have prior military service?  
 No  Yes (Specify) Number of Years

**USAFA Cadet Mentoring Relationships Survey**  
 USAFA SCN: 09 -12  
 USAFA Protocol: #FAC20090041E  
 AUBURN University Protocol: #09 -141 EX 0905

**Part II - General Mentoring Information**

10. Using a scale of 1 to 10, please rate the extent to which the following persons could reasonably serve as a mentor to you as a Cadet?	1 (Very Low)	2	3	4	5 (Moderate)	6	7	8	9	10 (Very High)
a. Instructors / Professors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Peers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Company Officers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Chaplains	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Athletic Coaches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Have you ever had a mentor who is part of the USAFA community (Cadet, Company Officer, coach, professor, etc.)?
- Yes  No
12. Have you ever been a mentor to anyone at the USAFA?
- Yes  No
13. Please rate your current intent to remain in the Military for a career.
- 1 (Positive) WILL stay in  2  3 (Don't know)  4  5 (Positive) will NOT stay in
14. In general, I attribute my success at the USAFA to Myself.
- Strongly Agree  Agree  Neither Agree nor Disagree  Disagree  Strongly Disagree
15. In general, I attribute my success at the USAFA to my Mentor(s).
- Strongly Agree  Agree  Neither Agree nor Disagree  Disagree  Strongly Disagree  Not Applicable
16. In general, I attribute my success at the USAFA to \_\_\_\_\_ (specify positions, not individuals).
- 
17. Rate your overall level of satisfaction with the USAFA.
- Extremely Satisfied  Very Satisfied  Unsatisfied  Dissatisfied  Very Dissatisfied  Extremely Dissatisfied

**USAF Cadet Mentoring Relationships Survey**  
 USAFA SCN: 09 -12  
 USAFA Protocol: #FAC20090041E  
 AUBURN University Protocol: #09 -141 EX 0905

18. How many mentors have you had at the USAFA?
19. How many of these mentors were military personnel?
- 20a. Have you ever had a mentor / mentors outside of the USAFA?  
 No  Yes (how many?)
- 20b. If not, why not?  
 I do not feel I need or needed a mentor  I have been unable to find a mentor  Other (Explain)
21. Overall, I consider mentoring relationships at the USAFA to be:  
 (Extreme) important  Moderately important  Neither important nor Unimportant  Moderately Unimportant  (Extreme) Unimportant
22. It is my impression that female Cadets are just as likely as male Cadets to be mentored at the USAFA?  
 Strongly Agree  Agree  Neither Agree nor Disagree  Disagree  Strongly Disagree

**Part III - Single Most Influential Mentor**

When answering the remaining questions, please focus on you **Single Most Influential Mentor**, while at the USAFA. If you have never had a mentor, you may stop (please select the "Next" button two times and then the "Finish" button to submit your survey inputs.

Describe who your <b>MOST</b> influential mentor was (specific names not needed, just position or role).	What were some attributes which made them <b>MOST</b> influential?
23. Most Influential Mentor.	
24a. Was your most influential mentor in the military? <input type="radio"/> No <input type="radio"/> Yes (Specify Rank (i.e. Capt, 01, 06, etc.)) <input type="text"/>	
24b. If no, describe who your most influential USAFA mentor (no specific names please)? <input style="width: 100%; height: 100px;" type="text"/>	

**USAFA Cadet Mentoring Relationships Survey**  
 USAFA SCN: 09 -12  
 USAFA Protocol: #FAC20090041E  
 AUBURN University Protocol: #09 -141 EX 0905

25. What was your mentor's gender?  
 Male  Female

26. What is your mentor's racial/ethnic group?  
 Caucasian  African American  Hispanic/Latino  Asian  Other (Specify)

27. Was/Is your mentor older than you?  
 No  Yes (Approximate) how many years older?

28. How long has or did your mentoring relationship last?  
 Years  ?? Months  ??

29. Who initiated the mentoring relationship?  
 I did  They did  Other (Specify)

30. Using the scale to the right, please rate the following mentor characteristics in terms of how descriptive they are of your mentor.

	Strongly Agree	Moderately Agree	Neither Agree nor Disagree	Moderately Disagree	Strongly Disagree
a. Strong Leader	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Honest / Ethical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Intelligent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Warm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Caring (genuinely concerned)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Wise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Humorous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**USFA Cadet Mentoring Relationships Survey**  
**USFA SCN: 09 -12**  
**USFA Protocol: #FAC20090041E**  
**AUBURN University Protocol: #09 -141 EX 0905**

31. Overall, how important was the mentoring relationship for your Personal growth?  
 Extremely important     Moderately important     Neither important nor Unimportant     Moderately Unimportant     Extremely Unimportant

32. Overall, how important was the mentoring relationship for your Professional growth?  
 Extremely important     Moderately important     Neither important nor Unimportant     Moderately Unimportant     Extremely Unimportant

33. What expectations do you think your mentor has / had of you?

34. Did you or do you think you fulfilled those expectations?  
 Yes     No

35. Using the scale to the right, please rate the following mentor characteristics in terms of how descriptive they are of your mentor.

	Strongly Agree	Moderately Agree	Neither Agree nor Disagree	Moderately Disagree	Strongly Disagree
a. Offered me acceptance, support and encouragement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Enhanced my military career development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Assisted in establishing professional networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Increase my self-esteem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Provided emotional support / counseling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Developed my academic skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Developed my personal ethics and professional values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Enhanced my creativity and problem solving skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Increased my visibility / exposure within the organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Advocates on my behalf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Provided direct training or instruction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Served to protect me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Provided opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Helped me bypass bureaucracy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



APPENDIX D

USAFA REQUEST FOR RESEARCH EXEMPTION

**MEMORANDUM FOR:** USAFA IRB (Dr. Scott)

**FROM:** Principal Investigator (Maj Rodric Smith)

**SUBJECT:** Request for Research Exemption Final Determination

**1. Administrative Information**

**Title of protocol:** The Nature and Existence of Mentoring Relationships at the United States Air Force Academy

**Principal investigator:** Rodric Smith, Maj (Must be USAFA personnel)  
Instructor, DFBL  
DSN: 333-0757  
rodric.smith@usafa.edu

**Associate investigator(s):** Shawn P. O'Mailia, CIV  
Air University, Doctoral Candidate  
DSN: 493-4715  
shawn.omialia@maxwell.af.mil

**Organization:** USAFA/DFBL  
334-0757

**Category for exemption:**

*32 CFR 219.101(b) allows for research in the following categories to be exempt.*

**Choose the category below that is most appropriate for your research, change it from italic to standard font, and delete the other categories.**

*32 CFR 219.101(b):*

*(2) Research involving the use of survey procedures, interview procedures or observation of public behavior, unless:*

*(i) Information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and*

*(ii) Any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.*

**2. Summary of Research**

**Background, rationale, and objectives:**

There is a great deal of information in the lay literature addressing mentoring and mentoring relationships. The majority of these articles conclude that mentoring is necessary for career success and satisfaction. Generally, the scientific literature confirms the lay literature (Roche, 1979, Phillips-Jones, 1982; Torrance, 1984; Kram, 1985; Russell & Adams, 1997), where greater career satisfaction, increased competence, higher salaries, promotions, overall well-being and confidence are all stated as benefits of mentoring. More

specifically, mentoring studies targeting military environments strongly supports the aforementioned literature; however such studies are somewhat sparse.

Yoder (1992) studied mentoring in the Army Nurse Corp, where Schwerin and Bourne (1998) addressed mentoring in the Navy Medical Service Corps. Johnson et al (1999) broke out of the medical corps mold and studied retired Navy Admirals and Steinberg & Foley (1999) conducted a survey study on Commissioned and Non-Commissioned Officers in the Army. Shaffer (2003) studied the military and civilians in a training setting and McGuire (2007) sought insight from senior military officers across the services.

Missing from military studies is the effect and prevalence of mentoring of officers in training. Many studies confirm, to be successful, mentoring relationship should begin as soon as possible—as soon as an individual enters an organization, he/she should be part of a mentoring relationship (Kram, 1985; Jocobi, 1991; Newby & Heide, 1992).

Johnson (2001) and Johnson (2003) addressed the prevalence and nature of mentoring at the United States Naval Academy. Johnson et al. (2003) developed a survey, where it was confirmed that midshipmen who were mentored were more satisfied with their United States Naval Academy experience and more likely to mentor others. The study also found that female midshipmen were more likely to be mentored than their male counterparts. Johnson et al. (2003) suggests subsequent research be conducted at the United States Military Academy and the United States Air Force Academy to extend this line of research. Therefore, the purpose of this study is to determine nature and existence of mentoring relationships at the United States Air Force Academy.

#### **Specific hypotheses:**

In order to answer the research questions, the following null hypothesis were formulated:

H<sub>0</sub><sub>1</sub>: There is no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering: (a) GPA, (b) class standing, (c) overall order of merit and (d) prior military service.

H<sub>0</sub><sub>2</sub>: There is no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering: (a) race, (b) age, and (c) gender.

H<sub>0</sub><sub>3</sub>: There is no statistically significant difference between mentored USAFA Cadets and non-mentored USAFA Cadets when considering: (a) satisfaction with the USAFA, (b) plans to make the military a career, (c) mentoring of others and (d) perception of the importance of mentoring.

#### **Type of research and the study design:**

##### **Instrumentation**

The researcher plans to provide the research study subjects with a web-based mentoring survey developed and utilized by Dr. W. Brad Johnson and colleagues (Johnson 2003). This mentoring survey was developed from previous mentoring surveys (Johnson et al., 1999; Clark, Harden & Johnson, 2000; Johnson, Lall et al., 2001) and was reviewed by a panel of psychology faculty in order to obtain internal validity. Finally, the mentoring survey was reviewed and approved by the United States Naval Academy Office of Institutional Research and then provided to the Naval Academy Midshipmen to complete their research study.

##### **Data Collection Procedures**

The mentoring survey will be administered to the participants via a web-based survey during a single session. Faculty members from the USAFA Department of Leadership and Ethics will provide a standard overview of the purpose of the mentoring survey and research, followed with a link to the web-based mentoring survey.

##### **Data Analysis Procedures**

The Windows version of Statistical Package for Social Sciences (SPSS) version 16.0 will be used to analyze the data. Gender, ethnicity, class standing and other demographic data will be coded as categorical variables. Descriptive statistics will be computed for the demographic data. The Pearson's product-moment correlation

coefficient and Chi-squared distribution analysis will be conducted on variables when applicable. Pearson's product coefficient is necessary when standard deviations are finite and nonzero. Chi-squared analysis is applicable when given items can easily be counted and proven to have a specific distribution. There is a reasonable assumption and equal chance that an event will occur. In the case of this research mentored versus non-mentored cadets (Carver & Nash, 2000 and Gall, 2005).

**Experimental and recruitment procedures,**

Lt Col Douglas Lindsay and Maj Rodric Smith have agreed to offer the 422 students from the BS-310 course IAW the DFBL Department's extra credit policy.

**How the data are de-identified, if applicable:**

Initially, the mentoring relationship survey instrument is designed to limited identifiable data. Additionally, the survey is taken anonymously via a secure, web-based interface. Upon submission of their inputs, survey participants will not be approached for further or follow-up information, as it is not the researcher's desire, nor is it possible to contact survey participants because of the anonymous nature of the survey instrument.

**If the data are identifiable, how the researcher will maintain confidentiality, and why disclosure of the data would not put the subjects at any risk:**

See item above. The mentoring relationships survey possesses limited identifiable data.

**Total time required of subjects for participation:**

It is estimated that participation is approximately 30 minutes, depending upon the thoroughness of the survey participant's inputs. This is IAW the DFBL Department's extra-credit policy.

**Total number of subjects with a rationale for the sample size:**

The BS-310 course is made up of 422 students and potential survey participants. All 422 students will be offered the opportunity to participate in this study. To achieve a 95% confidence level, 201 students are desired.

**How participation will affect availability for duty of military personnel**

The mentoring relationships survey will be available for survey participants to submit their inputs for a range of 2 weeks. Participants are encouraged to participate at the time which has the least adverse impact on their time, availability and the USAFA mission.

**Cite any relevant references from the literature:**

References are provided in various questions above. Attached is a full list of the references cited.

**Time frame of study (when will it start and duration):**

Upon approval of this study, coordination with BS-310 faculty will be achieved and a time best suited for study kickoff will be determined. Once such a time has been established, survey participants will have two weeks to provide their inputs, of which it is estimated that approximately 30 minutes will be required to provide their inputs. Once the two week period has expired, participation will be evaluated and additional time may be allowed for further participation, if necessary.

**3. Attachments**

- Supporting documents (*if applicable*).

## References

(References in *Red, Bold, Italic* text are those cited in the attached document. References in **BLACK** are provided as additional support)

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APPENDIX E

USAFA REQUEST FOR RESEARCH EXEMPTION APPROVAL:

PROTOCOL FAC20090041E



**APPENDIX E—EXEMPTION LETTER**  
**DEPARTMENT OF THE AIR FORCE**  
**HEADQUARTERS UNITED STATES AIR FORCE ACADEMY**

MEMORANDUM FOR MAJ RODRIC SMITH

16 April 2009

FROM: HQ USAFA/XPN

SUBJECT: Protocol FAC20090041E Exempt Status

1. The HQ USAFA Institutional Review Board considered your request for exempt status for FAC20090041E – The Nature and Existence of Mentoring Relationships at the USAFA. Your request and any required changes were deemed exempt from IRB oversight in accordance with 32 CFR 219.101, paragraph (b)(2)(i)(ii). The board agreed that sufficient safeguards were in place to protect research participants. Please note that the USAFA Authorized Institutional Official, HQ USAFA/CV and the Surgeon General's Research Oversight & Compliance Division, HQ AF/SGRC review all USAFA IRB actions and may amend this decision or identify additional requirements.
2. The protocol will be considered closed, but will be retained in XPN for 5 years then sent to permanent storage for 25 years. As the principal investigator on the study, the Biomedical Research and Compliance Office of the Surgeon General's Office requires that you retain your data, reports, etc. for 3 years following completion of the study.
3. If the conditions under which you have been granted exempt status change, you must notify the IRB Chair or IRB Administrator immediately. We will advise you on whether additional IRB review is required.
4. Please use tracking number FAC20090041E in any correspondence regarding this protocol. If you have any questions or if I can be of further assistance, please don't hesitate to contact me at 333-6593 or the IRB Chair, Dr. Wilbur Scott at 333-6740.

GAIL B. ROSADO  
HQ USAFA IRB Administrator



APPENDIX F

USafa SURVEY CONTROL NUMBER



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS UNITED STATES AIR FORCE ACADEMY  
USAF ACADEMY COLORADO

MEMORANDUM FOR HQ USAFA/DFBL  
Maj Rodric Smith

1 May 2009

FROM: HQ USAFA/XPA

SUBJECT: *The Nature and Existence of Mentoring Relationships at the USAFA*

1. We have received and reviewed your recent submittal of the *The Nature and Existence of Mentoring Relationships at the USAFA* in accordance with AFI 36-2601 and USAFA Supplement 1, Air Force Personnel Survey Program.
2. The following USAFA Survey Control Number (USAFA SCN) has been assigned to your instrument: **USAFA SCN 09-12**. This control number expires on 1 May 2010. Please obtain a new SCN from HQ USAFA/XPA if you revise the current instrument in any way before this date. Additionally, if the instrument has not been revised, and you plan to administer it after the expiration date, you must request a new survey control number. The entire control number and expiration date must be centered beneath the title on the first page of your instrument.
3. Be aware that based on the Superintendent's guidance, proper approval procedures must be followed if you pursue release of any results associated with this instrument, in a public forum (e.g., journal articles, symposium proceedings). Please be advised that members of the general public may obtain these survey results via the Freedom of Information Act (FOIA).
4. Per USAFA Supplement 1, all survey materials (survey instrument, data elements, feedback measures, reports/briefings) must be maintained for a period of 3 years. Additionally, please ensure copies of all these materials are forwarded to XPA.
5. We suggest you keep this memo on file to show that this instrument has been through the proper approval process. Should you require additional assistance regarding this approval, please contact XPA at extension 333-6481.

//signed//  
Nancy Bogenrief  
Survey Control Officer

1<sup>st</sup> Ind, HQ USAFA/XP

~~Approved / Disapproved~~

PATRICIA D. EGLESTON, Lt Col, USAF  
Chief, Institutional Assessment

APPENDIX G

AUBURN IRB PROTOCOL REVIEW SUBMISSION

**AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMANSUBJECTS  
RESEARCH PROTOCOL REVIEW FORM**

For information or help contact THE OFFICE OF HUMAN SUBJECTS RESEARCH, 307 Samford Hall, Auburn University  
Phone: 334-844-5966 e-mail: hsubjec@auburn.edu Web Address: <http://www.auburn.edu/research/vpr/ohs/>

*Complete this form using Adobe Acrobat Writer (versions 5.0 and greater). Hand written copies not accepted.*

1. PROPOSED START DATE OF STUDY: May 11, 2009

PROPOSED REVIEW CATEGORY (Check one):  FULL BOARD  EXPEDITED  EXEMPT

2. PROJECT TITLE: The Nature and Existence of Mentoring Relationships at the United States Air Force Academy

3. Shawn Patrick O'Mailia Doctoral Student EFLT 334-467-5879 omailsp@auburn.edu  
 PRINCIPAL INVESTIGATOR TITLE DEPT PHONE AU E-MAIL  
549 Hollow Wood Rd., Montgomery AL 36109 shawn.omailia@maxwell.af.mil  
 MAILING ADDRESS FAX ALTERNATE E-MAIL

4. SOURCE OF FUNDING SUPPORT:  Not Applicable  Internal  External Agency: \_\_\_\_\_  Pending  Received

5. LIST ANY CONTRACTORS, SUB-CONTRACTORS, OTHER ENTITIES OR IRBs ASSOCIATED WITH THIS PROJECT:  
The United States Air Force Academy IRB (see Appendix E for USAFA IRB Exemption)

6. GENERAL RESEARCH PROJECT CHARACTERISTICS

6A. Mandatory CITI Training	6B. Research Methodology
Names of key personnel who have completed CITI: <u>Shawn P. O'Mailia</u> <u>Dr. Allen Dyal</u> <u>Dr. Hank Williford</u> <u>Dr. David DiRamio</u> _____ _____ CITI group completed for this study: <input checked="" type="checkbox"/> Social/Behavioral <input type="checkbox"/> Biomedical Protocol-Specific modules completed: <input type="checkbox"/> Genetic <input type="checkbox"/> Vet.'s Administration <input type="checkbox"/> International <input type="checkbox"/> Prisoner Research <input type="checkbox"/> Public School Students <input type="checkbox"/> Pregnant Women/Fetuses Other <u>USAFA Modules</u> _____ _____ _____	Please check all descriptors that best apply to the research methodology. Data Source(s): <input checked="" type="checkbox"/> New Data <input type="checkbox"/> Existing Data Will data be recorded so that participants can be directly or indirectly identified? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Data collection will involve the use of: <input type="checkbox"/> Educational Tests (cognitive diagnostic, aptitude, etc.) <input type="checkbox"/> Interview / Observation <input checked="" type="checkbox"/> Surveys / Questionnaires <input type="checkbox"/> Physical / Physiological Measures or Specimens (see Section 6E.) <input type="checkbox"/> Internet / electronic <input type="checkbox"/> Private records or files <input type="checkbox"/> Audio / Video / Photos

6C. Participant Information	6D. Risks to Participants
Please check all descriptors that apply to the participant population. <input checked="" type="checkbox"/> Males <input checked="" type="checkbox"/> Females <input type="checkbox"/> AU students Vulnerable Populations <input type="checkbox"/> Pregnant Women/Fetuses <input type="checkbox"/> Children and/or Adolescents (under age 19 in AL) <input type="checkbox"/> Prisoners Persons with: <input type="checkbox"/> Economic Disadvantages <input type="checkbox"/> Physical Disabilities <input type="checkbox"/> Educational Disadvantages <input type="checkbox"/> Intellectual Disabilities Do you plan to compensate your participants? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Please identify all risks that participants might encounter in this research. <input type="checkbox"/> Breach of Confidentiality* <input type="checkbox"/> Coercion <input type="checkbox"/> Deception <input type="checkbox"/> Physical <input type="checkbox"/> Psychological <input type="checkbox"/> Social <input checked="" type="checkbox"/> None <input type="checkbox"/> Other _____ _____ _____ *Note that if the investigator is using or accessing confidential or identifiable data, breach of confidentiality is always a risk.

**6E. Institutional Biosafety Approval**

Do you need IBC Approval for this study?  No  Yes - BUA # \_\_\_\_\_ Expiration date \_\_\_\_\_

**FOR OHSR OFFICE USE ONLY**

DATE RECEIVED IN OHSR: \_\_\_\_\_ by \_\_\_\_\_ PROTOCOL # \_\_\_\_\_  
 DATE OF IRB REVIEW: \_\_\_\_\_ by \_\_\_\_\_ APPROVAL CATEGORY: \_\_\_\_\_  
 DATE OF IRB APPROVAL: \_\_\_\_\_ by \_\_\_\_\_ INTERVAL FOR CONTINUING REVIEW: \_\_\_\_\_  
 COMMENTS: \_\_\_\_\_

7. PROJECT ASSURANCES

PROJECT TITLE: The Nature and Existence of Mentoring Relationships at the United States Air Force Academy

**A. PRINCIPAL INVESTIGATOR'S ASSURANCES**

1. I certify that all information provided in this application is complete and correct.
2. I understand that, as Principal Investigator, I have ultimate responsibility for the conduct of this study, the ethical performance this project, the protection of the rights and welfare of human subjects, and strict adherence to any stipulations imposed by the Auburn University IRB.
3. I certify that all individuals involved with the conduct of this project are qualified to carry out their specified roles and responsibilities and are in compliance with Auburn University policies regarding the collection and analysis of the research data.
4. I agree to comply with all Auburn policies and procedures, as well as with all applicable federal, state, and local laws regarding the protection of human subjects, including, but not limited to the following:
  - a. Conducting the project by qualified personnel according to the approved protocol
  - b. Implementing no changes in the approved protocol or consent form without prior approval from the Office of Human Subjects Research
  - c. Obtaining the legally effective informed consent from each participant or their legally responsible representative prior to their participation in this project using only the currently approved, stamped consent form
  - d. Promptly reporting significant adverse events and/or effects to the Office of Human Subjects Research in writing within 5 working days of the occurrence.
5. If I will be unavailable to direct this research personally, I will arrange for a co-investigator to assume direct responsibility in my absence. This person has been named as co-investigator in this application, or I will advise OHSR, by letter, in advance of such arrangements.
6. I agree to conduct this study only during the period approved by the Auburn University IRB.
7. I will prepare and submit a renewal request and supply all supporting documents to the Office of Human Subjects Research before the approval period has expired if it is necessary to continue the research project beyond the time period approved by the Auburn University IRB.
8. I will prepare and submit a final report upon completion of this research project.

My signature indicates that I have read, understand and agree to conduct this research project in accordance with the assurances listed above.

Shawn Patrick O'Mailia

Apr 17, 2009

Printed name of Principal Investigator

Principal Investigator's Signature

Date

**B. FACULTY ADVISOR/SPONSOR'S ASSURANCES**

1. By my signature as faculty advisor/sponsor on this research application, I certify that the student or guest investigator is knowledgeable about the regulations and policies governing research with human subjects and has sufficient training and experience to conduct this particular study in accord with the approved protocol.
2. I certify that the project will be performed by qualified personnel according to the approved protocol using conventional or experimental methodology.
3. I agree to meet with the investigator on a regular basis to monitor study progress.
4. Should problems arise during the course of the study, I agree to be available, personally, to supervise the investigator in solving them.
5. I assure that the investigator will promptly report significant adverse events and/or effects to the OHSR in writing within 5 working days of the occurrence.
6. If I will be unavailable, I will arrange for an alternate faculty sponsor to assume responsibility during my absence, and I will advise the OHSR by letter of such arrangements. If the investigator is unable to fulfill requirements for submission of renewals, modifications or the final report, I will assume that responsibility.
7. I have read the protocol submitted for this project for content, clarity, and methodology

Dr. Allen Dyal, Dissertation Committee Chair

Printed name of Faculty Advisor / Sponsor

Signature

Date

**C. DEPARTMENT HEAD'S ASSURANCE**

By my signature as department head, I certify that I will cooperate with the administration in the application and enforcement of all Auburn University policies and procedures, as well as all applicable federal, state, and local laws regarding the protection and ethical treatment of human participants by researchers in my department.

Dr. Jose R. Llanes, Prof. & Dept. Head, EFLT

Printed name of Department Head

Signature

Date

8. **PROJECT OVERVIEW:** Prepare an abstract that includes:

(400 word maximum, in language understandable to someone who is not familiar with your area of study):

- I.) A summary of relevant research findings leading to this research proposal, (*Cite sources; include a "Reference List" as Appendix A.*)
- II.) A brief description of the methodology,
- III.) Expected and/or possible outcomes, and,
- IV.) A statement regarding the potential significance of this research project.

The military is an organization where junior officers and junior enlisted (protege) might benefit from being mentored by more senior officers and senior enlisted personnel (mentor). In fact, mentoring is suggested as a potential mechanism to ensure and determine military readiness.

A great deal of evidence exists in the scientific literature as to the effectiveness and positive impact of mentoring relationships (Burke, 1984; Torrance, 1984; Kram, 1985; Kram, 1988). Unfortunately, scientific studies addressing the existence and nature of mentoring in the military environment is somewhat limited. Specifically, most military studies addressing mentoring investigate the Naval Nursing Corps, one study investigated Naval Admirals (Johnson, 1999) and two investigate the Naval Academy Midshipmen (Johnson, 2001; Johnson, 2003). No scientific literature was found, which addressed the nature and existence of mentoring at the United States Air Force Academy (USAFA).

Therefore, the purpose of this study is to determine the nature and extent of mentoring relationships at the USAFA. Specifically, is there a significant difference between mentored and non-mentored USAFA Cadets relative to 1) GPA, 2) class standing, 3) overall order of merit, 4) race, 5) age, and 6) gender. Dependent variables such as 1) satisfaction with the USAFA, 2) plans to make the military a career, 3) mentoring of others, and 4) perception of the importance of mentoring will also be investigated.

In order to investigate the nature and extent of mentoring relationships at the USAFA, Cadets from four classes (C1C to C4C [comparable to Senior to Freshman]) will be administered the attached survey, via a secure internet link. The survey instrument was developed by Dr. W. Brad Johnson of the U.S. Naval Academy (USNA) from previous mentoring research and validated by USNA Faculty and the USNA Office of Institutional Research. Johnson (2003) administered the mentoring survey to USNA Midshipmen.

It is projected that mentoring cadets may out perform non-mentored cadets. Further, we expect mentored cadets to have a more favorable perception of mentoring, which should impact satisfaction and desire to pursue a military career. The potential impact of this line of research could aid in the determination of military readiness.

9. **PURPOSE.**

- a. Clearly state all of the objectives, goals, or aims of this project.

Limited published studies were found in a literature review which addressed the mentoring relationships of officers in training. Perhaps knowing the existence and nature of mentoring relationships of United States Air Force Academy Cadets might extend mentoring and mentoring relationships at the Academy. Doing so may increase a Cadet's satisfaction with the USAFA and may encourage them to make the military a career. Further, mentoring may impact GPA, class standing and overall order of merit, as well as cause Cadets to mentor others more frequently and view mentoring as being more important.

- b. How will the results of this project be used? (e.g., Presentation? Publication? Thesis? Dissertation?)

Primarily, the results of this project will serve as a dissertation of Mr. Shawn P. O'Mailia. Secondly, further publications may result from this investigation.



12. PARTICIPANTS.

a. Describe the participant population you have chosen for this project.

(If data are existing, check here  and describe the population from whom data were collected.)

Data for this study will be collected from United States Air Force Academy Cadets from a pool of 422 students, enrolled in the USAFA's Behavioral Sciences 310 (Beh Sci-310) course. Three classes will be represented, C1C (Cadet 1st Class--Senior), C2C (Cadet 2nd Class--Junior), and C3C (Cadet 3rd Class--Sophomore) within the course. The following is a USAFA Beh Sci-310 course description.

Beh Sci 310. Foundations for Leadership Development. This course explores leadership development as a scientific study. Specifically, the course examines principles that will set students on a lifelong path of becoming a leader of character who treats others with respect and dignity. The academic study of leadership development will be combined with experiential exercises, case studies, and student projects designed to facilitate a deeper understanding of leadership styles and behaviors.

b. Describe why is this participant population is appropriate for inclusion in this research project. (Include criteria for selection.)

The mentoring survey will be administered to the participants via a web-based survey during a single session. Faculty members from the USAFA Department of Leadership and Ethics will provide a standard overview of the purpose of the mentoring survey and research, followed with a link to the web-based mentoring survey.

No subject is classified as being vulnerable, as the USAFA Cadets will be provided the web-based survey link and data will not be gathered which might identify an individual or an individual's responses.

c. Describe, step-by-step, all procedures you will use to recruit participants. Include in Appendix B a copy of all e-mails, flyers, advertisements, recruiting scripts, invitations, etc., that will be used to invite people to participate.

(See sample documents at <http://www.auburn.edu/research/vpr/ohs/sample.htm>.)

A generic recruitment form, approved by the USAFA IRB and USAFA/DFBL Department will be posted on the USAFA/DFBL Research Bulletin Board to recruit participants. Additionally, the faculty of the Beh Sci-310 (Lt Col Douglas Lindsey and Maj Rodric Smith) will provide a brief overview of the purpose this research study.

What is the minimum number of participants you need to validate the study? <sup>201</sup> \_\_\_\_\_

Is there a limit on the number of participants you will recruit?  No  Yes – the number is 422

Is there a limit on the number of participants you will include in the study?  No  Yes – the number is 422

d. Describe the type, amount and method of compensation and/or incentives for participants.

(If no compensation will be given, check here .)

Select the type of compensation:  Monetary  Incentives

Raffle or Drawing incentive (Include the chances of winning.)

Extra Credit (State the value)

Other

Description:

As per the USAFA/DFBL Extra Credit Policy (See Appendix G), study participants will be given extra credit for their participation. The following is an excerpt from the form at Appendix G: "My participation in this study resulted in \_\_\_\_\_ unit(s) of research time. Each unit represents roughly 30 minutes of participation and translates to 1% extra credit in the course." It is estimated that time for participation in this study will be approximately 30 minutes; therefore, participants should expect to receive 1% extra credit for their participation per the USAFA/DFBL Extra Credit Policy.



13. PROJECT DESIGN & METHODS.

a. Describe, step-by-step, all procedures and methods that will be used to consent participants.

(  Check here if this is "not applicable"; you are using existing data.)

This study is being accomplished via a SSL-secure web-based survey. Accordingly, survey participant will be provided an overview of the purpose of this research study by USAFA/DFBL Faculty (Lt Col Douglas Lindsay & Maj Rodric Smith). Additionally, potential survey participants will be directed to the USAFA/DFBL Research Bulletin Board for further information regarding this study (see Appendix B). Once at the USAFA/DFBL Research Bulletin Board, a link to the research study survey will be available; along with information regarding the purpose, protocol and benefits of participation. Once a survey participant has taken the steps to navigate to the web-based survey, the first screen they will see will be a reiteration of the information they were provided at the USAFA/DFBL Research Bulletin Board. In addition to the aforementioned information, survey participants will be informed that their participation is not mandatory and they may self-eliminate themselves at anytime, for whatever reason, without any negative consequences. Survey participants will be considered providing "consent" by their advancement into and their submission of the web-based survey.

b. Describe the procedures you will use in order to address your purpose. Provide a step-by-step description of how you will carry out this research project. Include specific information about the participants' time and effort commitment. (NOTE: Use language that would be understandable to someone who is not familiar with your area of study. Without a complete description of all procedures, the Auburn University IRB will not be able to review this protocol. If additional space is needed for this section, save the information as a .PDF file and insert after page 6 of this form.)

In order to address and investigate the nature and existence of mentoring and mentoring relationships at the United States Air Force Academy, data for this study will be collected from United States Air Force Academy Cadets coming from a pool of 422 students, enrolled in the USAFA's Behavioral Sciences 310 (Beh Sci-310) course. Three classes will be represented, C1C (Cadet 1st Class--Senior), C2C (Cadet 2nd Class--Junior), and C3C (Cadet 3rd Class--Sophomore) within the course.

Beh Sci-310 is the course code for the USAFA's Foundations for Leadership Development course. Accordingly, mentoring is often considered an integral part of leadership and leadership studies. The following is the full course description of the USAFA's Beh Sci-310 course:

Beh Sci 310. Foundations for Leadership Development. This course explores leadership development as a scientific study. Specifically, the course examines principles that will set students on a lifelong path of becoming a leader of character who treats others with respect and dignity. The academic study of leadership development will be combined with experiential exercises, case studies, and student projects designed to facilitate a deeper understanding of leadership styles and behaviors.

13c. List all data collection instruments used in this project, in the order they appear in Appendix C.

(e.g., surveys and questionnaires in the format that will be presented to participants, educational tests, data collection sheets, interview questions, audio/video taping methods etc.)

The instrument being utilized to collect data for this study is a 35 item web-based survey. The 40 items mentioned, have some sub-items which total 71 sources of data. Attached at Appendix C is a copy of the survey instrument, which will be presented to the subjects via a web-based interface.

d. Data analysis: Explain how the data will be analyzed.

The Windows version of Statistical Package for Social Sciences (SPSS) version 16.0 will be used to analyze the data. Gender, ethnicity, class standing and other demographic data will be coded as categorical variables. Descriptive statistics will be computed for the demographic data. The Pearson's product-moment correlation coefficient and Chi-squared distribution analysis will be conducted on variables when applicable. Pearson's product coefficient is necessary when standard deviations are finite and nonzero. Chi-squared analysis is applicable when given items can easily be counted and proven to have a specific distribution.

14. RISKS & DISCOMFORTS: List and describe all of the risks that participants might encounter in this research. *If you are using deception in this study, please justify the use of deception and be sure to attach a copy of the debriefing form you plan to use in Appendix D.* (Examples of possible risks are in section #6D on page 1.)

The risk of participating in this research study are nearly non-existent. Participants are virtually anonymous, as far as identifying data is considered. The only way participants will be identified, is when the participant provides their request for extra credit to the USAFA/DFBL Faculty member. However, there is no link to the data the survey participant submitted and the extra credit request form.

15. **PRECAUTIONS.** Identify and describe all precautions you have taken to eliminate or reduce risks as listed in #14. If the participants can be classified as a "vulnerable" population, please describe additional safeguards that you will use to assure the ethical treatment of these individuals. Provide a copy of any emergency plans/procedures and medical referral lists in Appendix D.
- First, the data collection instrument is provided via a web-based survey interface. Secondly, limited demographic data will be collected from survey participants. Thirdly, such demographic data will not be used to "attempt" to identify survey participants. Fourthly, survey participants will be provided with a "Thank You for Participating" printout, at the conclusion of their survey submission. Accordingly, there will not be any sort of time stamp or other information, which might appear to attempt participant identification.

If using the Internet to collect data, what confidentiality or security precautions are in place to protect (or not collect) identifiable data? Include protections used during both the collection and transfer of data.

*(These are likely listed on the server's website.)*

First, the study/survey includes very limited demographic data. However, to protect these data and all other data, this survey will be hosted on a secure (SSL), United States Air Force server. SSL allows for no identifiable data to be passed from the users computer over the internet to the secure survey server. To access the survey participant database, an encrypted user name and password. Additionally, this researcher's computer is secured with a Common Access Card (CAC) with Public Key Infrastructure (PKI) digital "certificates." These safeguards make it virtually impossible for an individual to act in malice. However, if one were to be able to negotiate and defeat the above security apparatus, they would still be left with limited demographic data.

16. **BENEFITS.**

- a. List all realistic direct benefits participants can expect by participating in this specific study.

*(Do not include "compensation" listed in #12e.)* Check here if there are no direct benefits to participants.

First, reflection on prior experiences serves as a powerful teaching tool. In this case, survey participants will be asked about their various mentoring experiences. If, by chance, a survey participant has limited mentoring experiences, it is this investigators hope that such persons might actively seek out mentoring relationships as a result of this study. Secondly, the results of this study, as well as, recommendations will be provided to the USAFA Department of Behavioral Sciences & Leadership. The potential for the inclusion of such information within the USAFA curricula is great. If such inclusion should occur, the benefits of this study may reach far beyond its original participants and could impact USAFA Cadets for years to come.

- b. List all realistic benefits for the general population that may be generated from this study.

As mentioned in "16a" above, the results of this study and recommendations will be provided to the USAFA. Accordingly, these results have to potential to effect change within the USAFA and how they teach and train their Cadets. Benefits, such as more effective leaders and greater force development are all potential benefits. USAFA Cadets are the future leaders of the Air Force and will therefore serve as role models and spokespersons for the United States Air Force, Department of Defense and the United States as a whole. Therefore, having prepared leaders and mentors is paramount, as one only has to look at such instances as Abu Ghraib and the like to understand the potential impact the absence of such benefits might occur.

17. PROTECTION OF DATA.

- a. Will data be collected as anonymous?  Yes  No If "YES", skip to part "g".  
(*"Anonymous" means that you will not collect any identifiable data.*)
- b. Will data be collected as confidential?  Yes  No  
(*"Confidential" means that you will collect and protect identifiable data.*)
- c. If data are collected as confidential, will the participants' data be coded or linked to identifying information?  
 Yes (If so, describe how linked)  No

d. Justify your need to code participants' data or link the data with identifying information.

e. Where will code lists be stored? (Building, room number?)

f. Will data collected as "confidential" be recorded and analyzed as "anonymous"?  Yes  No  
(If you will maintain identifiable data, protections should have been described in #15.)

g. Describe how and where the data will be stored (e.g., hard copy, audio cassette, electronic data, etc.), and how the location where data is stored will be secured in your absence. For electronic data, describe security. If applicable, state specifically where any IRB-approved and participant-signed consent documents will be kept on campus for 3 years after the study ends. Initially, data will be collected via a web-based survey and stored on a secure .mil web-server. Upon completion of data collection, the data will be downloaded to a SPSS compatible format on to this researcher's work computer. This researcher's computer is secured with a Common Access Card (CAC) with Public Key Infrastructure (PKI) digital "certificates." Accordingly, only this researcher has access to this computer workstation and the data and files. Additionally, the collected data will be printed into hard copy form and stored in a locked filing cabinet, within the researcher's secure/locked office on Maxwell AFB, AL.

h. Who will have access to participants' data?

(*The faculty advisor should have full access and be able to produce the data in the case of a federal or institutional audit.*)  
This researcher (Shawn P. O'Mailla) and the members of the researcher's dissertation committee (Dr. Allen Dyal, Dr. Hank Williford and Dr. David DiRamio) will have access to participant's data. USAFA/DFBL (Lt Col Lidsey and Maj Smith) will not be provided participant data, however, USAFA/DFBL will be provided an outbrief of major findings at the conclusion of this study. Not individual nor aggregate data will be transferred or provided to the United States Air Force Academy. Such precautions are being exercised to remove any appearance or chance of any USAFA personnel attempting to identify survey participants.

i. When is the latest date that confidential data will be retained? (Check here if only anonymous data will be retained. )  
Though the data is considered to be "anonymous" this researcher sees no reason to retain such data. Therefore upon completion the study, such data will be destroyed.

j. How will the confidential data be destroyed? (*NOTE: Data recorded and analyzed as "anonymous" may be retained indefinitely.*)  
N/A

## PROTOCOL REVIEW CHECKLIST

All protocols must include the following items:

1.  Research Protocol Review Form (All signatures included and all sections completed)

FROM THIS SECTION ON, FOR FULL BOARD REVIEW,  
PLEASE NUMBER YOUR APPENDICES CONSEQUETIVELY FROM THIS PAGE ON, BEGINNING WITH PAGE 11.

(Examples of appended documents are found on the OHSR website: <http://www.auburn.edu/research/vpr/ohs/sample.htm> )

2.  Consent Form or Information Letter and any Releases (audio, video or photo) that the participant will sign.
3.  Appendix A, "Reference List"
4.  Appendix B if e-mails, flyers, advertisements, generalized announcements or scripts, etc., are used to recruit participants.
5.  Appendix C if data collection sheets, surveys, tests, other recording instruments, interview scripts, etc. will be used for data collection. Be sure to attach them in the order in which they are listed in # 13c.
6.  Appendix D if you will be using a debriefing form or include emergency plans/procedures and medical referral lists (A referral list may be attached to the consent document).
7.  Appendix E if research is being conducted at sites other than Auburn University or in cooperation with other entities. A permission letter from the site / program director must be included indicating their cooperation or involvement in the project. NOTE: If the proposed research is a multi-site project, involving investigators or participants at other academic institutions, hospitals or private research organizations, a letter of IRB approval from each entity is required prior to initiating the project.
8.  Appendix F - Written evidence of acceptance by the host country if research is conducted outside the United States.

APPENDIX H

AUBURN IRB PROTOCOL APPROVAL

From: Human Subjects  
To: O'malia, Shawn  
CC: Dyal, Allen; Lianes, Jose  
Date: Wednesday - June 17, 2009 1:47 PM  
Subject: Revisions to protocol #09-141 EX 0905, approved

Dear Mr. O'Malia,

Your revisions to your protocol entitled "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy" have been reviewed. The protocol has now been approved as "Exempt". We will soon be forwarding your approval letter to you, to your Montgomery address.

The approved information letter is attached. (Your attachment would not open without formatting problems, so I transferred the info to Word and created an .rtf document. I also deleted the duplicate info at the end which I just noticed. If this is not acceptable, please let me know.) You must use that version of the stamped copy when you consent participants. Once you have posted the letter online, you may begin your study. Please forward the link to the survey so that we may print a final copy for our files.

Your protocol will expire on May 13, 2010. Put that date on your calendar now. About three weeks before that time you will need to submit a final report or renewal request.

If you have any questions, please let us know.

Best wishes for success with your research!  
Susan

Susan Anderson, M.S., CIM  
IRB/OHSR Administrator  
Office of Human Subjects Research  
307 Samford Hall  
Auburn University, AL 36849  
(334) 844-5966  
hsubjec@auburn.edu



AUBURN  
UNIVERSITY

Office of Human Subjects Research  
307 Sanford Hall  
Auburn University, AL 36849

Telephone: 334-844-5966  
Fax: 334-844-4391  
hsubject@auburn.edu

June 18, 2009

MEMORANDUM TO: Shawn Patrick O'Mailia  
Education Foundation Leadership Technology

PROTOCOL TITLE: "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy"

IRB FILE NO.: 09-141 EX 0905

APPROVAL DATE: May 14, 2009  
EXPIRATION DATE: May 13, 2010

The referenced protocol was approved "Exempt" on May 14, 2009 under 45 CFR 46.101 (b) (2):

"Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:

- (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and
- (ii) any disclosure of the human subjects' response outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation."

You should retain this letter in your files, along with a copy of the revised protocol and other pertinent information concerning your study. If you should anticipate a change in any of the procedures authorized in this protocol, you must request and receive IRB approval prior to implementation of any revision. Please reference the above IRB file number in any correspondence regarding this project.

If you will be unable to file a Final Report on your project before May 13, 2010, you must submit a request for an extension of approval to the IRB no later than April 25, 2010. If your IRB authorization expires and/or you have not received written notice that a request for an extension has been approved prior to May 13, 2010 you must suspend the project immediately and contact the Office of Human Subjects Research for assistance.

A Final Report will be required to close your IRB project file. Please note that the approved, stamped version of your information letter should be provided to participants during the consent process.

If you have any questions concerning this Board action, please contact the Office of Human Subjects Research at 844-5966.

Sincerely,

Kathy Jo Ehison, RN, DSN, CIP  
Chair of the Institutional Review Board  
for the Use of Human Subjects in Research

cc: Dr. Jose Llanes  
Dr. Allen Dyal



APPENDIX I  
INFORMED CONSENT

**USAFA Cadet Mentoring Relationships Survey  
USAFA Survey Control Number: 09-12**

**Informed Consent Document**

**DEPARTMENT OF THE AIR FORCE  
USAFA/DFBL  
USAF ACADEMY, COLORADO, 80840**

**PRIVACY ACT AND FREEDOM OF INFORMATION ACT**

Privacy Issues: Records of your participation in this study may only be released in accordance with federal law. The Freedom of Information Act, 5 U.S.C. 552, the Federal Privacy Act, 5 U.S.C. 552a, and their implementing regulations may apply. I have read the Privacy Act Statement contained in DD Form 2005. I understand that records of this study may be inspected by the U.S. Food and Drug Administration (FDA), the sponsoring agency and/or their designee, if applicable.

**TITLE OF STUDY**

***"The Nature and Existence of Mentoring Relationships at the United States Air Force Academy"***

***Protocol Number and Approval Date:***

- The Auburn University Institutional Review Board has approved this document for use from May 14, 2009 to May 13, 2010. **Protocol #09-141 EX 0905.**
- The United States Air Force Academy Institutional Review Board has approved this document, assigning a survey control number of **09-12** and **Protocol #FAC20090041E.**

**INVESTIGATORS' NAME(S), DEPARTMENT(S), PHONE NUMBERS**

- Maj Rodric Smith, DFBL, DSN 333-0757
- Mr. Shawn O'Mailia, Air University, DSN 493-4715

**PURPOSE OF STUDY**

*You are asked to consider participation in a research study at USAFA, (sponsored by the DFBL Faculty, entitled "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy".*

*The purpose of the study is to determine if mentoring relationships occur at the USAFA, and if so, what is the nature of these relationships.*

*This study will enroll 422 survey participant subjects over a period of one session lasting approximately 30 minutes. Following completion of this survey, you will not be contacted further.*

## **PROCEDURES**

The procedure for participating in this study is simply to complete the following mentoring relationship survey and its submission. No other attempt will be made to contact you for follow-up information.

## **BENEFITS**

*It is the investigator's opinion that mentoring and mentoring relationships are integral for the development of effective leaders. Mentors provide knowledge, advice, challenges, counsel and strong support in the junior person's pursuit of becoming a full member of the profession--the military in this case.*

*The specific benefits of participating in this study are:*

*- Reflection on prior experiences serves as a powerful teaching tool. In this case, you will be asked about your various mentoring experiences. If, by chance, you have limited mentoring experiences, it is this investigators hope that you will actively seek out mentoring relationships as a result of this study.*

*- The results of this study, as well as, recommendations will be provided to the USAFA Department of Behavioral Sciences & Leadership. The potential for the inclusion of such information within the USAFA curricula is great. If such inclusion should occur, the benefits of this study may reach far beyond its original participants and could impact USAFA Cadets for years to come.*

## **COMPENSATION**

Students will be compensated either 1 unit of research time or 1% extra credit for their participation as subjects in this research study.

## **RISKS / INCONVENIENCES**

The only foreseeable Risk / Inconveniences to participating this study is that of the time necessary to complete this survey.

## **ALTERNATIVES**

Choosing not to participate is an alternative to participating in this study.

## **IN THE EVENT OF INJURY**

Your entitlement to medical and dental care and/or compensation in the event of injury is governed by federal laws and regulations and if you have questions about your rights or if you believe you have received a research-related injury, you may contact the USAF Academy Institutional Research and Assessment Division (HQ USAFA/XPX) at 719-333-6593, the medical monitor or the investigator.

## **OCCURRENCE OF UNANTICIPATED ADVERSE EVENT**

If an unanticipated event occurs during your participation in this study, you will be informed immediately. If you are not competent at the time to understand the nature of the event, such information will be brought to the attention of your next of kin.

#### **COMPENSATION FOR TREATMENT OF INJURY**

If you should require medical care for injuries which result from participation in this study, the medical or dental care that you are entitled to is governed by federal laws and regulations. If you have questions about your rights or if you believe you received a research-related injury, please contact the USAF Academy Institutional Research and Assessment Division (HQ USAFA/XPX) at 719-333-6593.

#### **CONFIDENTIALITY**

By participating in this study, you will be asked limited demographic questions. These questions are related to your age, race and gender. However, at no time will the investigators attempt to identify you as an individual. The investigators encourage you to not provide information in your open-ended questions which might personally identify individuals as well. When the results of the research are published or discussed in conferences, no information will be included that would reveal your identity. Complete confidentiality cannot be promised, particularly for military personnel, because information regarding your health may be required to be reported to appropriate medical or command authorities.

Your raw data inputs will only be shared between the two investigators and the three professors for Auburn University. Upon completion of this study, all data will be discarded to remove the possibility of a breach in confidentiality.

#### **QUESTIONS REGARDING PARTICIPATION IN THIS RESEARCH STUDY**

If you have questions about this research study, you should contact the principal investigators Maj Rodric Smith (DSN 333-0757) or Mr. Shawn O'Mailia (DSN 493-4715).

If you have questions about your rights as a research participant, or if you have received a research-related injury, you should contact the USAF Academy Institutional Research and Assessment Division (HQ USAFA/XPX) at 719-333-6593.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334) 844-5966 or e-mail at [hsubjec@auburn.edu](mailto:hsubjec@auburn.edu) or [IRBChair@auburn.edu](mailto:IRBChair@auburn.edu).

#### **DECISION TO PARTICIPATE**

Your participation in this project is voluntary. Your choice whether or not to participate will not affect your military or Air Force Academy career. If you decline to participate, there is no penalty or loss of benefits to which you are entitled under applicable regulations. You have the right to withdraw consent or stop participation at any time without penalty. Your withdrawal from this project will not cause loss of benefits to which you are otherwise entitled. You have the right to refuse to answer particular questions or to decline any procedure.

***Consent to Participate:***

- The decision to participate in this study is completely voluntary on my part. No one has coerced or intimidated me into participating in this program. I am participating because I want to.
- I understand that my decision about whether or not to participate will not affect my military career in any way.
- The investigators have adequately answered any questions I have about this study, my participation, and the procedures involved. I also understand that an investigator will be available to answer any questions concerning procedures throughout this study.
- I understand that if significant new findings develop during the course of this study that may relate to my decision to continue participation, I will be informed.
- I understand that I may withdraw this consent at any time and discontinue further participation in this study without prejudice to my rights.
- I also understand that the investigator may terminate my participation in this study at any time if he/she feels this to be in my best interest.
- I have read all of the above. My questions have been answered concerning areas I did not understand. I am willing to take part in this study. After I sign this form, I will receive a copy.

**By selecting " Next " below indicates my willingness to participate in this research study.**

APPENDIX J  
INVITATION(S) TO PARTICIPATE

**OMailia, Shawn P Civ USAF AETC AETC Holm Center/CRDF**

---

**To:** OMailia, Shawn P Civ USAF AETC AETC Holm Center/CRDF  
**Subject:** Invitation to participate: "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy"

From: OMailia, Shawn P Civ USAF AETC AETC Holm Center/CRDF  
Sent: Sunday, August 16, 2009 5:06 PM  
To: Survey participants removed in order to maintain confidentiality  
Cc: 'shawn.omailia@af.edu'  
Subject: Invitation to participate: "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy"

Dear USAFA Cadet,

Maj Smith and myself are conducting a research study titled, "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy." Accordingly, As a student in Course 310 in the DFBL Department we would like to invite you to participate in this study by your completion of a web-based survey.

The purpose of this study is to determine if mentoring relationships occur at the USAFA, and if so, what is the nature of these relationships.

This study will enroll 300 survey participants, who will complete a web-based survey lasting approximately 30 minutes. Following completion of this survey, you will not be contacted further. The opportunity to complete this survey is extended to all 710, Course 310 Cadets, however upon receipt of the 300th survey response, the survey link will be disabled, and no further participation will be allowed or warranted.

For the 300 Cadets participating in this study, compensation will consist of either 1 unit of research time or 1% extra credit (see attached Debriefing Receipt).

Maj Smith and I appreciate your consideration to participate in this study. If you do decide to participate, the following are two links which will take you to the web-based survey.

Primary: <https://au-survey.maxwell.af.mil/surveys/CNW6TZ/>

Alternate: <https://au-survey.maxwell.af.mil/surveys/SFY665/>

Thank you and we wish you the best.

v/r

Shawn O.

Mr. Shawn P. O'Mailia

Doctoral Candidate, Auburn University

Curriculum Technology

Holm Center/CR

Air University

501 LeMay Plaza North, Bldg 1487 Annex, Rm 205

Maxwell AFB AL 36112-6106

PROTOCOL NUMBER AND APPROVAL DATE:

- The Auburn University Institutional Review Board has approved this document for use from May 14, 2009 to May 13, 2010. Protocol #09-141 EX 0905.

- The United States Air Force Academy Institutional Review Board has approved this document, assigning a survey control number of 09-12 and Protocol #FAC20090041E.



**OMailia, Shawn P Civ USAF AETC AETC Holm Center/CRDF**

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**To:** Shawn O'malia  
**Subject:** 2nd Reminder...Invitation to Participate: "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy"

From: Shawn O'malia [mailto:omailsp@auburn.edu]  
Sent: Tuesday, August 18, 2009 11:58 AM

Cc: [shawn.omailia@af.edu](mailto:shawn.omailia@af.edu)  
Subject: 2nd Reminder...Invitation to Participate: "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy"

All, I want to thank all of you who have taken the time to complete the mentoring relationships survey, addressed below. If you have not completed the survey, I encourage you to do so, as the results will help inform curriculum development decisions for future cadets at USAFA.

Again, thank you again for your time and consideration.

v/r

Shawn O'Mailia  
Air University,  
Maxwell AFB AL

>>> "OMailia, Shawn P Civ USAF AETC AETC Holm Center/CRDF"  
<[Shawn.OMailia@maxwell.af.mil](mailto:Shawn.OMailia@maxwell.af.mil)> 08/16/09 5:07 PM >>>

Dear USAFA Cadet,

Maj Smith and myself are conducting a research study titled, "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy." Accordingly, As a student in Course 310 in the DFBL Department we would like to invite you to participate in this study by your completion of a web-based survey.

The purpose of this study is to determine if mentoring relationships occur at the USAFA, and if so, what is the nature of these relationships.

This study will enroll 300 survey participants, who will complete a web-based survey lasting approximately 30 minutes. Following completion of this survey, you will not be contacted further. The opportunity to complete this survey is extended to all 710, Course 310 Cadets, however upon receipt of the 300th survey response, the survey link will be disabled, and no further participation will be allowed or warranted.

For the 300 Cadets participating in this study, compensation will consist of either 1 unit of research time or 1% extra credit (see attached Debriefing Receipt).

Maj Smith and I appreciate your consideration to participate in this study. If you do decide to participate, the following are two links which will take you to the web-based survey.

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Thank you and we wish you the best.

v/r

Shawn O.

Mr. Shawn P. O'Mailia  
Doctoral Candidate, Auburn University  
Curriculum Technology  
Holm Center/CR  
Air University  
501 LeMay Plaza North, Bldg 1487 Annex, Rm 205 Maxwell AFB AL 36112-6106

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**OMailia, Shawn P Civ USAF AETC AETC Holm Center/CRDF**

---

To: Shawn O'malia  
Subject: RE: Final Reminder...Invitation to Participate: "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy"

From: Shawn O'malia [mailto:omails@auburn.edu]  
Sent: Tuesday, August 25, 2009 7:54 AM

Cc: [shawn.omialia@af.edu](mailto:shawn.omialia@af.edu)  
Subject: Re: Final Reminder...Invitation to Participate: "The Nature and Existence of Mentoring Relationships at the United States Air Force Academy"

All, we would like to give you one final opportunity to take the following survey:

<https://au-survey.maxwell.af.mil/surveys/CNW6TZ/>

As a reminder, the 300 Cadets who complete the survey will be compensated either 1 unit of research time or 1% extra credit (see attached Debriefing Receipt).

We want to thank you for your time and consideration regarding this endeavor.

All the best,

Shawn P. O'Mailia  
Air University  
Maxwell AFB AL

>>> Shawn O'malia 08/19/09 11:58 AM >>>

All, I want to thank all of you who have taken the time to complete the mentoring relationships survey, addressed below. If you have not completed the survey, I encourage you to do so, as the results will help inform curriculum development decisions for future cadets at USAFA.

Again, thank you again for your time and consideration.

v/r

Shawn O'Mailia  
Air University,  
Maxwell AFB AL

>>> "OMailia, Shawn P Civ USAF AETC AETC Holm Center/CRDF"  
<[Shawn.OMailia@maxwell.af.mil](mailto:Shawn.OMailia@maxwell.af.mil)> 08/16/09 5:07 PM >>>

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Thank you and we wish you the best.

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