

LEADERSHIP BEHAVIOR OF UNDERGRADUATES IN THE COLLEGE
OF AGRICULTURAL AND LIFE SCIENCES (CAL S) AT THE UNIVERSITY OF FLORIDA

By

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To my son, Jaylen, and my loving family and friends

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LIST OF DEFINITIONS

Challenging the process	Searching out challenging opportunities to change, grow, innovate, and improve, plus experimenting, taking risks, and learning from accompanying mistakes ((Kouzes & Posner, 2002).
Enabling others to act	A leadership practice that fosters collaboration with its followers by promoting cooperative goals and building trust. This practice is also about strengthening people by giving power away, providing choice, developing competence, assigning critical tasks, and offering visible support (Kouzes & Posner, 2002).
Encouraging the heart	A leadership practice that recognizes individual contributions to the success of every project. A leader who encourages the heart celebrates team accomplishments regularly (Kouzes & Posner, 2002).
Follower	An individual toward whom leadership is directed (Northouse, 2004).
Leader	A person who engages in leadership (Northouse, 2004).
Leadership	The process of influencing one or more individuals in an attempt to affect their choices of goals, and to inspire, organize, or direct their efforts to achieve the goals. The ability to see a problem, or opportunity and do something about it with other people (Northouse, 2004).
Leadership behaviors	The behaviors and acquired tasks related to leadership developed by an individual (Blanchard, 1995.; Northouse, 2004).
Leadership development	A process that will include development of interpersonal relationships, understanding the social influence process and the team dynamics between the leader and his/her team at the dyad level and linkages between the team and other groups in the organization (Bass, 1985; Blanchard, 1995.; Northouse, 2004)
Leadership styles	The characteristic manner in which an individual leads other people; patterns of leadership behavior (Moore, 2003).
Inspiring a shared vision	Envisioning an uplifting and ennobling future as a leader, and enlisting others in a common vision by appealing to their values, interests, hopes, and dreams (Kouzes & Posner, 2002).
Modeling the way	A leader sets the example by behaving in ways that are consistent with shared values. A leader who models the way loves to achieve small wins that promote consistent progress and builds commitment from followers (Kouzes & Posner, 2002).

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LEADERSHIP BEHAVIORS OF UNDERGRADUATES IN THE COLLEGE
OF AGRICULTURAL AND LIFE SCIENCES (CALs) AT THE UNIVERSITY OF FLORIDA

By

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This study identified leadership behaviors exhibited by undergraduate students enrolled in the College of Agricultural and Life Sciences (CALs) at the University of Florida in Gainesville. The study also examined the relationship between the current and previous leadership experiences of the students and their current leadership behavior. The study included 1,156 current undergraduate students randomly selected from a total population of 3,429 undergraduate CALs students. This population represented 26 majors from 35 student organizations in CALs.

A quantitative descriptive design was used to describe CALs students in terms of their personal characteristics, academic leadership experiences, student leadership experiences, and community leadership experiences. Study respondents completed an online survey that assessed their self-perceived leadership practices, as measured by the Student Leadership Practices Inventory (LPI) (Kouzes & Posner, 1998). The LPI, developed by Kouzes and Posner (1998), measured the participants' perceived importance of and proficiency in five leadership behaviors (practices): *challenging the process*, *enabling others to act*, *inspiring a shared vision*, *encouraging the heart*, and *modeling the way*. This study examined CALs students' past and present leadership experiences and personal characteristics as predictors for leadership behavior.

Using the LPI, the CALS students at the University of Florida exhibited the following leadership behaviors most often: *Enabling Others to Act*, *Encourage the Heart* and *Modeling the Way*. The CALS students, however, did not self-rate as high on leadership behaviors of *Inspiring a Shared Vision* and *Challenge the Process*.

The results are consistent with previous research of undergraduate students, where students often consider do not see themselves as trendsetters and visionaries. On average, CALS students self-rated themselves “fairly often” as defined by the LPI scoring scale. The CALS students may have inflated self-perceptions of their leadership behavior when compared to normative data for undergraduate college students in other fields. Other findings indicate that CALS students have been active in past community service opportunities and student clubs and organizations. The CALS students are very active in service and participate as officers and on the state/regional levels of their respective organizations. In various leadership experiences, CALS students are developing their leadership behaviors; conversely, they are not developing leadership behaviors through formal leadership course or leadership training at the same frequency. Overall, the study indicates that CALS students are highly motivated and exhibit high scores on the LPI leadership behavior index.

CHAPTER 1 INTRODUCTION AND PURPOSE OF THE STUDY

Agricultural leaders have traditionally played an important role in most rural communities and industries. With the agricultural field becoming more specialized and increasingly challenged, the need for leadership is greater today more than ever before (Kansas Agriculture and Rural Leadership, 2006). Beyond the agricultural industry, many agricultural communities also are being challenged. Many of the traditional agricultural communities are experiencing a decline in community development activities as compared to their urban counterparts (W.K. Kellogg Foundation, 2004). Thus there is a need for leadership, not just in agriculture, but throughout rural America as it competes in the global market place. Businesses and nonprofit organizations are finding it difficult to fill leadership positions due to a lack of properly trained leaders. Without capable leaders, agricultural firms and community organizations are prone to decay and failure (Hustedde, 1996)

Researchers who have studied the concept of leadership have indentified hundreds of definitions. Northouse (2004) defines leadership as a process of influencing one or more individuals in an attempt to affect their choices of goals, and to inspire, organize, or direct their efforts to achieve the goals. Leadership is what gives an organization its vision and its ability to translate that vision into reality (Bass & Avolio, 1993). Leaders understand that organizations and communities change internally at a much slower pace than the external environments in which they function, and must continually evolve to keep pace. Further, these environments are in constant flux and challenge the assumption of continuity on which organizations and communities are created and function. Now more than ever, there is a clear need for a greater understanding of how to lead, manage, and change organizations (Burke, 2002).

Some leadership theorists (Bolt, 1996; Gardner, 1990; Kouzes & Posner, 1990) suggest future leaders need to be able to face complexities, volatility, and the new rules of the global marketplace. Other theorists believe the deficit already exists (Moreira, 2004). This sentiment was echoed by faculty and employers in a study by Bosshamer (1996) who reported that employers and faculty projected leadership as the important behavior needed by graduates of colleges of agriculture within five years of graduation. This finding was congruent with an earlier study by Litzenberg and Schneider (1988) who predicted a lack leadership, especially among younger professionals who fail to accept and take on leadership positions. In particular, citizens must be educated and prepared with essential knowledge and skills such as competence in communication, adaptability, problem identification and problem-solving, self-management, and an understanding of levels of teamwork in order to assume leadership positions that concentrate on the concerns of rural America (Dhanakumar, Rossing, & Campbell, 1996).

Industry seeks new leaders who can lead quickly after they join an organization. College graduates, who can exhibit leadership early and often as new professionals, are likely to be hired and advance quickly in their careers. Employers want and value competence in communication, adaptability, problem identification and problem-solving, self-management, teamwork, and leadership skills (Gilmore, et al., 1999). Industry also seeks leaders who possess a well-developed clear vision for the organization. The leader's vision needs to communicate what the organization stands for and the organization's plan for the future (Schieman, 2006).

In exploring agricultural leadership, it is not different from any other field. Agricultural business, organizations, nonprofit groups, and governmental agencies need competent leaders who will provide direction and vision for the agricultural industry. Employers are seeking

leaders who can direct new initiatives and set goals essential to successfully adapting to the challenges of this changing global society (Bradner, 1999; Carter, 2004; Kelsey & Wall, 2003).

In many of today's societies, organizations are experiencing limited resources and, therefore seek leadership that is more aggressive, creative, entrepreneurial, and willing to accept and embrace change (Santora, Seaton, & Sarros, 1999). Studies indicated a growing need for leaders to understand and cope with the many changes that are currently and potentially impacting their community (Fredricks, 1998; Kelsey & Wall, 2003; Wilkinson, 1998). This lack of change management has also been described as a "leadership void" (Burns, 1979; DeRuyver, 2001; Figura, 1999; Goldsmith, Greenberg, Robertson, & Hu-Chan, 2003; Ricketts & Rudd, 2001). This leadership void could also be more accurately described as lack of appropriate leadership training and development in areas that deal with change and chaos. Other leaders are not as prepared to effectively lead, manage change, and adjust to demands of global society. This leadership void has become so serious that some now than contend that the success of the agricultural industry is dependent upon new graduates becoming skilled leaders (Buus, 2005; Schieman, 2006). Effective agricultural leadership development is necessary to prepare graduates to meet the challenges of their agricultural communities and agricultural the industry (Brown & Fritz, 1994; Howell, Weir, & Cook, 1982).

Leadership Development

Leadership development has been a major topic in management and business literature for the past two decades. The rapid change in business, technology, political issues and social factors has required the development of effective leadership skills and competencies. As a result, leadership development programs have become an increasing priority for business and nonprofit organizations (Cacioppe, 1998). The interest surrounding leadership development in the business community has also been fueled in recent years by rapid changes in technology and

global communication. As with any change, leadership is needed to guide individuals and organizations through the process of change. The speed of recent changes has contributed to the urgency of leadership development. New times demand new kinds of leaders. In a technological workplace that may be more virtual than physical, and where bytes of information and cyberspace need to be managed more than people, leaders will have to thrive in chaos and continuous change (Marquardt & Berger, 2000). Cacioppe (1998) stated that “the over managed and under led seems to provide the best summary of the reason for the growing interest in leadership” (p. 44).

Effective leadership in key positions is critical to the success of any organization. Leaders manage change, give vision, and work to position their organization for success in the fast-paced environment of a global information age (Conger, 2004). Leadership is a complex process requiring talents and abilities of many people at various levels in an organization. Identifying potential leaders and providing support for their training are two ways organizations show they are interested in the welfare of their employees, as well as making a commitment to their own well-being. (Rohs, 2004) stated “an investment in development is an investment in the organization” (p. 31).

Agricultural Leadership Programs

Agricultural leadership programs have a 60-plus-year history in the United States, dating from post-World War II (Azzam & Riggio, 2003; Carter, 1999). Strategic goals outlined by the Kellogg Farmers Program conducted at Michigan State University (1976) emphasized a need for increased leadership development initiatives in local cooperatives (Miller, 1976). Agricultural leadership is needed today more than ever before (Kansas Agriculture and Rural Leadership, 2006). With the agricultural field becoming more specialized and increasingly challenged, the future success of the industry is dependent upon local leaders to guide efforts for advocacy and

change (Diem & Nikola, 2005; Howell, et al., 1982; W.K. Kellogg Foundation, 2001) The traditional farming role of agriculture has changed to a more global perspective which now impacts agricultural communities.

Feedback from stakeholders from all agricultural professions and organizations suggests a stronger need and desire for agricultural leadership. The field of agricultural education added leadership to its mission to increase knowledge and community awareness (Azzam & Riggio, 2003; Case, 2005; Case IH, 2005; Susan Fritz, Tracy Hoover, William Weeks, Christine Townsend, & Richard Carter, 2003). With this increased desire for leadership education, instructors' have focused on teaching and learning new techniques designed to assist people as citizens and leaders to meet the challenges of their communities (Case IH, 2005; Fritz, Williams, & Barbuto, 2002).

The current array of agricultural leadership programs demonstrates a significant societal investment toward the important goal of fostering community participation by citizens (Buus, 2005). Therefore, America's greatest resource is its leaders, and agricultural leadership must view change in a broad perspective and be prepared to provide the wise leadership that 21st century challenges demand (Buus, 2005; Marquardt & Berger, 2000). However, some would argue that limited opportunities have been presented to improving the quality of higher education in agriculture. This inability of leadership programs to embrace this change in environment and update curricula to is reflected in this global economy (Earnest, 2002). A lack of global cooperation, the limited frame of reference associated with educational nationalism, under-utilized sources of knowledge, and the need for globalization of educational content have been identified as challenges in leadership research (Buus, 2005).

In attempting to address the apparent lack of leadership in the global economy, the W. K. Kellogg Foundation (2000) presented the *Grassroots Leadership Development Guide*. This guide was developed for grassroots leaders, support organizations, and funders of the foundation. The purpose of this guide was to provide a set of written guidelines to leaders and their organizations to provide ongoing structure and promote successful outcomes (W.K. Kellogg Foundation, 2001). With its long, rich history of involvement with grassroots leadership and organizations, the underlying strategy of the Foundation was to grow grassroots leadership through foundation-supported programs that would find and nurture hidden talent, build trust, and encourage cooperation. For example, the foundation might support a program that organizes and trains young parents to help local school officials address the problems of youth in a decaying urban environment. Leadership programs need to focus on teaching citizens how to cope with the barrage of changes in their environment. In using these approaches, programs would also lead to strong collaborations and networking (Campbell, 1997).

Campbell (1997) suggested an alternative approach to agricultural leadership by developing a grassroots guide with the vision of “community-controlled economic development.” A community-controlled approach to agricultural leadership is linked to the new paradigm in local economic development in which sustainable agriculture is presented, along with practical examples from innovative networks promoted by the California Alliance for Sustainable Agriculture (CASA) (Campbell, 1997). The experience of CASA organizations, both separately and as an alliance, suggests a new strategic vision of community-controlled economic development that can enable the movement to meet three difficult political challenges: holding those in power accountable, unifying environmental and social agendas, and developing strong leadership accountable to the movement's community base (Campbell, 1997).

As the *Grassroots Leadership Development Guide* points out, the number of people involved with grassroots leadership development is growing. Organizations involved in leadership development vary widely in size and scope. They include schools, community leadership programs, intermediary organizations fostering community organizing and/or community development, issue coalitions, and local colleges and human service agencies. Grassroots leaders affect many arenas and provide the necessary support in or to organizations. The funders offer encouragement, training, and technical experience in many different ways (Campbell, 1997; Carter, 1999; Dhanakumar, et al., 1996; Townsend & Carter, 1983; W.K. Kellogg Foundation, 2000).

As more undergraduate students enter the workforce and assume positions of leadership in agricultural industries, developing leadership behavior is of great importance. Many employers and organizations, such as John Deere Inc. and FFA (formerly Future Farmers of America), have begun assisting and creating leadership programs and institutes within colleges and universities' agricultural and life sciences divisions in an effort to recruit and develop successful and talented leaders for their organizations (International Association of Programs for Agricultural Leadership, 2004; Rudd, Stedman, & Kaufman, 2004). The FFA Collegiate Life Knowledge Program was designed to assist students in developing leadership skills and more effective leadership behaviors in their student organizations (Rudd, 2000; Rudd, et al., 2004). Agricultural education programs at many land grant universities are also taking charge in this leadership development process by encouraging their students to participate in activities that foster leadership behavior development (Ricketts & Rudd, 2001, 2004). Knowledge of undergraduate students' perceived leadership abilities would be invaluable when faculty plan and implement future programs and curriculum for academic course and degree specializations. (Brown & Fritz,

1994; F. W. Brown & S. M. Fritz, 1994; S Fritz, T Hoover, W Weeks, C Townsend, & R Carter, 2003; Susan Fritz, Christine Townsend, et al., 2003; Rudd, et al., 2004; W.K. Kellogg Foundation, 2001).

Need for Agricultural Leadership Education in Higher Education

Current research supports the need for more awareness and acknowledgment of agricultural leadership education. Research on agricultural leadership has provided a stronger foundation for using leadership principles in the public schools, vocational programs, and higher education environments (Fritz, et al., 2002; Meehan, 2002; Schumacher & Swan, 1993). Developing stronger and more productive communities is also an underlying mission of agricultural leadership (Case IH, 2005). In addition, researchers continue to call for educators to take up the charge in developing new programs and more focused leadership training (Case IH, 2005; Howell, et al., 1982; Israel & Beaulieu, 1990; W.K. Kellogg Foundation, 2001; Wall, Pettibone, & Kelsey, 2005).

Agricultural leadership knowledge systems play a central role in developing and disseminating knowledge, information, and technologies, which are relevant to improving global food and other supplies. Formal agricultural education is one method of teaching and developing a leadership knowledge base of current agricultural education systems. Many of the current leadership systems are in need of fundamental reform to support improvements in environmental sustainability studies especially to address the needs of this new global society (Azzam & Riggio, 2003; Carter, 1999; Case IH, 2005; Fritz, et al., 2002).

Benefits of Leadership Development in Agricultural Leadership Education

Positive changes in leadership behavior, as a result of leadership development events in the colleges of agricultural and life sciences have been assumed for years, but some specifics of this development have not been articulated. Many colleges and universities that offer

Agriculture and Related Sciences programs are constantly revamping leadership curricula to incorporate industry trends and requirements. In *Understanding Agriculture: New Directions for Education*, the National Research Council (1988) authors contended that agriculture leadership is too important a topic to be taught only to individuals pursuing careers in agriculture. Students who are in colleges of agriculture are not traditional farmers who study and desire careers in agriculture; they are students who are pursuing careers that are in a variety of areas (Schumacher & Swan, 1993). The council further recommended: a leadership curriculum components must be developed and made available to teachers addressing the science basic to agriculture, food, and natural resources, agribusiness, marketing, management, international productivity” (Diem & Nikola, 2005).

Problem Statement

One goal of higher education is to prepare graduates (future leaders) for the professional world, yet few formal training opportunities are offered to assist students in developing skills in personal leadership, organizational leadership, or community leadership (Cress, Astin, Zimmerman-Oster, & Burkhardt, 2001; Ricketts & Rudd, 2001; Schumacher & Swan, 1993). Teaching leadership through a collegiate experience is challenging, but industry seeks graduates who can lead teams, communicate, solve problems, make decisions, and provide motivation to others (Cacioppe, 1998; Goldsmith, et al., 2003; Hartmann, 2002; Rosen, Digh, Singer, & Phillips, 2000; Schieman, 2006).

Today, in colleges of agricultural and life sciences (CALs) there is a greater diversity of students (Schumacher & Swan, 1993). These students are not the traditional agricultural students who had a farming background from rural America; but many of these students are from suburban homes and never been to a farm. CALs students are coming from a more diverse family background where they are not the first in the immediate family to go to college, and they

are coming to college with numerous academic credits. In terms of their ethnicity, they are more diverse representing many different cultures and backgrounds. The increased numbers of students of color and women are now becoming the majority of the population when a couple decades ago they were the minority. Many of these students are pursuing a variety of degrees and specializations. For an example, with over 25 different majors, CALS students at the University of Florida, students have an opportunity to pursue majors in variety of fields ranging from Family Youth and Community Sciences to a more traditional Animal Science. In addition, with the variety of majors there is a greater presence of students, who are pursuing degrees in agriculture who desire professional or advanced degrees. Recently trends in the colleges of agriculture reflect larger enrollments of students who are in these pre-professional majors such biology, chemistry, food science and human nutrition, and animal sciences (Susan Fritz, Christine Townsend, et al., 2003). With this more diverse CALS student population, there is still greater a need to explore their leadership development in efforts to prepare these future graduates for transition into the work place or professional field.

In efforts to study leadership behavior, the researcher selected the Student Leadership Practices Inventory (LPI), developed by leadership researchers James Kouzes and Barry Posner. According to Kouzes & Posner (1998), leadership practices are measured behaviors, not measures of IQ, personality type, or management skills (p. 5). Although a succinct conceptualization of what set of leadership behaviors are viewed as the “right” behaviors, the LPI consistently shows that “The more frequently you demonstrate the behaviors included in the LPI, the more likely you will be seen as an effective leader” (p. 6). The LPI inventory has been tested and retested for reliability and validity through many studies with college students and leadership behavior.

In previous leadership studies, Posner and Brodsky (1993) also found that students, who practiced the five leadership practices most often, as compared to those who engaged in them less often, viewed themselves as more effective leaders. Research using the LPI has also found formal leadership education to be effective. Earnest (1996) discovered significant increases from pre-test to post-test for each of the five leadership behaviors of community leadership program participants in Ohio. Brungardt (1997) also found significant increases in leadership behaviors from the beginning to the end of the Leadership Certificate Program at Fort Hays State University in working with CALS students. More recently, LPI research was conducted with college FFA leaders and reporting their leadership behavior (Mullins & Weeks, 2006).

Given that leadership can be developed through formal and informal training (Burns, 1979; Northouse, 2004); it can also be developed through properly designed leadership projects. The purpose of this study was to describe the leadership behavior of CALS students. Specifically, this study hoped to determine the self-perceived level of leadership behaviors using the Student Leadership Practice Inventory LPI (Kouzes & Posner, 1998). The following two questions were posed: (a) What factors influence leadership behaviors in CALS students? (b) What leadership behaviors to CALS students exhibit the most?

Five Specific Research Objectives Were Identified

1. To determine self-perceived leadership behaviors of CALS students, as measured by the Student LPI (Kouzes & Posner, 1998)
2. To assess the influence demographic characteristics on leadership behaviors
3. To assess the influence of community leadership experiences of undergraduate CALS student leaders on leadership behaviors
4. To assess the influence that organizational leadership experiences (at the departmental, university, and community levels) have on leadership behaviors
5. To determine the relationship between undergraduate CALS student leadership behavior and previous organizational and community experiences.

This study utilized quantitative measures to identify leadership behaviors of undergraduate students enrolled in the College of Agricultural and Life Sciences (CAL S) at the University of Florida in Gainesville. The CAL S students were described in terms of their personal characteristics, academic leadership experiences, student leadership experiences, and community leadership experiences. The study also examined the relationship between the students' past and present leadership experiences in relationship to their leadership behavior. Specifically, what leadership behaviors do CAL S students at the University of Florida exhibit the most? Are CAL S students likely to inspire a shared vision, model the way, or challenge the process? Characteristics of the colleges of agriculture students were included to draw a clearer picture of the current students, what previous leadership training they have had, and where gaps exist between their perceptions of leadership behavior. The importance and experience of prior leadership training was also expected to influence CAL S students' leadership behavior.

CHAPTER 2 REVIEW OF LITERATURE

The purpose of this study was to identify and describe CALS students' past and present leadership experiences and personal characteristics as predictors for leadership behavior.

Specifically, this study hoped to achieve the following five goals:

1. To determine self-perceived leadership behaviors of CALS students, as measured by the Student LPI (Kouzes & Posner, 1998)
2. To assess the influence of demographic characteristics on leadership behaviors
3. To assess the influence of community leadership experiences of undergraduate CALS student leaders on leadership behaviors
4. To assess the influence that organizational leadership experiences (at the departmental, university, and community levels) have on leadership behaviors
5. To determine the relationship between undergraduate CALS student leadership behavior and previous high school experiences

This chapter will present a review of the relevant theories and concepts concerning leadership practices, behaviors, and theory. The chapter will focus on literature describing leadership behaviors and factors which might influence leadership behaviors. The specific topics that will be covered in Chapter 2 will include a definition for the nature of leadership, leadership theories, leadership styles, Leadership Practices Inventory (LPI), agricultural leadership, leadership of college students, demographic characteristics and leadership, and the theoretical framework of leadership.

Nature of Leadership

The concept and phenomenon of leadership have been well researched, but no clear consensus of the definition of leadership has been universally accepted. Several approaches have been used to accomplish an understanding of leadership. Through the years leadership has been

defined and conceptualized in many ways, with the common component is that leadership is an influence process.

Leadership Defined

Some researchers generally define leadership according to their major areas of interests and personal perspectives (Locke, 2001). The definition of leadership used in this study states that leadership is a practice that occurs as one individual influences one or more persons in an effort to facilitate a desired outcome or goal (Locke, 2001; Northouse, 2004). Kouzes and Posner (1997) defined leadership as “the art of mobilizing others to want to struggle for shared aspirations.” Gardner (1990) defined leadership as “the process of persuasion or example by which an individual or leadership team induces a group to pursue objectives held by the leader and his or her followers” (p. 1). Rost (1991) defined leadership as “an influence relationship among leaders and followers who intend real changes that reflect their mutual purposes” (p. 102). Chemers (1997) characterized leadership as a “process of social influence in which one person is able to enlist the aid and support of others in the accomplishment of a common task” (p. 1). A leader has the ability to expand another person’s capacity to be effective in leadership processes and roles that assists groups of individuals towards a goal (Bass, 1985; Northouse, 2004).

Northouse (2004) synthesized leadership theories into three major conceptualizations: a process that involves influence, a process that occurs within a group context, and a process that involves goal attainment. Based on these concepts, Northouse (2001) defined leadership as a process whereby one person influences a group of individuals to achieve a common goal. Northouse (2004) explained that leadership must take on an active process that engages the followers to commit and execute a task or skill. In addition, he explained that leadership requires the individual to work with other individuals. Leaders must have individuals who are willing to

follow in order to complete the task or reach the goal. Finally, Northouse (2004) stated that the aim or purpose of the leader and the group is to achieve a common goal. If the group of individuals does not see the need, relevance, or meaning of the task, the group will not be committed to accomplishing the task.

Being that leaders and followers are both a part of the leadership process, it is important to understand and recognize the relationship and dynamics between the two. In prior research, many studies have focused on leadership as a trait, however research has shown leadership to be more complex and cover assigned and emergent leadership, the concept of power, and coercion (Northouse, 2004). In developing an understanding of the true nature of the leadership, the researcher will address the nature of leadership in four categories which follow: trait, behavior, contingency, and transformation.

Trait

The trait perspective suggests that certain people in our society have special inborn qualities or traits that make them leaders. This is a restrictive view of leadership; however this concept of leadership has been around since the mid 20th century when there was a basic premise that one possessed a unique set of traits which defined leadership (Stogdill, 1974). Data from multitude studies have indicated that many traits contribute to leadership. Among the consistently identified are intelligence, self-confidence, determination, integrity, and sociability (Brungardt, 1996; Pernick, 2001).

Behavior

In contrast to the trait approach, the behavior or “skills approach” explores leadership on the fact that leadership can be learned. The focus of leadership is largely fixed on skills and abilities that can be learned and developed (Bass, 1985). At the heart of the behavioral approach focuses on the leadership development in three competencies which are problem-solving skills,

social judgment skills, and knowledge (Northouse, 2004). The behavioral approach to defining leadership focuses on the actions between leaders and followers. Rost (1991) offers that leadership is the “process” of doing something because it needs to be actively demonstrated. The modeling actions to the followers are important criteria in this leadership definition. In order to be a leader, followers must wish to participate voluntarily for good reasons and not be coerced into following the leader. This behavioral leadership approach is grounded in helping others to better themselves. Leadership has a learning component, and an individual will forever be changed by the experience.

Contingency

The contingency approach to leadership is based on the view that circumstances are the key determinants of leadership abilities. Leaders enable their followers during certain situations. In this approach, effective leadership occurs when a leader accurately diagnoses the development level of subordinates in a situation and then exhibits the prescribed leadership style (Brungardt, 1996). To understand the performance of leaders it is essential to understand the situation in which they lead.

Contingency leadership emphasizes the balance between directive and supportive roles of a leader, but the leader is not a complete participant in the leadership process. The leader’s task is to analyze a particular situation and determine the appropriate degree of directive and/or supportive behaviors necessary to address that challenge. In the context of a specific situation, leadership focuses on potential power to influence others to take action and from this action learning occurs (Bass & Avolio, 1993; Meehan, 1999).

Transformation

The transformation approach is described as a broad-based perspective that describes how leaders can initiate, develop, and carry out significant changes in the organization, community,

or society. This approach to leadership involves sharing a vision. Effective leaders can share the vision and are not afraid to jump in and participate with their followers (Flora & Flora, 1996; White, Castelloe, Butterworth, & Watson, 2003). Some researchers would call this “leading by example” or more of a participatory approach to leadership (DeRuyver, 2001). In this approach also involves leader participation is the process is just as important as reaching the shared goals.

Summary

These four approaches describe the nature of leadership and provide a conceptual view of leadership. However, many leadership researchers have developed their own view of leadership as it relates to the approach in which they follow. According to McCauley et al. (1998), belief is based on the assumptions that leadership development evolves with the growth of an individual. This leadership behavior has an effect on life experiences that cause people to take on leadership roles and participate in leadership processes to fulfill commitments to organizations, social groups, or neighborhoods.

Major Leadership Theories

In order to develop a deeper understanding of the concept of leadership, it is necessary to understand the various leadership theories. Researchers have conducted thousands of studies that have tried to explain leadership and effective leadership using different approaches. Burns (1979) has classified modern leadership approaches into four areas: trait, behavioral, contingency, and more recently, transformation.

Trait

Trait Leadership Theory

The trait perspective suggests that certain people in our society have special inborn qualities or traits that make them leaders. Data from multitude studies have indicated that many traits contribute to leadership, including intelligence, self-confidence, determination, integrity,

and sociability (Brungardt, 1996; Pernick, 2001). A strength of the trait approach is that it identifies potential leader by which traits that leaders exhibit and who has them. Trait Leadership Theory suggests that leaders are endowed with certain personality traits which constitute their abilities to lead. Certain studies (Bass, 1960; Bird, 1940; Stogdill, 1948, 1974) investigated individual traits, such as intelligence, birth order, socioeconomic status, and child-rearing practices. The trait approach to leadership has emphasized a specific set of traits that only leaders possess (Brungardt, 1996; Bryant, 2003; Pernick, 2001; Veltmeyer & Petras, 2002). The trait approach states that leaders are born and not made. The leader's personality is central to the leadership process. Using the trait approach, leaders analyze their traits to determine strengths and weaknesses and to ascertain how they fit into the organizational structure (Northouse, 2001).

Using the Trait Leadership Theory can be useful in agriculture by determining specific traits that distinguish leaders from followers (Bass, 1990). Identifying categories of personal factors of leadership, such as capacity, achievement, responsibility, participation, and status can be beneficial in leadership seminars or developing a frame of reference for students participating in Head, Heart, Hands, and Health (4-H) activities. The strengths of the trait approach to leadership have been appeal, research base, emphasis on leader, and benchmarks for effective leaders (Northouse, 2001; Smith & Peterson, 1988). On the other hand, only small samples of leadership traits have been studied, which provided limited evidence why there were only a few traits was identified with leadership. The trait approach also fails to take situations into account. As Stogdill (1948) pointed out, it is difficult to isolate a set of traits that are characteristic of leaders without factoring situational effects into the equation. Therefore, individuals who possess

certain traits that make them leaders in one situation may not be leaders in another situation (Northouse, 2004).

Adaptability-Innovativeness Theory (KAI)

The Adaption-Innovation (A-I) Theory is founded on the assumption that all individuals solve problems creatively (Kirton, 1989). The theory states that people have different cognitive styles in which they are creative, solve problems, and make decisions. These style differences lie on a normally distributed continuum, ranging from high adaptation to high innovation. The theory also states that individuals with more adaptive cognitive styles prefer to solve their problems with more structured processes. In comparison, individuals who are more innovative are more comfortable solving problems with less structure. They are less concerned that the structure be consensually agreed upon than are individuals who are more “adaptive.” The Kirton Adaption-Innovation Inventory (KAI) approaches problems within the given terms of reference, theories, policies, precedents, and paradigms, and it strives to provide "better" solutions (Kirton, 1989). A key example from teaching the A-I Theory to groups is that the groups come to appreciate the value of diversity in problem-solving styles, and they become more tolerant and even appreciative of other diversities. The development of the Adaptability-Innovation Theory was influenced by the results and observations of an earlier study in management initiative (Kirton, 1989). Personalities were seen to have a characteristic effect on the progress and success of initiative in organizations. While all managers would assert that they were sensitive to the need for change and were willing to change, individuals were more willing to embark on changes involving a style close to their own rather than those involving a very different style. The KAI has been an effective tool in building and enhancing individual leadership skills (Kirton, 1989).

Behavioral

Skills-Based Approach

According to Katz (1955), a skill can be defined as “an ability which can be developed, to be necessarily inborn, and which is manifested in performance, not merely in potential” (pp. 33-34). Nahavandi (2000) expanded on this definition by including a training dimension. He proposed that a skill is an acquired task a person develops and can change with training and experience. Katz (1955) identified three categories of skills needed by leaders: technical skills, human skills, and conceptual skills. Although the amount of human, technical, and conceptual skills may vary, depending on the position within the organizational hierarchy, each skill is nevertheless important for successful leaders to possess. Technical skills, according to Katz (1955), are the most concrete type of skills, and they are associated with understanding and being able to complete specific activities. In other words, technical skills are the “how to do it” skills and involve methods, processes, procedures, or techniques (Goleman, 1998; Hicks & Gullett, 1975; Katz, 1955). Leaders engage in technical skills when they perform the technical activities required of them.

Contingency Theory

Situational Approach

The situational approach to leadership was developed by Hershey and Blanchard (1969) whose research was based on Reddin’s (1967) management style theory (Blanchard, 1995.) The situational approach to leadership has addressed the situation as the determinant of leadership abilities. Hencley (1973) reviewed leadership theories and noted that “the situation approach maintains that leadership is determined not so much by the character of the individuals as by the requirements of social situation” (p. 38). According to this research focus, a person could be a follower or a leader, depending upon circumstances. Situational leadership emphasizes the

balance between directive and supportive roles of a leader (DeRuyver, 2001). The leader's task is to analyze a particular situation and determine the appropriate degree of directive and/or supportive behaviors necessary to address employee needs (Northouse, 2004). This approach has been widely used in training and developing leadership in organizations nationwide (Northouse, 2001).

A part of the situational leadership approach relates to the leader's ability to direct tasks and address needs which is also the leader's power. The concept of power in this leadership approach affects the potential to influence others to take action and from this action learning occurs (Bass & Avolio, 1993; Meehan, 1999). The term "positional power" is power in which the leader has the potential power to affect other individuals' beliefs, attitudes, and course of action. Position power is the power that a person derives from a particular office rank in a formal organizational system. This position power includes levels of legitimate, reward, and coercive power (Lloyd, 1996; Northouse, 2004). This affects situational leadership approach in terms of the leader's position and ability to influence others to take action and make change occur.

Path-Goal Theory

Another leadership theory that is related to contingency theory is path-goal theory (House & Dessler, 2000). Path-goal theory focuses on a follower's personal motivation, or what motivates the follower to accomplish a task (DeRuyver, 2001; Kelsey & Wall, 2003; Ladewig & Rohs, 2000; Northouse, 2004; Wall, Ferrazzi, & Schryer, 1998). Leaders who are in accordance with the Path-Goal Theory offer rewards for achieving the goal. They assist in clarifying methods and removing obstacles that may hinder an individual from reaching the goal (Northouse, 2004). Leaders motivate followers by instilling feelings of competence and value. It is the leader's responsibility to help followers reach their goals by directing, guiding, and coaching (Northouse, 2004). An example of this model is a follower's needs for achievement and

affiliation. Some students' motivation is described as their wish to achieve "good" grades. The students' intrinsic motivations for higher grades are primary motivators, and the instructor's role as facilitator is the key in attaining that goal. Path-Goal Theory places much responsibility on leaders and less responsibility on subordinates; therefore, this theory may promote dependency over a period of time and may fail to recognize the full abilities of the subordinates.

Leadership Member Exchange Theory

Leadership member exchange (LMX) theory takes another approach to leadership: a process that is centered on the interactions between leaders and followers (Dansereau, 1975). The LMX Theory makes the dyadic relationship between leaders and followers a focal point of the leadership process (Dansereau, 1975; Northouse, 2004). In the early studies of the LMX theory, a leader's relationship to the overall work unit is viewed as a series of vertical dyads, categorized as being two different types. Leader-member dyads, based on expanded role relationships were called the leader's "in-group", and those based on formal job descriptions were called "out-groups". It is believed that followers become in-group members based on how well they get along with the leader and whether or not that they are willing to expand their roles and responsibilities. Followers who maintain only formal hierarchical relationships with their leaders become out-group members. In-group members receive extra influence, opportunities, and rewards; out-group members receive standard job benefits (Dansereau, 1975; Katz & Lazer, 2004; Northouse, 2004). Good leader-member exchanges result in followers feeling better, accomplishing more, and helping organizations prosper. Rather than having in-groups and out-groups, leaders should try to develop high-quality exchanges with all subordinates. Leadership develops over a period of time, including stranger, acquaintance, and partner phases (Northouse, 2004).

Positivist Psychology Approach

Positivist psychology approach is another contingency leadership theory that is closely related to path-goal and is rooted in themes of achievement motivation (Duke, 1998; Quaglia & Cobb, 1996). This positivist psychology approach helps people develop the ability to discern opportunities and options that they may confront in their day-to-day activities. One example of this approach is the Achievement Motivation Theory which postulates that individuals can learn to establish and acquire goals. The formation of educational and occupational aspirations is integral to education, enabling students to better understand who they are and how they can function effectively for their own well-being and for the betterment of society (Blanchard, 1995.). The study of aspirations is also rooted in sociology and social comparison theory (Collier, 1994). People tend to compare themselves to groups with similar beliefs and abilities. Collier (1994) stated: “The group serves as a powerful anchor that limits the level of aspiration, particularly when the group is cut off from other groups. People tend to use others who are similar or have similar levels of ability as a source of social comparison (p. 83). The leader and follower motivation has important implications for selection, promotion, design, implementation, and evaluation of education and development activities (Dollisso & Martin, 1999).

As agricultural educators, the understanding of the motivation techniques can be very beneficial to their target audiences (Swanson, 1984). As a 4-H or Future Farmers of America (FFA) youth leader, having a good understanding of what motivates youth is a key element in developing effective programming. Having knowledge and information, enables educators in developing more effective educational programs. Several scholars have begun examining the motives or drives of individuals in rural community settings (Bell, Reddy, & Rainie, 2004; Cole, 1947; Howell, et al., 1982; Kelsey & Wall, 2003). Motivation appears to be salient to agricultural educators and rural community leaders.

Transformational Leadership Theory

In the previous leadership approaches, the leader is the figure “who stands out from the rest” and is the focus on the leadership theory; however transformation leadership is different because the focus is now on the followers. Understanding the importance of the leaders’ relationship with his/her followers and an interdependency of roles is the focus of the transformation theory. Transformation theory explores the shift from the individual leaders to the team leaders.

Transforming leadership is a process in which the leaders take actions to try to increase their followers' awareness of what is right and important, to raise their followers' motivational maturity and to move their followers to go beyond their own self-interests and focus on what is good for the group or the organization (Burns, 1979). Leaders provide their followers with a sense of purpose that goes beyond a simple exchange of rewards for effort provided. The transforming approach to leadership attempts to optimize development and not just performance. Development encompasses the maturation of ability, motivation, attitudes, and values (Burns, 1979). Such leaders want to elevate the maturity level of their followers, where the focus would shift from security needs to needs for achievement and self-development. Leaders would convince their followers to strive for a higher level of achievement as well as higher levels of moral and ethical standards. Through the development of their followers, they optimize the development of their organization as well. High performing followers build high performing organizations.

According to Burns (1979) transforming leadership “is a relationship of mutual stimulation and elevation that converts followers into leaders and may convert leaders into moral agents”. This transforming approach occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality”. The

transforming leader shapes, alters, and elevates the motives, values and goals of followers achieving significant change in the process (Burns, 1979).

In building on Burns' concept of transforming leadership, Bass, (1985) stated that 'transformational leadership' where the leader transforms followers deals with the transformational style of executive leadership that incorporates social change. This transforming approach is now more common in many of our teams and organization where there is a desire not just makes the process better but to change the culture of the entire organization.

An example of this transforming leadership idea is found in servant leadership. Servant leadership is a practical philosophy which supports people who choose to serve first, and then lead as a way of expanding service to individuals and institutions. Servant-leaders may or may not hold formal leadership positions; however servant-leadership encourages collaboration, trust, foresight, listening, and the ethical use of power and empowerment (Greenleaf, 1970) This transforming leadership approach continues be a trend has for the last few decades, where more leadership theorists and researchers are incorporating concepts of this transforming leadership perspective into broader leadership styles and behaviors.

Leadership Styles

The concept of leadership style refers to the characteristic manner in which an individual leads others. Early conceptualizations categorized leadership styles as either autocratic, democratic, or laissez-faire (Blanchard, 1995.; Northouse, 2004). During the past 20 years, a new paradigm for leadership has emerged that has shifted emphasis from the traditional transactional model of leadership toward the study of transformational leadership styles. The concept of transformational leadership was introduced by Burns (1979) and redefined by Bass (1985). The study of transactional versus transformational leadership style becomes an important aspect of overall study of leadership (Bass & Avolio, 1993; Bryant, 2003; Deluga, 1990).

Transformational Leadership

Burns (1979) provided a comprehensive theory to delineate transactional and transformational leaders (Bass, 1985; Bass & Avolio, 1993). Transformational leaders are individuals who motivate followers to do more than originally expected, based on their original level of confidence, toward accomplishing desired outcomes. Transformational leadership occurs when a leader (a) raises the level of awareness about the importance and value of desired outcomes, (b) alters or expands the wants and needs of followers, and/or (c) gets followers to transcend their own self-interest for the sake of the group (Bass, 1985). The first leadership behavior is the idealized influence, which describes the leader's conviction, trust, and willingness to take a stand on difficult issues and uphold his values and ethics. The leader serves as a role model and mentor for subordinates. The second leadership behavior is the inspirational motivation, which shows the leader as articulate, challenging, and encouraging in the accomplishment of the organizational vision. The third leadership behavior is the intellectual stimulation, which provides that the transformational leader question old and traditional assumptions and beliefs, such as the leader promoting creativity in the expression of ideas and reasons. The fourth leadership behavior is the individualized consideration, which presents the leader as appealing to the individualistic nature of subordinates by providing consideration of individual needs, abilities, and aspirations (Bryant, 2003; Deluga, 1990).

Burns (1979) introduced the concept of transformational leadership noting that the result of transformational leadership is mutual stimulation and elevation that "converts followers into leaders and may convert leaders into moral agents" (p. 23). A transformational leader is attuned to the needs and motives of followers, and he attempts to help followers reach their fullest potential (Bass & Avolio, 1993; Burns, 1979; Deluga, 1990; Riggio, Bass, & Orr, 2004). Working with Burns's theory, Bass (1985) asserted that these leaders motivate followers by

appealing to strong emotions regardless of the ultimate effect on the followers, and these leaders do not necessarily attend to positive moral values. Transformational leadership has also been described as going beyond individual needs, focusing on a common purpose, and addressing intrinsic rewards (Bass & Avolio, 1993; Deluga, 1990; Green, 2004; Riggio, et al., 2004; Santora, et al., 1999).

This transformational leadership style is particularly relevant to leaders of nonprofit organizations because it helps build follower commitment to the cause. Followers emulate the leader's commitment and may view the leader as the embodiment of the organization's values and mission (Riggio, et al., 2004). This element is often associated with inspirational leadership and is particularly important for leaders of nonprofit organizations when inspiring and motivating volunteer workers and staff (Brungardt, 1996; Bryant, 2003; Deluga, 1990; Green, 2004; Riggio, et al., 2004; Santora, et al., 1999).

Transactional Leadership

Transactional leadership contains two distinct styles of leadership: management by exception (active) and contingent reward. Leaders characterized through management by exception (active) are described as those who will intercede only in a situation if it is determined that an employee is not performing at the acceptable standard. Contingent reward leaders utilize communication tools to clarify expectations, and they provide promises and negotiations to elicit the desired action or response behavior from subordinates. On the opposite end of the leadership spectrum is transformational leadership.

Burns (1979) stated that transactional leaders approach followers with an eye to exchanging one value for another, such as jobs for votes or subsidies for campaign contributions. Such transactions comprise the bulk of the relationships among leaders and followers, especially in groups, legislatures, and parties (p. 23). Burns (1979) classified transactional leaders as

opinion leaders, bargainers, bureaucrats, party leaders, legislative leaders, and executive leaders (Bass & Avolio, 1993). The transactional leader, in contrast with the transformational leader, uses contingent rewards in which people receive a reward for a behavior or accomplishing a task. Transactional leaders use the technique of “management by exception,” which includes criticism, negative feedback and/or negative reinforcements. Finally, some transactional leaders use the “non-leadership” technique or laissez-faire leadership which is defined as a “hands-off” leadership style with the basic philosophy of “letting it ride.”

When transactional leaders over-emphasize goals and policies, they discourage creative thought and problem-solving. Consequently, both transformational and transactional leadership styles are necessary to address the differences in knowledge processes at each level of an organization. In fact, transactional leadership, rather than transformational leadership, is extremely important in top management in order to achieve the competitive advantages that result from effective knowledge exploitation (Bryant, 2003; Deluga, 1990; Green, 2004; Riggio, et al., 2004; Santora, et al., 1999).

Leadership Practices Inventory

As mentioned with transformation leadership theory, leaders provide their followers with a sense of purpose and are not just a simple exchange. The rewards of transformation leadership theory look at optimizing development and fostering change to occur. Understanding the importance of the leaders’ relationship with his/her followers and an interdependency of roles is the focus of the transformation theory. This study utilized the LPI in measuring leadership behaviors, which incorporates key elements of transformation leadership theory into specific measures of leadership behavior. The LPI was developed from research conducted by Kouzes and Posner during the 1980s; the research represents their Leadership Challenge. The Leadership Challenge consists of five practices identified as “exemplary leadership”: (a) Challenge the

Process, (b) Inspire a Shared Vision, (c) Enable Others to Act, (d) Model the Way, and (e) Encourage the Heart. Kouzes and Posner (1997) stated: “The more frequently you demonstrate the behaviors included in the LPI, the more likely you will be seen as an effective leader” (p.9) (Kouzes & Posner, 1998). Researchers demonstrated the validity and reliability of the LPI as a measurement instrument. The leadership theory framework for this study began with the leadership behaviors (practices) research of Kouzes and Posner (1995). According to Kouzes and Posner (1997), leadership practices are measured behaviors--not measures of IQ, personality type, or management skills (p. 5). Specifically, participants who regularly exhibit LPI behaviors are seen as being more effective in meeting job-related demands and more successful in representing their units to upper management.

After 25 years of research with a database involving more than 100,000 participants, Kouzes and Posner (1998) established five leadership practices, which were commonly present in the leaders they observed. The LPI was created by developing a set of statements describing each of the various leadership actions and behaviors. A higher value represents more frequent use of a leadership behavior.

Other characteristics that LPI leadership behaviors may include are higher performing teams and fostering increased levels of loyalty and commitment. The LPI leadership behaviors have also shown increased motivational levels, willingness to work harder, and a reduction in absenteeism, turnover, and dropout rates (Kouzes and Posner, 1995, p. 6).

In learning more about the five leadership practices, Kouzes and Posner (1995) provided a detailed account for each leadership practice (behavior):

1. Challenging the process searches for challenging opportunities to grow and be innovative. This leadership behavior emphasizes the need for experimenting, taking risks, and learning from accompanying mistakes.
2. Inspiring a shared vision envisions an uplifting and ennobling future as a leader. Creating a common vision appeals to their values, interests, hopes, and dreams, and it is a cornerstone of this future behavior.
3. Enabling others to act promotes cooperative goals and building trust. This behavior strengthens followers by providing choice and developing competence in critical tasks objectives.
4. Modeling the way sets the example and behavior in ways that are consistent with those shared values. A leader promotes consistent progress and builds commitment from followers.
5. Encouraging the heart is a leadership practice that recognizes individual contributions. A leader who “encourages the heart” celebrates team accomplishments regularly (Kouzes & Posner, 1995, p. 18).

In studying the leadership practices, two empirical studies determined that the five leadership practices accounted for 65% (Posner & Brodsky, 1992) and 80% of the variance (Posner & Brodsky, 1994) respectively, in assessments of chapter presidents’ leadership effectiveness. Posner and Brodsky (1993) also found that students, who practiced the five leadership practices most often, as compared to those who engaged in them less often, viewed themselves as more effective leaders. Participants who regularly exhibit LPI behaviors are seen as:

- Being more effective in meeting job-related demands
- Being more successful in representing their units to upper management
- Creating higher-performing teams
- Fostering loyalty and commitment
- Increasing motivational levels and willingness to work hard
- Reducing absenteeism, turnover, and dropout rates
- Possessing high degrees of personal credibility

Researchers using the LPI have also found formal leadership education to be effective. Earnest (1996) discovered significant increases from pretest to posttest for each of the five leadership behaviors of community leadership program participants in Ohio. In addition, Rudd

(2000) and Krill, Carter, and Williams (1997), along with other researchers, in have used Kouzes and Posner's (1997) leadership practices in their respective studies. Rudd (2000) analyzed the leadership styles of extension directors, and determined that these leaders self-reported that *enabling others to act* was their most frequent leadership behavior, while *inspiring a shared vision* was their least frequent behavior. Spotauski and Carter (1993) found that agricultural education executives were best at *enabling others to act* and needed help with *inspiring a shared vision* and *challenging the process*. Woodrum and Safrit (2003) examined the leadership practices of West Virginia extension agents and determined again that *enabling others to act* was the behavior exhibited most frequently, and *inspiring a shared vision* was the leadership behavior used less often. Brungardt (1996) also found significant increases in leadership behaviors from the beginning to the end of the Leadership Certificate Program at Fort Hays State University in Hays, Kansas. *Challenging the process*, *inspiring a shared vision*, *enabling others to act*, and *modeling the way* behaviors were significantly greater on the last day of the program compared to the first day during a 60-day period. In both these studies, the reliability measure was greater than .80, which was considered moderate to high.

Leadership in College Students

Students with undergraduate degree programs in the 21st century will be required to possess knowledge of concepts fundamental to literacy, critical thought, mathematics, history, science, values, art experience and appreciation, international perspectives and multicultural experience, in-depth study, how to learn and problem-solve, technical skills, practical psychology of interpersonal relations, relevant courses, and practical perspectives on careers (Knowles, Holton III, & Swanson, 2005; Nirenberg, 1998; J. C. Ricketts & Rudd, 2002; Schumacher & Swan, 1993). All these concepts have a relationship with leadership

Leadership vs. Management

Leadership ability determines effectiveness and the potential impact of the leader's organization (Maxwell, 2002). Until now, according to Bennis and Nanus (1985), the most difficult question has always been: How can one learn to be an effective leader, not just a manager? In modern organizations, leadership and management roles are seldom separate, and the leader creates the atmosphere for the work environment. At times, a leader/manager may need to inspire his followers, creating commitment, growth, and adaptation. In this instance, the individual is clearly exerting leadership (Howell, et al., 1982; Kloppenbog & Petrick, 1999; Schieman, 2006). Typically, college students come to their positions without leadership training, prior experience, and a clear understanding of the ambiguity and complexity of their roles (Cress, et al., 2001; Nirenberg, 1998). Northouse (2001) described his leadership-member exchange theory as a leadership process that is centered on leaders and followers in which communication and personal relationships between leaders and followers are key elements. This leadership-member exchange theory is just one example of leadership behavior that college graduates are expected to possess as they enter the workplace.

As more undergraduate students enter the workplace and assume positions of leadership in industries, developing leadership behavior is of great importance. Leadership is not an innate characteristic, but it can be developed through formal and informal training (Burns, 1979). Leadership can be developed through properly designed leadership projects. Through these leadership experiences, students can develop what is known as "transformational leadership" (Burns, 1979). Transformational leaders enable their followers to reach their full potential by tapping into the followers' motivational needs and nurturing personal and group relationships toward important organizational goals. Research has shown that transformational leadership results in high job satisfaction and greater satisfaction with the leader (Bycio, Hackett, & Allen,

1995). Many of today's CALS students have a perceived expectation of leadership. Future employers view leadership development as extremely useful in personal and professional development activities (Graham, 2001).

According to Love and Yoder (1989), much evidence is available to support the conclusion that colleges of agriculture (COAs) in the United States have contributed significantly to the achievements of their graduates. Love and Yoder (1989) noted that although student leadership skill development in college was good, students felt that COAs contributed little to the students' leadership skill development. As noted by Love and Yoder (1989), students perceived the development of their leadership abilities as an important part of their college education. Few departments, however, have required leadership development coursework as a part of their agriculture curricula. Representatives from agri-business have voiced their support of leadership skill development for prospective employees (Aldrich, 1988). Love and Yoder (1989) suggested that COAs were not providing enough leadership development opportunities. A need has arisen to determine the leadership abilities of students enrolled in COAs because knowledge of leadership abilities would be useful as faculty in COAs encourage students to participate in activities that foster leadership skills development. In addition, the knowledge of the students' perceived leadership abilities would be helpful as faculty plan and implement future leadership skills development programs for students enrolled in COAs.

Traditionally, leadership education has been employed in the traditional classroom setting with face-to-face instruction, but web-based applications have provided venues to attract a wider clientele (Susan Fritz, Tracy Hoover, et al., 2003; Fritz & Brown, 1998). This example of teaching method delivery shows how social needs dictate leadership response (J. C. Ricketts & Rudd, 2002).

Agricultural Leadership

Agricultural leadership program efficacy has been determined by a number of studies. Most of these studies, however, have not reported on the impact that participants have had on actual community leadership (Kelsey & Wall, 2003). More recently, studies on agricultural leadership have focused on the extent to which participants in agricultural leadership programs become community leaders and contribute to rural community development (RCD) processes. Hustedde and Woodward (1996a) examined the key questions and answers when preparing an effective community-based leadership program. According to Hustedde and Woodward (1996a), "capacity building" of local leaders is the key to addressing rural problems. This process engages citizens and organizations to identify needs, resources, and opportunities. Through servant leadership, people work to strengthen and transform communities (Greenleaf, 1970). Other community-related factors, which are considered in creating a balanced curriculum, are discussed to show the importance of identifying a vision and goals for the community and in turn the leadership program. In an ideal setting, program participants would "learn about several local issues in-depth and develop public behaviors in visioning, facilitation, team building, and conflict resolution." (Frick & Spears, 1996; Hustedde & Woodward, 1996a)

Hustedde & Woodward's case study of agricultural leadership program participants focused on graduates who participated from 1982 to 2001. In this study, surveys were administered to selected student population and also interviews were conducted with eight selected subjects (Hustedde & Woodward, 1996b). In addition to the survey findings of self-reported changes in knowledge and behavior, qualitative findings revealed that participants were aware of the importance of rural community development (RCD) processes. However, many participants were not serving in leadership positions, and they were taking a minimal role to improve their communities. Recommendations include incorporating a practicum into the

program that teaches needs assessment, project development, and change-agent behaviors so that participants have the knowledge and skills to serve as effective community leaders (Azzam & Riggio, 2003; Duhl, 1997; Kelsey & Wall, 2003; Pigg, 2001).

Similarly, researchers in organizational leadership are examining the nature of leadership curricula in higher education programs (Crawford, Brungardt, Scott, & Gould, 2002).

Approaches to leadership development include the incorporation of the Adult Learning Theory (Crawford et al., 2002; Mitchell & Poutiatine, 2001), experiential learning models (Mitchell & Poutiatine, 2001), and action research (Zimmermann-Oster & Burckhardt, 1999). According to Crawford et al. (2002), major changes, such as faculty cost and delivery model, will continue to impact degree program requirements for organizational leadership.

Townsend (2002) reported that one-shot programs develop awareness, but was not effective in changing behavior. When an extended and sustained leadership class was provided, attitudes and leadership behaviors changed after the class (Kelsey & Wall, 2003). The program provides the long-term contact needed to change leadership behaviors. There is potential for incorporating knowledge and behavior development, but it is currently under-utilized. Program designers should integrate a leadership project or practicum into the program. (Susan Fritz, Tracy Hoover, et al., 2003) Asking participants to create and implement a plan for community development within their home towns would serve to develop leadership behaviors, needs assessment, change agent skills, and increase participant impact on community development, at least in the short term.

Challenges in Agricultural Leadership

National reports have examined the knowledge, skills, abilities, and competencies required to prepare society-ready graduates. The American Society for Training and Development recently conducted a study titled *Mapping the Future: Shaping New Workplace Learning and*

Performance Competencies. In this report, the competency model included competencies, areas of expertise, and workplace learning and performance roles for training and developing professionals where the underlying theme again is leadership development (Davis, Naughton, & Rothwell, 2004).

The Kellogg Commission, in its report titled *the Future of State and Land-Grant Universities* (2000) reported that today's university setting is changing. The commission stated that universities needed to reform public higher education in five areas: (a) student experiences, (b) student access, (c) engagement with society, (d) a learning society, and (e) campus culture. The commission's findings concluded that universities need to pay more attention to promoting lifelong learning, as well as paying more attention to student experiences and campus culture.

The Kellogg Commission also found several key obstacles that would slow down university or institutional reform: lack of resources, money, and time; inadequate facilities; organization of universities into decentralized, disciplinary departments and colleges; lack of communication between academic units; personal attitudes; and a general resistance to change. One of the key aspects the commission alluded to throughout its report was the need for more specific leadership development at every level.

Challenges and opportunities are presented relative to improving the quality of higher education in agriculture. The Kellogg commission discussed the following challenges: the need for of global cooperation; the limited frame of reference associated with educational nationalism; underutilized sources of knowledge, the need for globalization of educational content; gender imbalances among students and faculty members' narrow disciplinary approaches used in organizing learning; and the narrow definition of scholarship and its impact on recognition systems at institutions engaged in higher education in agriculture (W.K. Kellogg Foundation,

2003). Advances in communication technology, coupled with a rebirth of global cooperation, make it possible to achieve significant advances in higher education in agriculture (Azzam & Riggio, 2003; Carter, 1999).

Another challenge in the agricultural leadership field is the need for more evaluative research on the programs and courses being taught to address specific leadership skills. More qualitative and quantitative research needs to be conducted on agricultural leadership to establish stronger validity and to provide measures for bench marking results (Carter, 1999; Kelsey & Wall, 2003; Petrea & Aherin, 1998). Valid measures of leadership programs can show the importance and potential of agricultural leadership development programs that exist and operate across the nation (Carter, 1999; Kelsey & Wall, 2003; W.K. Kellogg Foundation, 2001). The current array of agricultural leadership programs has entailed a significant societal investment toward the important goal of fostering community participation by citizens (Bolton, 2004; Rohs, 2004)

Although the specific fields of agriculture, such as cooperative extension systems, have a long history of work in rural leadership development, there is little widespread understanding of the range of knowledge and behavior taught or the amount of efforts directed toward leadership effectiveness (Dhanakumar, et al., 1996).

Leadership Behavior Theoretical Framework

Given the need to ascertain the extent of leadership behaviors attained by students in colleges of agriculture and factors that may be associated with well-developed leadership behaviors, this section reviews potential influences and organizes these into a conceptual model. Conceptually, Figure 1 identifies factors that influence leadership behavior. According to the Theoretical Framework Model which resulted from a synthesis of youth leadership research conducted by Ricketts, Osborne, and Rudd (2004), family, school, self, community, agriculture

instructor, agriculture program, and students were identified as the key variables that may, in theory, explain leadership in these colleges (p. 43). Within this broad conceptual model, this study specifically focused on describing leadership behavior and how age, gender, or residential background has affected the prevalence of those behaviors.

In addition, ethnicity, academic status, as well as number and types of leadership positions held, have all been factors that may influence leadership behaviors (Flora & Flora, 2003; Rudd, et al., 2004). Other variables that have been noted to influence leadership behavior include previous high school activities, community service activities, and civic organization memberships (Luloff & Bridger, 2003; Tolbert, Lyson, & Irwin, 1998).

In addition, the academic backgrounds for traditional four-year students versus community college transfer students have been identified in the literature as factors that may influence the leadership behavior of individuals (Burgraff, 1999). It is therefore possible that diverse populations are excluded from leadership positions based on their leadership style. The literature also suggested that variables related to an individual's age and/or experience can influence an individual's leadership behaviors (Duke, 1998; Kelsey & Wall, 2003; Nirenberg, 1998; Stedman, 2004). Characteristics such as gender, ethnicity, academic experience, organizational leadership experience, community leadership experience and the degree of formal training also are aspects of leadership that influence behavior (Golembiewski, 2001).

Demographic Characteristics and Leadership

Numerous studies have been conducted in the field of leadership to address the influence of selected characteristics of individuals on their leadership behavior. Some studies have focused on the influence of the characteristics over the self perceived leadership behavior of the individual. Others have focused on the perceptions of followers related to the individual's

leadership style and the influence of these characteristics on leaders (Merriam & Caffarella, 1999).

Gender

Leadership behaviors of men and women are perhaps one of the well-researched aspects of leadership. The two major schools of thought on gender differences in leadership are: distinct differences or no differences. Ervin (2005) conducted a study that explored the leadership practices among student government leaders. The results of the study showed no significant differences were found on the five leadership practices between male and female participants. Similarly, no significant differences were found between men and women, whether or not the student held a leadership position within the student government (Ervin, 2005). In addition, no significant differences existed between elected and appointed leaders.

Bardou (2003) using the Leadership Practices Inventory (LPI) conducted a study to examine the impact of prior student leadership experiences, gender, and perceived institutional support on student leaders' self-efficacy. The study consisted of 532 undergraduate student leaders at Indiana University. It focused on how well individuals felt they could perform the leadership behavior rather than their actual frequency of engaging in the behavior. The results of the study indicated men and women did not significantly differ in their self-efficacy for leadership on *challenging*, *inspiring*, *enabling*, or *encouraging*; while for *modeling*, the scores of women were significantly higher than those of men. Women tended to feel more supported by their advisor than men, and they were more likely to feel that their advisor encourages leadership development. The more an individual agrees that his or her advisor encourages leadership development, the more capable that individual feels he or she can inspire, enable and model (Bardou, 2003).

Rudd (2000) used the Leadership Practices Inventory (LPI), in which five observers participated in a 360-degree review of 38 men and 16 women in County Extension Director positions differences. The observing participants reported significant differences between men and women on four of the five leadership practices measured. Women were reported to use the practices of *challenging the process*, *inspiring a shared vision*, *enabling others to act*, and *encouraging the heart* significantly more than their male peers. Using the self-evaluation component of their instrument, Rudd found women often scored themselves lower than their observers, while men scored themselves higher than their observers. In this case, men scored themselves higher than observers in all practices, whereas the women in County Extension Directors (CED)s scored themselves lower in four of the five.

Moore's (2003) study of leadership within the Cooperative Extension Service found gender had no significant effect on leadership styles, other than in idealized influence where women scored higher. Gender may play a very important role due to the number of women at the county level working as 4-H faculty. For the purposes of this study, gender will be analyzed to further determine the relationship between gender and leadership.

Ethnicity and Race

Ethnicity, race, and issues related to diversity have played an important role in the history of the United States. Some leadership studies have provided empirical evidence showing a relationship between leadership and ethnicity. Characteristically, research has shown certain traits or characteristics could lend themselves to the opportunity for leadership, but not to the success or ability to lead. Davis (1982) found African-American leaders may differ from other races in their leadership behaviors. Using Burn's (1979) definitions for transactional and transformational leadership, Davis concluded that African-American leaders use behaviors related to transformational leadership more so than those of transactional leadership because

African-American followers seek out and are more responsive to transformational leadership behaviors. Holder (1990) concluded that no significant differences existed among ethnic origin and leadership style when comparing extension faculty and middle managers.

In 1993, Kouzes and Posner studied 36,000 managers and subordinates, studying both Caucasian and non-Caucasian participants. They found non-White leaders reported engaging in two of the five leadership practices more than their White counterparts, including inspiring a shared vision and modeling the way. However, use of the 360-degree technique revealed no significant differences between White and non-White participants. Sykes (1995), in studying leadership styles of CEDs, reported significant differences in the self-perceived leadership behaviors of African American CEDs compared to CEDs of other races. She concluded the African American CEDs perceived themselves to demonstrate more leadership behaviors.

Other studies show no significant effect of race in leadership behavior (Moore, 2003; Holder, 1990). From the research, no conclusive evidence exists as to the relationship between race and leadership.

Academic Leadership Experience

Academic leadership experiences, which include such variables as academic status (freshman, sophomore, junior, and senior), formal leadership course work and leadership trainings have been noted as predictors on leadership behavior. In a previous longitudinal study by Cress, Astin, Zimmerman-Oster, and Burhardt (2001), they found evidence that experiences in leadership education and training programs have a weak and non-significant effect on leadership outcomes. Their study indicated that leadership potential exists in every student and that college and universities can develop this potential through leadership programs and activities. Previous notions that leadership is positional or an inherent characteristic were

unfounded. The more involved a student is in student activities and leadership education the more a student will develop effective leadership behaviors (Cress, et al., 2001).

Organizational Leadership Experience

Organizational leadership plays an important role in developing leadership within its membership. Knowledge creation, community and practical application promote a sharing of ideas, skills and that talents are reflective individualized and group leadership development (Locke, 2001). Previous research indicates the desire for leadership development is strong, especially among practitioners as well as the researchers of leadership theory (Day, 2001).

Participating in organizational leadership provides participants with the opportunity to interact with their peers in formal and non-formal leadership training. This organizational leadership experience is different from leadership programs and can provide a distinct advantage for leadership development. Kezar and Moriarty (2000) found that being an officer in a collegiate organization was one of the strongest predictors of self-rating on leadership ability. Many civic leadership programs encourage participants to engage with the community and use what they have learned to work on or discuss solutions to problems facing the community (Locke, 2001). Azzam (2003) states this engagement process can facilitate the learning process by providing a relevant context, and can help establish social networks between the participants and the community" (p. 57) .

High School Organization Leadership

A student's freshman year in high school has been linked to positive connections with development of leadership behavior in the college population (Woodrum, 2003; Zielinski, 1999) For example, high school organizations, such as FFA, 4-H, Boy Scouts, and athletic teams, have been instrumental in developing and shaping leadership behavior and attitudes In agricultural education, both 4-H and FFA have identified leadership development as central to their mission.

Many Cooperative Extension Service and agricultural educators, members, and alumni think these organizations provide effective leadership programming (Dormody, 1994; Seevers, Dormody, & Clason, 1995). The development of leadership skills was also important to the success of high school vocational agriculture graduates. According to Shelhamer (1990), adults who were active in leadership activities were more likely to have completed their high school vocational agriculture curricula (Schumacher & Swan, 1993). Ricketts and Rudd (2001) found that leadership experience aids personal development for career and societal success. High schools students with leadership experience have a strong leadership capacity because they better understand the phenomena of leadership as a personal and attainable undertaking (Ricketts & Rudd, 2001).

College Leadership

Many College students experience organizational leadership among opportunities beyond the formal college classroom. Researchers have investigated how students involvement with both learning communities and agricultural youth organizations influenced their academic performance, retention (Ball, Garton, & Dyer, 2001), and degree completion (Ball & Garton, 2002). The results indicated that there is a positive relationship between student involvement and academic performance.

On the other hand, Viegas, Brun, and Hausafus (1998) studied undergraduate women majoring in family and consumer sciences and found a weak relationship between the students' GPA, the number of organizational memberships, the number of leadership positions held in organizations and their total scores on the Leadership Practices Inventory. As a result, Viegas, Brun, and Hausafus concluded that, "leadership development may be attained irrespective of these attribute variables if students are sufficiently motivated and act proactively to pursue their leadership goals" (p. 49). Similarly, Kolb, Karau, Steven, and Eagly (1999) investigated the

effect of attitudes toward leadership development among undergraduate students. The researchers reported that leadership experience was a significant predictor of leader emergence. Kolb et al. (1999) concluded that, “it can be said with some degree of confidence, then, that self-reported leadership attitude and leadership experience can be used to predict those individuals who are likely to emerge as leaders” (p. 316).

Park and Dyer (2003) found that traditional agricultural college organization’s FFA and 4-H members provided most of the leadership in agricultural colleges. FFA members, representing only one-third of student leaders, provided nearly half of the leadership to student organizations. The 4-H members contributed an additional 37% of the leadership. Due to leadership in multiple organizations, 4-H and FFA members represent considerable student leadership potential to a college, especially in traditional organizations (Dormody, 1994; Susan Fritz, Christine Townsend, et al., 2003; Mullins J. G., 2006

; Ricketts & Rudd, 2004; Rudd, et al., 2004; Wingenbach, 1997).

Most of these studies utilize survey research methods but there remains a need to collect personal opinions, attitudes, comments, and recommendations from recognized collegiate leaders. Insight into the beliefs, values, and attitudes of individuals will allow observers to gain a holistic in-depth understanding of the leadership phenomena studied (Merriam & Caffarella, 1999). Connors, Velez, and Swan (2006) conducted a qualitative, semi-structured interview of 20 of the most outstanding seniors in the College of Food, Agricultural, and Environmental Sciences at The Ohio State University. Based on the comments of the subjects, leadership can be viewed as a process that develops over a period of time and is influenced by an individual’s personal characteristics, experiences, and influences (Connors, 2006). Leadership participation and aspirations can and does change as a student moves from high school to college and on to

adulthood. Students recognize the need for involvement in leadership development organizations to improve their personal leadership and professional skills. It was clearly evident that the outstanding seniors were influenced more by their participation in collegiate organizations and personal influences than they were by formal leadership coursework, books, or other instructional materials. This conclusion supports the findings of Kezar and Moriarty (2000) when they stated that “involvement opportunities are clearly important for the development of leadership among groups” (p. 67). These studies add to the theory of the importance of leadership development within undergraduate students in colleges of agriculture.

Community Leadership Experience

Numerous studies have explored community leadership. Leadership development program outcomes were considered to have a direct impact on student leadership development. Along with the idea of community leadership, "civic leadership" is a term that has been used to describe these leadership programs (Azzam & Riggio, 2003). Many of these leadership development programs are sponsored by local community agencies with the aim of training current leaders in the skills necessary to serve their communities. “These programs attempt to foster an understanding of the events, people, and organizational entities that shape a community, while providing skills and knowledge to be more effective leaders. An important aim of these programs is to inspire citizens to step forward and assume leadership roles within the community.” (p. 55) (Azzam & Riggio, 2003). In addition, the development of specific leadership skills, and creating local leadership are viewed as a component of the broader concept of social capital that is required to build other forms of capital within a community. Green and Haines (2002) identified human capital, physical capital, financial capital, and environmental capital. These types of community capital are interrelated and interact through leaders operating locally, regionally, and nationally. The effectiveness of these leader relationships is an indicator

of a community's social capital (i.e., how well the leaders work with each other to identify local problems and issues and attain group goals)" (p. 2) (Bolton, 2004).

Earnest (1996) conducted a study of the Ohio State University Extension program and used "Project EXCEL" as the primary planning and teaching tool. Program participants were evaluated (pre-test and post-test) using Kouzes and Posner's (1993) Leadership Practices Inventory (LPI). According to the study, "participants (a) were more willing to challenge the status quo and take risks; (b) broadened and changed their perspective of leadership roles/responsibilities within the community and were encouraging others to accept some leadership responsibility; (c) developed a greater appreciation for teamwork and collaboration within their community and improved their problem solving skills; and (d) learned to adapt their leadership styles to fit different contexts within the community" (p. 7)(Earnest, 1996).

In developing community leadership for high school and college students, the primary goal of community leadership programming is to encourage them to take an active role of leadership within their communities, especially in addressing issues and concerns (Fredricks, 1998). Today, the number of community leadership programs is on the rise. Currently more than 700 community programs are operating in nearly all regions of the United States (Azzam & Riggio, 2003; Fredricks, 2003; F. R. Rohs & Langone, 1993). Many of these programs were formed or were closely affiliated with the local chambers of commerce. A substantial number of these programs were started by individuals who have either participated in other civic leadership programs or who have had some informal contact with other leadership programs (p. 56). Over 85 percent of all leadership training programs use formal classroom instruction (Meehan, 2002). While many civic leadership programs use classroom instruction, most also offer direct involvement of participants in the community, as well as requiring participants to work on actual

community problems or issues. In this way civic leadership programs have much in common with "action learning" approach to leadership development (Fredricks, 1998, 2003; Ladewig & Rohs, 2000; Rohs, 2004) In addition, these types of civic leadership programs appear to see leadership as a complex interaction between the leader, the organization, and the larger social environment the city /community (Azzam & Riggio, 2003). Leadership development could be seen as a process that requires both social and contextual interactions coupled with formal training. The use of social systems coupled with individual training can help to build commitments and establish a relational network among members of an organization or community (Rohs, 2004; Taylor, Jones, & Boles, 2004). Through this process, individuals will have the opportunity to learn through social interaction in relevant contexts.(Azzam & Riggio, 2003; Rohs, 2004).

Summary

Chapter 2 provided the theoretical and conceptual framework for the study. Bass's (1967) model of Transactional and Transformational Leadership supported the theoretical framework. The researcher included an appropriate literature review in each of the following areas:(a) nature of leadership defined (b) major leadership theories; (c) leadership styles; (d) Leadership Practices Inventory (LPI); (e) agricultural leadership; (f) leadership in college students; (g) influence of characteristics on leadership; and (h) theoretical framework of leadership behavior.

The literature review revealed that much research has been conducted on studying the concept of leadership. However, the literature review also indicated very little consensus has been reached among the researchers. The number of definitions associated with leadership is one indicator of the various views and philosophies of leadership. One of the most represented views of leadership in the literature is the Leadership Practices Inventory (LPI) by Kouzes and Posner where leadership practices or behaviors were identified and provide a theoretical framework for

this study. The LPI measures the role of the leader and facilitates analysis of the influence of organizational experience, community leadership experience, and personal characteristics variables on leadership behavior.

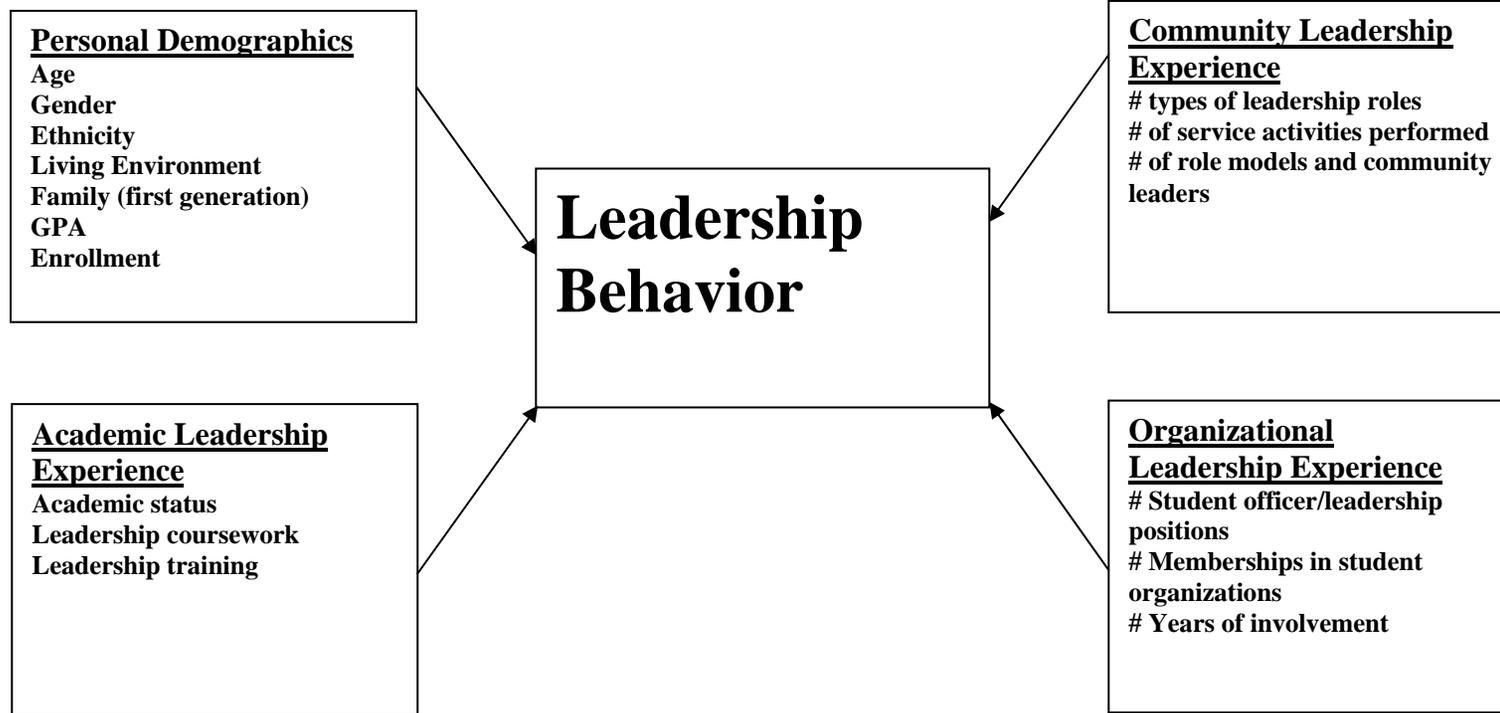


Figure 2-1. Conceptual model of factors contributing to leadership behavior (LPI) of CALS students.

CHAPTER 3 RESEARCH DESIGN AND METHODS

Overview

As reported in Chapter 1, the purpose of this study was to assess CALS students' past and present leadership experiences and personal characteristics as predictors for leadership behavior. Specifically, this study aimed to measure the self-perceived level of leadership behaviors using the Student Leadership Practice Inventory (LPI) (Kouzes & Posner, 1998). Chapter 2 discussed previous research related to this study and reviewed relevant theoretical and conceptual frameworks. Chapter 3 will address the research design, target population, instrumentation, and data collection procedures and statistical procedures for data analysis.

Research Objectives

Chapter 3 will explain the methods used to accomplish the objectives of the study. The five specific research objectives of this study are as follows:

1. To determine self-perceived leadership behaviors of CALS students as measured by the Student LPI (Kouzes & Posner, 1998)
2. To assess the influence of the demographic characteristics of current CALS students on leadership behaviors
3. To assess the influence of community leadership experiences of undergraduate CALS student leaders on leadership behaviors
4. To assess the influence that organizational leadership experiences (at the departmental, university, and community levels) have on leadership behaviors
5. To assess the relationship between undergraduate CALS student leadership behavior and previous high school experiences.

Research Design

The design of the study was both descriptive and *ex post facto* since the factors that were being identified were pre-existing (Ary, 1996). The design was employed to describe the present characteristics of undergraduate CALS students and to identify their leadership behaviors. This

study used quantitative research methods to accomplish the specific research objectives.

Descriptive research was used to accomplish research Objective 1. According to Ary (1996), descriptive research is used to “summarize, organize, and describe observations” (p. 118). The descriptive statistics relevant to Objective 1 will be summarized by using measures of central tendency, dispersion and correlation. A correlation and causal-comparative or *ex post facto* design was employed to accomplish Objectives 2, 3, 4, and 5. In the *ex post facto* design, the researcher does not have direct control over the independent variables.

Population

The population for the study consisted of undergraduate students enrolled in the fall 2007 semester in the College of Agricultural and Life Sciences (CALs) at the University of Florida. A CALs student is an undergraduate student pursuing a Bachelor of Science degree in the areas of pre-professional training, food, agriculture, natural resources, and the life sciences. A list of CALs students representing 26 majors was provided by the dean’s office of the College. The CALs students are defined as enrolled in the College of Agricultural and Life Sciences, School of Forest Resources and Conservation, Agricultural and Biological Engineering, academic programs at Apopka (MFREC), Ft. Lauderdale, Milton (WFREC), Ft. Pierce (IRREC), Homestead (TREC), Hillsborough Community College at Plant City (HCC-PC), the main UF campus in Gainesville, and distance education enrollment for the fall semester. These CALs students also included members from the School of Natural Resources and Environment (SNRE) and cover approximately 50 specializations and 23 minors are offered by the College. Many CALs students plan for professional studies in dentistry, law, medicine, and pharmacy and also for graduate study in science and technology.

At the initiation of the study, CALs listed 3,702 enrolled students. The accessible population was all 3,429 students CALs undergraduates who had registered active e-mail

addresses. Due to coverage error, 283 students were excluded from the initial e-mail invitation mailing. Coverage error is the direct result of not allowing all members of the survey population to have a chance of being contacted for the survey (Dillman, 2000). Coverage error occurs when the list or frame in which a sample is drawn does not include all elements of the population that the researcher wishes to study. In this study, the coverage error is due to an incomplete and inaccurate database of current e-mail addresses of the respondents. To reduce coverage error, the researcher attempted to gather contact information for the 283 students who were excluded from the initial e-mail invitation, but these efforts were unsuccessful. The researcher was successful in getting contact information on 68 students and made contact with them through email. Of the 68 who was contacted, only 7 students responded. This contact occurred after the initial study had been administered. The researcher used characteristics information which was available for the 283 students, and they were compared to the total population. The researcher concluded that this group of non-respondents is not different from the total population.

Instrumentation

The instrumentation (which included the LPI leadership instrument and researcher-developed items) for this study was distributed via an online survey using Survey Monkey, which is an online tool used to create, deliver, and analyze online surveys. Dillman (2000) stated that online or Web surveys are the latest development in survey research where computer hardware and software make online surveys simpler to construct and less expensive to administer. The researcher designed and administered the online survey (see Appendix C) to collect data for the study. A leadership experience questionnaire was used as part of this survey to measure the leadership experiences of each CALS student. This leadership experience questionnaire measured each CALS student leadership experience in that particular leadership experience area. For example, the organizational leadership section of the survey asked about

the following: (a) the type of organization(s) (i.e., service, social, social service, fraternity, etc.) the student belongs to; (b) the leadership position was held (i.e., president, vice president, secretary, etc.); (c) the membership level (i.e., chapter, district, state, regional, national); and (d) the number of years of participation (i.e., 0-1, 2-3, 4-5, 5 or more years).

Data were collected, categorized, and recoded to perform statistical analysis. Sections of the leadership experience instrument were adapted from a previous study (Park & Dyer, 2005). In Park and Dyer's study, the leadership experience questionnaire was developed in the context of analysis of undergraduate student leaders in an agricultural college. The questionnaire asked about their prior leadership training, participation in high school activities, involvement in FFA and 4-H, as well as current participation in undergraduate student leadership in a land-grant college of agriculture.

Student Leadership Practices Inventory (LPI) Instrument

With the written permission of Kouzes and Posner (1998), the Student Leadership Practices Inventory (LPI) was also administered as a section of this online leadership behavior survey instrument. Five behaviors were identified with the LPI leadership behaviors model used to address Objective 1. Participants provided their self-perceived proficiency level in each of the leadership practices, as described by the LPI leadership instrument. The LPI was used to determine the degree to which each CALS student exhibited the leadership behaviors of *challenging the process*, *enabling others to act*, *inspiring a shared vision*, *encouraging the heart*, and *modeling the way* as a part of his leadership behavior.

After 25 years of research with a database involving more than 100,000 respondents, Kouzes & Posner (1998) established five leadership practices that might be present in the leaders they observed. The LPI was created by developing a set of statements describing each of the various leadership actions and behaviors. Each statement was originally cast on a 5-point Likert

scale, and reformulated in 1999 into a more robust and sensitive 10-point Likert scale. The change in the response scale, from 5-point to 10-point, was made for the second edition of the LPI after a few statements were revised and editorial changes were made. With the goal of increasing the validity and reliability of the instrument, the responses from observers can now be further categorized by their relationship to the leader (e.g., manager, direct report, co-worker or peer, and other)(Kouzes & Posner, 2002). A higher value represents more frequent use of a leadership behavior. The results described here are consistent with those reported earlier from the first edition of the LPI. According to (Brungardt, 1996), research using the LPI with college students and leadership development programs found scores to be significantly higher on both pretest and posttests.

According to Kouzes and Posner (1997), leadership behaviors are measured behaviors, and not measures of IQ, personality type, or management skills (p. 5). The LPI consistently shows that “the more frequently you demonstrate the behaviors included in the LPI, the more likely you will be seen as an effective leader” (p. 6). The instrument is composed of five competency area subscales, which support each of the identified processes. Thirty statements (with six statements making up each competency area) were included in the LPI instrument. The participants responded to each statement by a rating on a scale ranging from “1” (Almost Never) to “10” (Almost Always) to determine the importance of the practice to student leadership. For example, the 30 question leadership inventory asked questions such as: “I set a personal example of what is expected from others” where participants would rate themselves on a scale of 1 to 10. The possible scores calculated for each subscale ranged from 1 (low) to 10 (high) for the perceived importance of each of the five skill areas.

For this study, the researcher created an average score from each leadership subscale by using CALS student respondent data for the fall 2007 semester. Scores were calculated for the perceived importance of each of the five skill areas by summing the responses within each area. Dividing the sum of the responses by the number of items for each behavioral area resulted in a mean score for the behavior. These served as the scale score of importance for each of the five competency areas. Participants also completed a second half of the survey, which explored questions of previous leadership experiences and requested basic personal characteristics information.

Reliability for the LPI

Reliability and validity of the instruments were important considerations for the researchers to make in determining (a) the selection of the instrument and (b) the overall credibility of the study. Reliability, defined by Ary et al. (1996), is “the extent to which a measure yields consistent results; the extent to which scores are free of random error,” (p. 24). Reliability was determined for each of the instruments included in the study. “Validity” is a term used to describe an instrument’s accuracy in measuring what it is supposed to measure. Validity is also the extent to which the data are gathered and deemed appropriate for answering the research question (Ary, 1996).

Cronbach’s Alpha is an appropriate means for estimating internal-consistency reliability within a Likert scale (Isaac, 1995). Posner et al. (2002) have reported internal reliability scores for the self-rating of 0.80 for Challenging the Process, 0.87 for Inspiring a Shared Vision, 0.75 for Enabling Others to Act, 0.77 for Modeling the Way, and 0.87 for Encouraging the Heart (Kouzes & Posner, 2002). The fewer errors contained, the more reliable the instrument, and instrument reliabilities above .80 are considered good (Penfield, 2002). Internal reliability, as measured by Cronbach’s Alpha, continues to be strong, with all scales above the .75 level

(Kouzes & Posner, 1997). Test-retest reliability for the five leadership behaviors has been consistently strong, generally at the .90 level and above which has been true for the Self version as well as for all Observers and for each Observer category (Posner, 1994).

Other researchers reported reliability for the five leadership practices as being between 0.63 and 0.83 (Snyder, 1992) and between 0.83 and 0.92 (Levy, 1995). The reliabilities for the LPI tend to be above this criterion. A tendency occurs for the reliability coefficients from the LPI-Self (between .75 and .87) to be slightly lower than those for the LPI-Observer (ranging between .88 and .92); however, this is not problematic. Table 3-1 reports the associated Cronbach's Alpha for each competency area of the Student Leadership Practices Inventory (LPI) instrument. These estimates were appropriate and the instrument was administered to the study participants. Although the reliabilities of some of the scales were low on the self-rating when compared to other observers, all had moderate to high reliabilities. The reliability of the scales, and instrument as a whole were therefore considered acceptable (see Table 3-1). To confirm the reliability of the instrument, the researcher conducted a post hoc analysis.

Instrument Pilot Study

Before conducting the study, a leadership behavior survey was reviewed and assessed by a panel of experts who evaluated the instruments for content and face validity. The panel consisted of individuals at various universities (University of Florida, Cornell University, and North Carolina State University). These panel members were considered experts on leadership and/or research design and instrumentation. The instrument also was pilot-tested with a group of undergraduate CALS students. Construct validity was established through the logical approach, which measures each concept within a theory using a set of questions to address the objectives of the study.

In September 2007, the CALS Leadership Survey was pilot-tested prior to its administration to undergraduate CALS students in the study. The pilot study consisted of 30 students from the College's Ambassadors Program in which 28 of the 30 individuals participated. They completed the instrument with a response rate of 90%. Data were collected from the pilot study to determine reliability of the instrument (see Table 3-2).

Internal consistency of the leadership behavior was measured using Cronbach's Alpha. Vogt (2005) contends that alpha is the appropriate measure of internal consistency or reliability with items on an instrument or index. A reliability that is greater than .90 is considered high. Reliabilities greater than .80 are considered moderate to high, and those less than .70 are considered low. Since all of the leadership behavior scales on the instrument in Table 3-2 showed moderate to high reliability, the reliability of the scales and instrument as a whole were considered acceptable.

LPI Instrument Content

The survey was the same for all subjects where the participants were asked to provide a rating on questions on their leadership behavior. The leadership inventory asked questions such as: "I set a personal example of what is expected from others" where participants would rate themselves. To measure leadership behavior, participants provided their responses to a 30 item inventory on a "1" to "10" Likert scale. The scale ranged from "1" = Almost Never, "2" = Rarely, "3" = Seldom, "4" = Once in While, "5" = Occasionally, "6" = Sometimes, "7"=Fairly Often, "8"=Usually, "9"=Very Frequently, "10"=Almost Always. As shown in Table 3-3, the final version used a set of 30 items.

Measures of Influence on Leadership Behavior

Dependent Variable Indexes

As previously stated, the dependent variable for this study was Leadership Behavior. On an individual level, performance was measured by the LPI survey instrument as a self-rating. The leadership practice scores of CALS students were the dependent continuous variable in the study. A total score was created by summing from the individual ratings of the five practices identified in the survey instrument and then averaged. Thus, a grand mean score for “Leadership” was calculated. This leadership measure was used in further analysis with the independent variables in each of the four leadership experiences areas, as discussed in Chapter 2. Leadership subscale scores for each of the five leadership behaviors were also calculated. Although self-assessments of performance deserve some skepticism for their potential bias, they have been widely used in research with leadership behavior (Kouzes & Posner, 2002). Mean scores of each of the five leadership behaviors measured by the LPI are presented in Chapter 4.

In order to minimize the effects of missing data on the LPI inventory, an index score was calculated as an average of the ratings provided by the respondent. For example, if a respondent marked 6 = “sometimes” for practices and 7 = “fairly often” for other practices but failed to provide a response to the remaining one item, the respondent’s average rating was used. If, however, a respondent failed to provide ratings for at least half of the practices, that respondent’s index score was coded as missing and not included in further analysis.

Independent Variables

Independent variables were collected on subset areas of demographic characteristics, academic leadership experience, organizational leadership experience, and community leadership experience. Each of these subsets were grouped into models where they were analyzed as predictors of leadership behaviors.

Demographic Characteristics

A set of characteristics questions gathered personal data from participants. The characteristics information obtained from the CALS students included age, gender, ethnicity, living environment, and family college experience. Other personal characteristics information collected during this study, which included major, academic status, transfer versus non-transfer student, and leadership roles, were nominal independent variables (Howell, et al., 1982). Age, grade point average, leadership coursework, number of leadership positions, number of organizations, number of years of involvement, number of service activities, and number of role models and community leaders were continuous independent variables (Burgraff, 1999). Other characteristics such as marital status, citizenship, and parental influence were collected but were not used in the study as predictors. The independent variables used included: age, gender, ethnicity, living environment (rural, suburban, and urban), family college experience (whether or not they are first-generation college students), grade point average (GPA).

Academic Leadership Experiences

Independent variables for the academic leadership experience explored questions pertaining to the participant's academic leadership trainings (Kelsey & Wall, 2003; Wall & Kelsey, 2004). According to the Wall and Kelesy (2004) academic leadership variables such as leadership course and academic status are important characteristics when measuring undergraduates. The academic items included questions pertaining to the participant's academic status, leadership coursework, and leadership trainings. The previous experiences with leadership courses and leadership training totals were derived and totaled on the characteristics instrument.

Organizational Leadership Experiences

This group of variables explored the influence of current and previous organizational activities on leadership behavior. Participants were asked to give information about their current organizational leadership experience, including the frequency of many service activities (both inside the CALS college and outside the CALS college). Organizational leadership experience variables are meaningful because indicate that student organization has an association with leadership behavior. Previous studies have indicated, student organizational involvement can influence and be instrumental in developing leadership behavior (Burke, 2002; Ervin, 2005; Komives, 1998; Rudd, et al., 2004)

Another question asked the participant to give information about his or her organizational leadership experience (student leadership experience in college and high school). This question explored the number of leadership positions, the number of organizations, number of years of involvement, and previous high school activities (Howell, et al., 1982; Zielinski, 1999).

Community Leadership Experiences

Community leadership experience variables included types of leadership roles, number of a current service activities, and number of role models and community leaders (Barrett & Horner, 1989). This group of variables explored the influence current and previous community service activities on leadership behavior.

Data Collection

Prior to the collection of any data, a proposal to conduct each phase of the study was submitted to the University of Florida's Institutional Review Board (IRB). The IRB-02 reviews non-medical research proposals for ethical soundness, and it grants approval for the research proposal. A copy of the informed consent form, along with the survey instrument, was submitted to the IRB. The informed consent form described the study and the voluntary nature of

participation. It also informed participants of any potential risk/or compensations associated with participation in the study. In August 2007, the proposal was approved (Protocol #2007-U-0727).

Once given the approval to conduct the study by the IRB, data were collected and analyzed by the researcher. Data were collected during September, October, and November 2007. An online survey collected the data needed to meet the objectives of the study. To accomplish the research objectives, the Tailored Design Method (TDM) was implemented (Dillman, 2000). In Dillman's TDM approach to electronic data collection, he describes a minimum of five contacts with each respondent: a pre-notice e-mail, first questionnaire invitation, a thank you e-postcard, a fourth contact, and a final contact (Dillman, 2000).

Procedure

To conduct the study, participants were sent an e-mail with a link to the leadership survey. The leadership survey link was embedded in an e-mail message from the CALS dean's office. Administration of the survey followed Dillman's (2007) Tailored Design Method for an online questionnaire (instead of using the traditional mail questionnaire). A pre-notice e-mail letter was sent out advising participants that in a week they would be receiving the following information: instructions for participating in the study, the URL address for the online survey, and instructions for completing online instrument (see Appendix B). This notice provided the participants an opportunity to access the survey immediately. The researcher using this notice also was able to detect mistakes in the e-mail addresses provided by the dean's office. The actual instrument was then delivered to the participants through an e-mail link to the questionnaire, which provided access to the survey (see Appendix B).

A database of 3,429 CALS students' e-mail addresses was generated by the CALS dean's office, and the pre-notice was sent to the population of CALS students. This e-mail letter of introduction was sent by the College of Agricultural and Life Sciences (CALS) Assistant Dean

of Academics notifying students about the forthcoming survey and requesting their participation in the study. All e-mail correspondence with the study was sent by the researcher with approval of the Assistant Dean of Academics in CALS.

Within a week of the pre-notice, the participants were sent the first e-mail notice. The notice included the active link for the web-based survey. This e-mail notice directed students to go to the website link which opened a webpage hosted by Survey Monkey. On this web page, the researcher created a message from the Agricultural and Life Sciences dean's office requesting student participation. In addition to the request for participation, there was a link to an electronic version of the informed consent letter. This informed consent letter on the web-site provided the same information as in the e-mail letter. By entering the website, a student could choose to participate in the study and select a confirmation response of "I agree" or "I do not agree." Additionally, participants were provided an estimate of the approximate amount of time needed to complete the survey and any compensation received for being participants. No formal compensation was offered for participation, but by participating students' e-mail addresses were entered into a drawing to win tickets to home athletic events football and basketball games as an incentive.

Following completion of the first step, students were then directed through the rest of the 38-question survey with a total consisting of about 250 items (if a student answered all possible items). Students who decided not to participate or ended their participation of the survey early were redirected to the CALS home website. Students who agreed to participate then entered the survey and answered the questions. After collecting data from about 200 participants during the first six hours of launching the survey, modification was made to the survey to collect participants' Gator link e-mail addresses. This procedure enabled the researcher to track

participants' responses to the survey and not duplicate requests for participation. After making the modification to the survey, the researcher then attempted to identify participants by characteristics information provided by the CAL's dean's office. Characteristics information was collected and matched to all the participants' surveys to address unit and item non-response error.

Two weeks after the first questionnaire mailing, participants received a postcard via e-mail, thanking those who had already completed the instrument and reminding those who had not done so to please complete the survey. The researcher recorded e-mails that were returned due to wrong e-mail addresses or some other reason. For these participants, the researcher attempted to get the correct address through the Internet or by contacting the dean's office requesting the current e-mail address.

By asking each participant to provide their e-mail address, the research could monitor who had or had not completed the study instrument. Each completed instrument was date stamped, and the participant was removed from any further contact regarding completion of the study.

Approximately two weeks after the thank-you e-mail, a third e-mail was sent to those participants who had not previously responded. This contact included all the information for completing the study. Participants received a fourth and fifth contact within a two-period week, and then a final e-mail one week following as a final attempt to encourage response.

Error in Survey Administration

Survey errors can occur in administration of online surveys. Four types of survey errors identified by Dillman (2000) are sampling error, coverage error, measurement error, and non-response error. In each of these forms of survey errors, each has a direct effect on the validity and reliability of conducting survey research. Therefore, to reduce error in survey research, Dillman's Total Design Method (TDM) approach was used. The TDM uses social exchange

theory to guide and integrate specific techniques and procedures. This theory states that questionnaire recipients are most likely to respond if they expect that the perceived benefits will outweigh the perceived costs (Dillman 2000, p. 233). The use of the TDM approach has been successful in reaching higher response rates for survey research. Each of the survey error types will be defined, and suggestions will be offered for overcoming each type of error. In this study, the researcher implemented several strategies to address survey error.

Sampling error occurs when the researcher surveys only a subset or sample of all people in the population instead of conducting a survey in which all elements of the population are reflected. Sampling error is inevitable unless a survey is conducted in which every member of the population is contacted. Not having a good sample of the population makes it almost impossible to get a good or reliable estimate of the population that the researcher is measuring. Therefore, the researcher cannot prove that the information gathered from the sample is consistent with the population and therefore it lacks statistical power for the researcher's study. In an effort to eliminate sampling errors in this study, the researcher attempted to survey the entire population (Dillman, 2000 p.11).

As discussed earlier in this chapter, coverage error is the direct result of not allowing all members of the survey population to have an equal chance of being contacted the survey (Dillman, 2000, p.11). In this study, the survey did not reach all the potential population due to internal and external constraints. One internal constraint was the researcher not being provided an accurate list of student contact e-mails for all of the CALS students in the college. In this study, participants' university e-mail addresses were used to participate in the study. The inability to have complete access to correct email addresses from the dean's office was a

limitation to this study. Due to this fact, the researcher did not have access to accurate and complete contact information for the study.

Measurement error-- the third type of survey error-- occurs when a respondent's answer to a given question is inaccurate, imprecise, or cannot be compared in any useful way to other participants' answers (Dillman, 2000). The lack of clear and concise questions creates measurement error. When using a survey, the question must be detailed and easily understood for proper responses. The most effective way to avoid measurement error would be proper construction and development of the research instrument. A researcher would need to provide clear, concise, and unambiguous questions that would be asked so that participants are both capable of and motivated to answer correctly (Dillman, 2000). In some occurrences in measurement error, many participants would have difficulty choosing an accurate response from the choices given. To address this type of error, the researcher conducted a process to develop items in which participants had "an accurate, ready-made answer" that did not elicit demands for time, thought, or variation (Dillman, 2000, p.37). These answers were created and developed from a previous study of undergraduate student leaders in CALS (Park & Dyer, 2005). In addition, questions and responses were developed and generated from a panel of leadership experts who assisted in the study. Thus, using this ready-made answer procedure posed no considerable reliability risk.

The final type of error is non-response error. According to Dillman (2000), "non-response error occurs when a significant number of people in the survey sample do not respond to the questionnaire *and* have different characteristics from those who do respond, when these characteristics are important to the study"(p. 10). Anytime a response rate falls below 100%, a non-response bias may exist and can be a threat to the external validity of a study (Lindner,

Murphy, & Briers, 2001). When evidence of non-response bias exists, caution must be exercised in generalizing findings beyond those who fully participated in the study.

The reasons for non-response vary, such as “not at home” refusals and not being able to answer the question. Some researchers have assessed non-response error by conducting a comparison of early to late participants. Studies and research have shown that non-respondents are often similar to late respondents (Ary, 1996; Witkin, 1984). If no significant difference in early and late respondents is found and late respondents are believed typical of non-respondents, it can be assumed that non-respondents would respond in typically the same way as the respondents. Respondents would therefore be able to generalize to the total population (Ary, 1996).

Non-response Bias

When evidence of non-response bias exists, caution must be exercised in generalizing findings beyond those who fully participated in the study. The non-response can prevent observations from being included in the data analysis, which in turn reduces statistical power (Gravetter & Wallnau, 2000) and can introduce bias in the data (Israel, 1992; Miller & Smith, 1983). In this research study, non-response bias was addressed using three different methods.

The first method the researcher performed was to compare respondents to the population. According to Miller and Smith (1983) if respondents are typical of the population, (statistical tests can be done) this similarity can be reported and the researcher can generalize from the respondents to the sample. If data collected of the sample were similar to those of the population, the assumption could be made that the respondents are a subpopulation of the total and are truly representative of the population. The researcher gathered population data from the Dean’s office on the characteristics of the student population for the Fall 2007 semester. Table 3-4 displays characteristics information on the respondents and total students who were enrolled in

the fall 2007 semester. In order to test for unit non-response bias, the researcher identified differences in percentages between the data collected from the respondents and data collected from the CALS dean office. Specific characteristics variables considered in this comparison included gender, race and major. The researcher notes significance if there is a 5% or greater difference on each individual variable. In exploring the gender of the respondents, 72.3% females and 27.7% males were represented. In comparison, there were 58.5% of the enrollment were females and 41.5% were male in 2007. The results indicated 13.8% more females were represented in the study than in the college.

Table 3-4 also displays variables of race and ethnicity where comparisons were made between the participants and the enrolled CALS students in 2007. The researcher found only significant difference for Asian, who 5.2 % less students participated than the total population and Whites (6.4 % more participated). The researcher also conducted a comparison on academic major which showed there were no significance differences. Results indicate that the respondents' majors were representative of the total population (see Table 3-6).

The second method was to compare respondents to the non-respondents. If they do not appear to be different, then the results can be generalized to the population (Miller, 1983). Then the researcher gathered information on the non-respondents from the dean's office to match and compared characteristics of the non respondents and respondents to make comparisons Table 3.5. In comparing the non-respondents and respondents, there were a couple of significant differences in terms of their race and ethnicity. In terms of gender, females were represented a much greater percentage in the study where female were over 70 percent in comparison to non-respondents where females where as there were only about 53 percent. There also were significant differences for Asian respondents where Asian students make up over 10 percent of the non-

respondents where only 3 percent of Asian respondents participated in the study. In addition, White respondents were represented a much greater percentage in the study where over 71 percent were White respondents in comparison where there were only about 62 percent of the non-respondents were White.

The final method the researcher performed was ignoring non-respondents. In following Dillman's 2000 TDM approach, the researcher conducted a series of contact procedures during the data collection period. The researcher sent a reminder emails to participants to log back in and requested them to complete the survey. This procedure was conducted for respondents who did not complete the entire survey. Among the 1363 responses in this study, 1156 (84.8%) were complete, while 207 (15.2%) were considered extreme in that they failed to answer more than half of the questions. The missing data from these observations would have limited the practical value of including them in the data analysis. As a result, the 207 observations with extreme missing data were treated as unit non-response and omitted from additional analysis.

Data Analysis

This study used quantitative research methods to accomplish the specific research objectives in describing CALS students in terms of their characteristics and leadership behaviors. Descriptive research was used to accomplish research Objective 1. A correlational and causal-comparative or *ex post facto* design was employed to accomplish Objectives 2, 3, 4, and 5. In an *ex post facto* design, the researcher does not have direct control over the independent variable(s). Data analysis for this study was completed using SAS® and SPSS® statistical software package for Windows™. Objective 1 were processed through SAS® statistical software package for Windows™. Objectives 2, 3, 4, and 5 were processed through SPSS® statistical software package for Windows™.

Means and standard deviations of LPI scores were calculated. Correlation and regression procedures were conducted to identify differences in LPI scores as a function of independent variables such as gender, age, and GPA. Pearson's product moment (r) statistics were conducted to identify the magnitude of the relationship of leadership behavior to the other variables in the study (e.g. age, GPA). An index of the proportion of variance in leadership behavior explained by the independent variables was computed using R^2 and adjusted R^2 (Ary, 1996). Finally, multiple regression analysis was performed to explore meaningful and significant predictors of the dependent variable in a model (Pedhazur, 1982). Regression analysis was used to predict total LPI scores and each of the individual constructs for the purposes of better understanding of which most frequent leadership behaviors are exhibited by an undergraduate CALS student.

Method and Data Analysis Used for Objective 1

To accomplish research Objective 1 to determine self-perceived leadership behaviors of CALS students' leadership behavior (practice) participants completed the Student LPI (Kouzes & Posner, 1998). Mean scores of each of five leadership behaviors measured by the LPI were calculated scores for the six questions were computed to get each a leadership subscale for each participant. Since each behavior contained six questions, summated leadership subscale scores ranged from 6 (low) to 60 (high) for the perceived importance on each the five leadership areas. An individual mean score were generated for each leadership area and reported on a rating scale ranging from "1" (Almost Never) to "10" (Almost Always) to determine the importance of the leadership practice to their student leadership behavior. In addition, overall grand individual mean score was generated for the dependent variable of "leadership behavior" which was used in further analyses.

Method and Data Analysis Used for Objectives 2, 3, 4, and 5

Objectives 2, 3, 4, and 5 assess the influence of demographic characteristics, academic leadership experiences, community leadership experiences, organizational leadership experiences (student leadership positions at departmental, university, and community level) and the relationship between undergraduate CALS student leadership behavior and previous high school experiences on leadership behavior. The researcher conducted a correlational and regression analysis to explore relationships between the leadership behavior and independent variables. Correlational statistics analyzed the association of the independent variables with the dependent variables. Specifically, the researcher used Pearson Correlation r to determine the relationship and strength of the relationship between independent and dependent variables.

The magnitudes of the correlations were described using terms and classification appropriate for the context of social science research. A correlation of 0.10 is described as a small effect size (weak relationship), a correlation of 0.30 is described as a medium effect size (moderate relationship), and a correlation of 0.50 is described as a large effect size (strong relationship) (Cohen, 1988, pp. 82-83; Penfield, 2003, p. 185).

Regression analysis was used in an attempt to explain the influence of characteristics and leadership variables on leadership behavior. The researcher used multiple regressions to build explanatory models. According to Penfield, (2003) multiple regression is “a method of analyzing the variance of a dependent variable. Important assumptions associated with the use of multiple regressions include independence, linearity, normality, and equal variances. An alpha level of 0.05 was set *a priori* for the statistical analysis. The usefulness of regression models is evaluated by the coefficient of determination, denoted by R-Square (R^2). The coefficient of determination represents “the proportion of information in the dependent variable

that is explained or accounted for by the independent variable” (Penfield, 2003, p. 231). In the context of social science, researchers have provided general standards for interpreting the value of R^2 . An R^2 of 0.01 represents a weak relationship (small effect size), an R^2 of 0.09 represents a moderate relationship (medium effect size), and an R^2 of 0.25 represents a strong relationship (large effect size) (Cohen, 1988, pp. 79- 81; Penfield, 2003, p. 232). This classification was applied in interpreting the coefficient of determination (R^2) in this study. Adjusted R-Square values, rather than the raw coefficients, will be reported because they offer a less biased estimate for analyses with a small number of observations and numerous independent variables (Agresti & Finlay, 1997).

To address Objectives 2, 3, 4, and 5, the researcher chose to use a series of regressions because it allowed the opportunity to build models. In using the pre-existing leadership behavior framework, the researcher was able to evaluate the impact of incorporating sets of variables rather than investigating variables individually. For example, regression allows for investigation of the personal characteristics variables in a model for each leadership behavior and to compared with other leadership behaviors using the same model.

The characteristics variables may be powerful predictors of leadership behavior, but previous leadership theory suggests that leadership behavior can be explained without the inclusion of characteristics information. Individual characteristics and leadership experiences were explored in models one, two, three and four. The fourth regression model investigated the full model with all of variables added together. The last model was the reduced model, which only the significant predictors from previous model were used in predicting Leadership behaviors.

The models for predicting Leadership behaviors are as follows:

- Model 1: [Personal Characteristics+ Academic Leadership]
- Model 2: [Community Leadership]
- Model 3: [Organizational Leadership]
- Model 4: [Full Model] =[Personal Characteristics]+[Academic Leadership] + [Organizational Leadership] + [Community Leadership]
- Model 5: [Reduced Model] = [Personal Characteristics]+[Academic Leadership] + [Organizational Leadership] + [Community Leadership]

For all five sets of regression models, violations to the assumption of independence were addressed by dropping out highly correlated characteristics and leadership experiences. For example, the inclusion of pursuing a leadership minor and leadership coursework was causing excessive collinearity. To correct this problem, leadership coursework was retained and the leadership minor was dropped out of the model.

Summary

This chapter described the research design, the population of study, the instrumentation, and data analysis procedures. A descriptive study using *expost facto* and correlational design was used to reveal relationships and explain leadership behaviors of undergraduate CALS students as they related to characteristics and leadership experiences. An online instrument was used to gather information from the participants. The Student Leadership Practices Inventory and researcher-designed characteristics instrument were two sections of the instrument used in this study. Chapter 3 also included a description of the various data analysis procedures used for each objective. The quantitative study included the use of descriptive statistics (frequencies and measures of central tendency), correlational statistics, and multiple and regression. Chapter 4 will report the results of the study. Findings for each objective of the study will be provided.

Table 3-1. Reliability Coefficients for the LPI

Practice	Self	All
Model the Way	.77	.88
Inspire a Shared Vision	.86	.92
Challenge the Process	.80	.89
Enable Others to Act	.75	.88
Encourage the Heart	.87	.92

Source:(Kouzes & Posner, 2002)

Table 3-2. Reliability Coefficients for the LPI for pilot study (N=27)

Practice Leader	Self
Combined 30 Question Leadership Measure	.96
Model the Way	.81
Inspire a Shared Vision	.88
Challenge the Process	.82
Enable Others to Act	.81
Encourage the Heart	.88

Source: (Pilot Study September 2007)

Table 3-3. Questions for the on “LPI Leadership Behaviors” inventory

Model the Way
Sets personal examples of what is expected
Maintains a system of standards
Follows through on promises and commitments
Seeks feedback actions on performance
Develops a common set of values
Has a clear leadership philosophy
Inspiring a Shared Vision
Talks about future trends
Describes the image of the future
Shares dream of future with others
Enlists a common vision
Paints the “big picture”
Speaks with conviction of the purpose
Challenge the Process
Seeks challenging opportunities
Challenges people to be innovative
Looks outside the boundaries
Asks “What can we learn?”
Sets achievable and measurable goals
Takes risks and experiments
Enabling Others to Act
Develops relationships
Listens to diverse points of view
Treats people with respect
Supports others decisions
Freedom to choose your work
Ensures that others grow
Encourage the Heart
Praises people for job well done
Expresses confidence in others abilities
Rewards people for their contributions
Recognizes commitment to values
Finds ways to celebrate accomplishments
Shows appreciation and support

Note: Scale, 1=Almost Never, 2=Rarely, 3=Seldom, 4=Once in While, 5=Occasionally, 6=Sometimes, 7=Fairly Often, 8=Usually, 9=Very Frequently, 10=Almost Always

Table 3-4. CALS respondents and population characteristics for fall 2007

Variable	N =All Students		n=Participants in the study	
	N	%	n	%
Gender				
Female	2166	58.5	738	72.3
Male	1536	41.5	282	27.7
Total	3702	100	1020	100
Race & Ethnicity				
Asian or Asian American	305	8.2	32	3.0
American Indian or Native Alaskan	90	2.4	14	1.3
Black or African American	378	10.2	105	10.3
Hispanic or Latino	480	13.0	128	12.1
Hawaiian or Pacific Islander	17	.4	8	0.7
WHITE	2401	64.8	750	71.2
Other	31	.8	17	1.6
Total	3702	100	1017	100

Table 3-5. Non-respondents and respondents' characteristics for fall 2007

Variable	N =All Non Respondents		n=Participants in the study	
	N	%	n	%
Gender				
Female	1428	53.2	738	72.7
Male	1254	46.8	282	27.7
Total (N=3702)	2682	100	1020	100
Race & Ethnicity				
Asian or Asian American	273	10.3	32	3.0
American Indian or Native Alaskan	74	2.7	14	1.3
Black or African American	275	10.4	105	10.3
Hispanic or Latino	352	13.3	128	12.1
Hawaiian or Pacific Islander	9	0.3	8	0.7
WHITE	1651	62.3	750	71.2
Other	14	0.7	17	1.6
Total	2648	100	1054	100

Table 3-6. All majors for CALS students' characteristics for fall 2007

Majors of CALS Students	N =All Students	%	n= all respondents	%
Agricultural Education and Communication	64	1.7	30	3.3
Agricultural Operations Management	115	3.1	11	1.2
Animal Sciences	558	15.0	155	17.0
Biology	167	4.5	45	4.9
Botany	17	0.4	4	0.4
Entomology and Nematology	28	0.7	11	1.2
Environmental Management in Agriculture	10	0.2	2	0.2
Environmental Science	114	3.0	36	3.9
Family, Youth, and Community Sciences	474	12.8	148	16.2
Food and Resource Economics	367	9.9	86	9.4
Food Science and Human Nutrition	859	23.2	197	21.6
Forest Resources and Conservation	38	1.0	11	1.2
Geomatics	78	2.1	17	1.9
Golf and Sports Turf Management	20	0.5	6	0.7
Horticultural Science	27	0.7	7	0.8
Landscape and Nursery Horticulture	60	1.6	12	1.3
Microbiology and Cell Science	333	9.0	61	6.7
Natural Resource Conservation	46	1.2	2	0.2
Packaging Science	32	.08	10	1.1
Plant Science - Agronomy	22	.05	8	0.9
Plant Science - Plant Pathology	22	.05	3	0.3
Soil and Water Science	8	.01	0	0.0
Statistics	8	.01	0	0.0
Wildlife Ecology and Conservation	161	4.3	43	4.7
Non-Degree Seeking	0	5.6	4	0.4
Total	3702	100	913	100

CHAPTER 4 RESULTS

Chapter 1 defined the purpose of the study: to assess CALS students' past and present leadership experiences and personal characteristics as predictors of leadership behavior. Chapter 2 discussed previous research related to this study and reviewed relevant theoretical and conceptual frameworks. Chapter 3 explained the research design, population, instrumentation, and data collection and analysis procedures.

This chapter presents the research findings of the study. Findings are organized by objectives. The five specific research objectives were as follows:

1. To determine self-perceived leadership behaviors of CALS students as measured by the Student LPI (Kouzes & Posner, 1998)
2. To assess the influence of the demographic characteristics of current CALS students on leadership behaviors
3. To assess the influence of community leadership experiences of undergraduate CALS student leaders on leadership behaviors
4. To assess the influence that organizational leadership experiences (at the departmental, university, and community levels) have on leadership behaviors
5. To assess the relationship between undergraduate CALS student leadership behavior and previous high school experiences.

Descriptive Analysis

There were 1,363 responses from the total population frame of 3,429 for a response rate of 39.70%. There were 207 responses which did not contain usable data or contained incomplete data. These responses were omitted from the analysis. A total of 1,156 students completed the survey yielding a response rate of 33.7%. Concerning the response rate conducted through an electronic survey methodology, these response rates were not unreasonably low. In previous survey research, Grandcolas, Rettie, and Marusenko (2003) stated that response rates with a web survey methodology may be low when compared to traditional survey methodologies. The article

provided a comparison of response rates for studies completed by traditional methodologies face-to-face and mail and web-based, or e-mail instrumentation as low as 6%, 7%, and 19.3%.

Objective 1: To determine self-perceived leadership behaviors of CALS students as measured by the Student LPI (Kouzes & Posner, 1998)

All CALS student respondents were instructed to complete the individual (Self) leader component portion of the LPI, which was used to assess the self-perceptions of the respondents' own actions within the five exemplary leadership behaviors. To measure leadership behavior, respondents provided their responses to a 30 -item inventory on a "1" to "10" Likert scale.¹ Mean scores and standard deviations were calculated for each of the leadership behaviors as well as for overall mean of leadership. The results are presented in Table 4-1.

A grand mean score was computed to be 7.90, (SD=1.15) equating to "usually" with an alpha =.961 for all thirty items. This mean score became the dependent variable "leadership" for the 80.1% (n = 927) of the 1,156 respondents who completed the leadership inventory.

Of the five scale scores, the highest mean was reported for the leadership behavior of *Enabling Others to Act* at (M = 8.50) with a scale response of "usually." Conversely, the leadership behavior *Inspiring a Shared Vision* reported the lowest mean score at (M = 7.44) with a scale response of "fairly often." Table 4-1 shows standard deviations for items in this leadership index ranged from 1.06 to 1.51 for the individual. These results indicate that this sample of CALS students exhibited the leadership behavior of *Enabling Others to Act* on high frequency and assisted others in developing and exhibiting leadership. However, with setting a vision, CALS students exhibited this behavior on often but not on a frequent basis. A more thorough examination of each of the scales is provided is provided below.

¹ The Likert scale ranged from "1"=Almost Never, "2"= Rarely, "3"=Seldom, "4"=Once in While, "5"=Occasionally, "6"=Sometimes, "7"=Fairly Often, "8"=Usually, "9"=Very Frequently, "10"=Almost Always

Modeling the Way

The leadership practice of *Modeling the Way* had an individual mean score of 8.05 and a standard deviation of 1.20. The individual standard deviations for individual items in this index ranged from 1.28 to 1.88. “Develops a common set of values” was the lowest mean (M=7.61), which equated to “fairly often”. The statement of “Follows through on promises and commitments” generated the highest mean (M=9.03) with a scale response of “very frequently”.

Inspiring a Shared Vision

The leadership behavior for *Inspiring a Shared Vision* had the lowest mean score of (M=7.44) of the five leadership behaviors. The Cronbach’s alpha reliability coefficient for *Inspiring a Shared Vision* was .886. The leadership phrase, “Enlists a common vision” obtained the lowest mean of (M=6.95, “sometimes”). In comparison, the leadership statement of “Speaks with conviction of the purpose” had the greatest mean score (M =7.90, “usually”) among respondents (see Table 4-1).

Challenge the Process

Challenge the Process had a mean score of M=7.60. The leadership phrase “Challenges people to be innovative” had the lowest rating of (M=7.16, SD= 1.93 “fairly often”). The leadership phrase “Set achievable and measurable goals” was rated as “usually” as the greatest mean score (M= 8.06, SD 1.71) among respondents on the leadership behavior *Challenge the Process*.

Enabling Others to Act

The leadership practice of *Enabling Others to Act* had an individual mean of 8.50 standard deviation of 1.06. The individual standard deviations for individual items in this index ranged from 1.11 to 1.73. The leadership statement of “treats people with respect” was the highest mean response (M = 9.34, SD = 1.11 “very frequently”). In contrast, the leadership statement “Ensures

that others grow” generated the lowest mean response ($M= 7.76$, $SD 1.73$) with a scale response of (“fairly often”) (see Table 4-1).

Encourage the Heart

The final leadership behavior of *Encourage the Heart*, had a mean of 8.06 from six items. The leadership phrase, “Praise people for job well done” received a greatest mean score among respondents ($M=8.68$), scale rating of “usually”. “Recognizes commitment to values” obtained the lowest mean response of $M=7.55$, “fairly often”.

In summary, the leadership behavior of *Enabling Others to Act* had the highest mean score, whereas the lowest individual mean score was for the leadership behavior of *Inspiring a Shared Vision*. The CALS students rated highest of the response to the statement of “Treats people with respect” with a scale rating of “very frequently”. These results indicating that CALS student exhibit this leadership behavior the most whereas treating people with respect is a very important characteristic of leadership for CALS students. In terms of leadership style this behavior exhibits a more transactional behavioral style. In comparison, CALS students responded statement of “Enlists a common vision” with a scale rating of “sometimes”, which indicates having a shared vision is not a leadership behavior that CALS students seem to exhibit with great frequency and constancy; that exhibits a transformational leadership style. Overall CALS rated themselves relatively high on the LPI with an individual average mean of $M =7.90$. Inter-correlations between the LPI leadership behaviors and the overall leadership behavior were calculated. Correlations between the leadership behaviors and the overall leadership variable had a range of .61 to .92. All leadership behaviors were all scores were statistically significant.05 level (see Table 4-2).

Objectives 2, 3, 4, and 5

Objectives 2, 3, 4, and 5, are concerned with assessing the influence of leadership experiences (academic leadership experiences, community leadership experiences, organizational leadership experiences, previous leadership experiences, and personal characteristics) on the dependent variable of “Leadership” and the five leadership behaviors, as measured by the LPI. In support of these objectives, the researcher calculated an overall mean variable for leadership behavior “Leadership” in addition to the five individual leadership behaviors as defined by the LPI and used these in the correlation and regression analyses. The five LPI leadership behaviors, were identified in the analyses as “Challenge” = *Challenge the Process*, (b) “Inspire” = *Inspire a Shared Vision*, (c) “Enable” = *Enable Others to Act*, (d) “Model” = *Model the Way*, and (e) “Encourage” = *Encourage the Heart*. The distributions of predictors are shown in Tables 4-3 through Table 4-15. Correlation and regressions were calculated with variable of Leadership for further analysis.

Demographic Characteristics

Objective 2 of the study was to describe select characteristics of current CALS students at the University of Florida and assess the influence of these on leadership behaviors. The characteristics collected in the survey included gender, age, racial background and ethnicity, and living environment. As reported in Table 4-3, 88% of the 1,156 respondents provided characteristics information. Nearly three-fourths of the respondents were females. In terms of age, the respondents’ ages ranged from 17 to 23 years old or older with median age of 21 years.

Descriptive analysis on racial background and ethnicity of the respondents also are displayed in Table 4-3. Over two-thirds of the respondents (71.2%) were White, 12.1% were Hispanic or Latino, 10% were Black or African American, 3.1% were Asian or Asian-American, 1.6% were classified as Other, and .7% were Hawaiian or Pacific Islander.

More than half (52.4%) of CALS students indicated that they grew up in a suburban area. In terms of the study, the suburban area was described as a town or city with a population ranging from 2,500 to 50,000. One-third of the sample, 32.5%, indicated they grew up in an urban area with a population of 50,000 or greater while 15.1% of the respondents were from a rural area of 2,500 or less.

Nearly one-fourth of the respondents (22.9%) responded that they were first in their immediate family to attend college (see Table 4-4). Other descriptive characteristics collected and examined in this study included marital status, citizenship, and parental influence. In terms of marital status, 95% indicated that they were “single” or not married and 5% were married (See Table 4-4). A large majority (97.4%) of the respondents in the study were U.S. citizens, with 93.6% of that number being Florida residents. These findings are similar to the citizenship status of all students currently enrolled in CALS where more than 97% of the students are U.S. citizens.

Table 4-4 also reports the parental influence where three-fourths of the respondents reported they came from a family with both parents. About one-fifth (19.9%) were raised in single-parent homes and the remainder reported being reared in other circumstances such as grandparent or an extended family.

The respondents in the study consisted of undergraduate students enrolled in the Fall 2007 semester in the College of Agricultural and Life Sciences (CALS) at the University of Florida. These students are undergraduate students pursuing a Bachelor of Science degree in the areas of pre-professional training, food, agriculture, natural resources, and the life sciences. As reported in Table 4-5, CALS students selected their majors from a list of 26 majors provided by the dean’s office of the college. Of the total number of respondents, about one-fifth (21.6%) were

Food Science and Human Nutrition majors, followed by Animal Sciences majors (17%), Family, Youth, and Community Sciences majors (16.2%), and Food and Resource Economics majors (9.4%). These four majors are representative of the majority of students in the college for the Fall 2007 semester.

Respondents in the study also described their academic status. As reported in Table 4-6, three-fourths (77.4%) of the respondents were labeled as “upperclassmen” (junior and seniors). About one-third (33.6%) entered as freshmen into CALS, 28.8% entered other colleges at UF as freshmen, 32.4% entered the university as transfer students from a community college and 5.7% were transfers from another four-year university. Nearly two-thirds of respondents (63%) had a grade point average (GPA) of 3.26 or greater. Less than 4% had GPAs below 2.25, and nearly one-fourth (24.3%) had a GPA of 3.76 or greater.

Academic Leadership Experience

Leadership courses taken by respondents are presented in Table 4-7. Less than 10% of the respondents have completed a formal leadership course. Respondents also were asked if they had participated in any type of leadership training. Leadership training was defined as a course, seminar, or training session that lasted more than three hours during their college career. As indicated in Table 4-7, nearly one-half (46.8%) of CALS students reported receiving no leadership training. Conversely, about 16% reported attending multiple leadership training sessions, with 4.7% of the respondents indicating that they had completed five to six leadership trainings sessions.

Organizational Leadership Experience

Respondents in the study were asked to describe their organizational leadership experience. Information was obtained for current organizational involvement (in CALS and outside of CALS), leadership positions, numbers of years of involvement, and previous (high school)

leadership experiences. The results are reported in Tables 4-8 through 4-12. Of the 1,156 respondents, 86.2% responded to the question about involvement in an organization during their college experience. As shown in Table 4-8, a total of 666 CALS students (57.6%) reported to being a part of an organization within CALS. Students were also involved in numerous organizations in CALS. Of organizations that CALS students have membership inside of the college, more than one-eighth of the respondents (14%) were members of the Pre-Vet Club, 8.3% were members of the Family, Youth & Community Sciences Club, 8% were members of Alpha Zeta (agricultural honor fraternity), and 6.5% members of CALS Ambassadors (student representatives of the college)

Table 4-8 also reported that of the students who participate in organizations in CALS, one-third of the students held an officer position where 3.7% were presidents, 3.8% were vice-presidents, 3.0% served as secretaries, 2.1% were treasurers and 7.1% held other leadership roles within their representative organizations within the college.

In Table 4-9, students responded to the level of membership in organization. Of the 515 responses, the large majority of the respondents (94.5%) were involved on the local or chapter level. It is interesting to note that of those involved beyond the local level, the majority 5.6% (n = 29) were involved on the national level.

Based on the data reported in Table 4-10, 17.6% were involved for less than one year, almost one-half 45.8% have been involved in their organization for least one year and 22.5% were involved with their organization for least two years. Finally, over 14% were involved in CALS organizations for three or more years.

Table 4-11 indicates that almost 60% participants are members of at least one organization outside of CALS. The respondents were asked what type of organization(s) (service, social,

social/service, fraternity/sorority, honorary, sports, other) outside of CALS that they were currently members of and if they held leadership positions. Service and social/service organizations were most frequently mentioned. About one-fourth (24.3%) were members of one service organization and 17.5% were members of a social/service organization. The same trend held true for those belonging to two or more organizations. Other organizations in which CALS students held membership outside of the college included being members in a fraternity/sorority (14.2%) and honorary societies (9.7%). Of the 826 CALS students involved in an organization outside of the college, 27.4% were involved with two organizations, 10.5% with three organizations, and 2.4 % with four or more organizations.

As reported in Table 4-12, 558 CALS students responded that they held a leadership position in one or more organizations outside of CALS. The majority (62.1%) indicated that they held an officer or leadership position within one organization, 25.4% within two organizations, 9.6% and the remaining 12% holding an officer or leadership position within multiple organizations outside the college.

In Table 4-12, CALS students reported to the level of organizational leadership. Of the 616 responses, 7.7% (n = 48) were involved on the national/regional level, 3.6% were involved on the state/district level, and 88.4% were involved on the local chapter level. The majority of respondents (53.9%) had participated in their organization exactly one year or less, while 6.5% participated four or more years in their organization.

Previous leadership experiences are reported in Table 4-13. These responses related to high school activities. The results indicated that more than 60% were members of the National Honor Society and 28.2% were in student government. Nearly two-thirds (64.6%) participated in one

of the following sports: baseball/softball, swimming diving, basketball, football, volleyball, and cross-country/track & field. Membership in other organizations can be found in table 4-13.

Respondents also were asked to indicate their previous leadership roles in regard to being an officer or in a leadership position. Table 4-14 reports that of the 1,200 respondents who were in previous leadership positions, 25.3% were presidents, 21.5% were vice-presidents, 17.6% were secretaries, 14.4% were treasurers, 16.3% were committee chairs, and 4.8% were membership coordinators. Almost three-fourths (73.1%) of previous leadership activities of CALS students was performed on the club level while another 15% of previous leadership activities were performed on the state level or higher.

Community Leadership Experience

Respondents also were asked to indicate their previous community leadership experience. As reported in Table 4-15, 88.1% of respondents responded “yes” if they participated in some type of community service activity in high school. A total of 965 respondents reported how often they participated in service activities in high school. The results indicated 5.6% participated once a year, 17.3% once every six months, 34.7% at least once a month, 36.1% weekly, and 6.3% daily.

In comparison, more than two-thirds of the respondents (72.3%) are involved in some type of community service or community outreach activity in college. Respondents reported how often they participated in service activities with 8.5% having participated once a year, 16.5% participated once every six months, 23.5% participated at least once a month, 19.3% participated weekly, and 2.3% participated daily. These results indicated that community service and outreach is an important activity of CALS students and would indicate the above normal leadership drive of these students in the sample. It would also appear that community service and outreach may have an influence on leadership behavior of CALS students.

In summary, the majority of the respondents was female, with the median age 21 years old, and was White and lives in a suburban environment. Most CALS students in this study are not the first in their family to attend college, are single, US citizens, and grew up in a home environment with both parents. The majority of the respondents were upperclassman (juniors and seniors status), with over 60% having a grade point average of 3.26 or greater. Food and Science and Human Nutrition, Animal Sciences and Family, Youth, and Community Science were the most common majors.

About one-third of the respondents entered the College of Agricultural and Life Sciences as freshmen and other two-thirds entered the college as a transfer student from another college within the University or from a community college. Over ninety percent had not completed a formal leadership course, while over fifty percent had participated in some leadership training activity. Overall CALS students are active in regards to organizational leadership with over half involved in CALS student organization and more than 60% involved in a student organization outside of CALS. Respondents indicated that they held officer positions and were involved on the national level of their organizations. The most popular organizations were fraternities and sororities, honorary societies, and some type of sports organization. Most CALS students have been involved in their organizations one year or less. Finally, respondents were active in community service both in high school and in college and most participated in some type of community service weekly routine. CALS students in the study appear to be highly motivated students who participate in organizational leadership activities (local clubs and national organizations alike). Overall, respondents also have a high level of commitment to community service and pursue servant leadership opportunities. CALS students exhibit characteristics of

being high academic achievers and civic leaders which all are characteristics that have been reported to shape effective leadership behavior.

Predictors of Leadership Behaviors using Multiple Regression Models

In Tables 4-16 thru 4-29 correlation and regressions analysis was conducted on the new variable of Leadership and each of the five leadership behaviors with independent variables in the study. Regression analyses were performed in creating a reduced model which identified the statistically significant association of independent variables with overall self-perceived leadership behavior of CALS students. Additional analysis explores similar models on the five leadership behaviors as defined by LPI.

Objective 2. To assess the influence of the demographic characteristics of current CALS students on leadership behaviors

In considering correlations between personal characteristics and leadership behavior, the researcher found low and weak relationships. The Pearson product moment correlations were computed for selected personal characteristics and the overall leadership variable and presented in Table 4-16. Two variables, Gender ($r = .104$) and Hispanic ($r = .073$), were both shown to have a weak positive significant correlation with overall leadership and specific behaviors. Gender also shown weak significant relationships for each of the five individual leadership behaviors Model ($r = .110$), Inspire ($r = .061$), Challenge ($r = .043$), Enable ($r = .141$), and Encourage ($r = .142$), respectively. These statistics suggest that females are likely to report having higher leadership behavior scores than males (Table 4-16). Three of five leadership behaviors Model ($r = .041$), Inspire ($r = .093$), and Encourage ($r = .081$) were also found to have positive statistical significance for Hispanic. These statistics suggest that CALS students who are Hispanic are more likely to report higher scores on selected leadership behaviors than students who are not Hispanic.

Table 4-17 shows the results of the regression analysis which uses the personal characteristics as explanatory variables for Leadership. This had an adjusted R-square of .01 reflecting a negligible relationship. In this model, variables Gender ($\beta = .26$) and Hispanic ($\beta = .11$) had a positive parameter estimate that was statistically significant. This model was not significant, although the variable had a significant interaction on Gender and the variable of Hispanic in the study. Overall, this model only explained .011% ($R^2 = .01$) of the overall variance in leadership behaviors and was significant.

In regression analysis which uses personal characteristics as explanatory variables for the five leadership behaviors, the variable Gender had a positive parameter estimate that was statistically significant for Model ($\beta = .31$) Enable, ($\beta = .34$), and Encourage ($\beta = .39$). Overall, the variable Gender was significant in four of the six modes except Inspire a Shared Vision and Challenge the Process. The variable of Hispanic also reported positive parameter estimate that was statistically significant for the following leadership behavior: Inspire ($\beta = .46$), Enable ($\beta = .22$), and Encourage ($\beta = .37$). Overall, this model only explained between ($R^2 = .4\% - 2\%$) of the variance in the five leadership behaviors and was significant with the exception of Inspire (Table 4-17).

Table 4-18 and 4-19 shows the results of the correlations and regression analysis which used the academic leadership variables as explanatory variables for Leadership and five leadership behaviors. All of the models had an adjusted R-square of .002 or less, reflecting a negligible relationship. In these models, there were no significant variables and each model was not significant.

Objective 3. To Assess the Influence that Community Leadership Experiences (at the Departmental, University, and Community Levels) Have on Leadership Behaviors

In the community leadership model, respondents were asked to indicate their level of involvement in community activities both in high school and college. The respondents also were asked if they had a community role model that most influenced their community leadership experiences. Finally respondents were asked to report the frequency of their participation in the community. The independent variables; HS COMMUNITY SERVICE (if you participated in community service in high school), HS COMMUNITY PARTICIPATION (the frequency of an individual's participation in community service during high school) CURRENT COMMUNITY SERVICE (if an individual currently participates in community service in college); SERVICE PARTICIPATION (the frequency of an individual's participation in community service currently) and HAD A ROLE MODEL (person could be identified as community role model).

Pearson Product Moment Correlations were computed for selected community leadership characteristics and leadership behavior. Among the community leadership experience variables, the researcher found weak to moderate relationships for all of the independent variables in the model for the dependent variables of Leadership and also the five leadership behavior practices (Table 4-20). The variable HS COMMUNITY SERVICE ($r = .09$) and HS COMMUNITY PARTICIPATION ($r = .09$) had weak positive but significant relationship. The relationships suggest that CALS students who participated in community service routinely in high school are more likely to report higher scores on leadership behavior. The researcher also found that current CALS students, who currently participate in some community service, also have reported having higher leadership behavior scores. The variables that explore current community service CURRENT COMMUNITY SERVICE ($r = .19$) and SERVICE PARTICIPATION ($r = .16$) were

weak to moderately significant. Additional correlations among these constructs and leadership behaviors are outlined in Table 4-20 and show a similar pattern.

In Table 4-21 displays the results of the regression analysis, which used Leadership behavior as the dependent variable. In this model represents independent variables were statistically significant and meaningful in the model. In this model, CURRENT COMMUNITY SERVICE, the variable for current community service, had a positive parameter estimate that was significant ($\beta = .44$). Overall the model is an adjusted R-Square of .03 represented a weak but statistically significant fit of the data.

The regression analysis also uses community leadership experiences as explanatory variables for the five leadership behaviors. In five leadership behaviors the variable Current Community Service had a positive parameter estimate that was statistically significant Model ($\beta = .42$), Inspire ($\beta = .37$), Challenge ($\beta = .41$), Enable ($\beta = .41$), and Encourage ($\beta = .44$). The variable of HAD A ROLE MODEL ($r = .01$) both had a weak, negative relationship that was significant ($\beta = -.19$) for the leadership behavior of Modeling the Way. The statistic suggests that CALS students who have community role models are also more likely to report lower scores on leadership behavior. Thus, CALS students who have role models may not rate themselves high on leadership behaviors as being compared to their identified role model. Overall, the results from this community leadership experience model explained between ($R^2 = 2\% - 4\%$) of the variance in the five leadership behaviors and was significant (Table 4-21).

Objective 4. To Assess the Influence that Organizational Leadership Experiences (at the Departmental, University, and Community Levels) Have on Leadership Behaviors

Respondents were asked to indicate the type of organization(s) (service, social, social/service, fraternity, sorority, honorary, intramural sports, other) activities that they were a member. The respondents were also asked to provide information on their highest leadership

position (i.e., president, vice- president, secretary, treasurer, membership coordinator, committee chair, other) and on what level in the organization they held an office (i.e., chapter, district, state, regional, national). Finally respondents were asked to report the length of their participation in the organization. A multiple linear regression model was used for leadership behavior, with the independent variables of CALSLEADER (leadership offices held in CALS), UFLEADER (UF leadership), and UFORG (member of a UF organization).

Correlations among the organizational leadership characteristics and Leadership are presented in Table 4-22. The UFORG variable was found to have a weak positive significant interaction with overall leadership ($r = .09$). The statistic suggests CALS students that who were members of organizations outside of CALS are also likely to report higher scores on leadership behavior. This variable explored the current student leadership participation outside of the CALS college and at what level that CALS students are participating (chapter, regional, state, national). With respect to organizational leadership behavior, the analysis suggests that students who were involved in organizations outside CALS students were more likely to report higher leadership behavior scores for overall leadership, modeling the way and encouraging the heart.

In the regression model for overall leadership, none of the organizational leadership variables was statistically significant and meaningful in the model (Table 4-23). The model had an adjusted R-Square of .02 representing a weak relationship and but it was statistically significance. The regressions of each of the five leadership behaviors on the organizational leadership experiences showed that no organizational variables were statistically significant. Overall, the results from this organizational leadership experience model explained between ($R^2 = 1\% - 2\%$) of the variance in the five leadership behaviors and was significant.

Objective 5. To Determine the Relationship between Undergraduate CALS Student Leadership Behavior and Previous High School Experiences.

Objective five of the study was to determine the relationship of previous organizational leadership experiences scores, which are presented in Tables 4-13 and 4-14, and shows measures that were collected. Respondents indicated various high school and other civic organizations in which they were involved. Of the 987 CALS students who responded, more than 60% were involved with the National Honor Society, 28% participated in student government, 29.5% were involved in a foreign language club and more than 85% participated in some type of organized Athletics. Some of the traditional leadership agricultural development programs had strong representation as previous organizational leadership activities totaling over 26.2%, which includes 11.6 % FFA membership, 8.2% Boy Scouts/Girls Scouts and 6.4% were involved in 4-H activities. Over 46.5% indicated that they had participated in other activities that were not pre-selected. These previous leadership experiences included activities such as Key Club, Math Club, and DECA Club.

Table 4-22 summarizes Pearson Product Moment Correlations for the relationship between previous leadership experiences and leadership. Correlations were calculated for the relationships between Leadership and independent variables that explored previous leadership activities and whether or not participates were in a leadership position. The variable PRIOR OFFICER had a weak positive relationship with overall leadership ($r=.16$). Overall, the regression model shows an adjusted R-square of .02 percent for accounting for the variance of leadership behaviors (Table 4-23). These results suggest that CALS students who have participated in high school organizational leadership activities will report higher scores on Leadership behavior. PRIOR OFFICER was significant had a positive parameter estimate that was significant ($\beta = .24$). In five leadership behaviors the variable PRIOR OFFICER had a

positive parameter estimate that was statistically significant ($\beta = .24$) Model, ($\beta = .22$) Inspire, ($\beta = .32$) Challenge, ($\beta = .20$) Enable, and Encourage ($\beta = .24$). Overall, the results from this organizational leadership experience model explained between ($R^2 = 1\% - 2\%$) of the variance in the five leadership behaviors and was significant (Table 4-23).

Predictors of Leadership Behaviors using Multiple Regression Models

Using regression models for explaining Leadership behavior, the researcher found that the full model produced an adjusted *R*-square of .07, with a *p* value of .009 (Table 4-24). This is still a very weak relationship by social science standards (Cohen, 1988, pp. 79-81; Penfield, 2003, p. 232). The influence of the variables of Gender, Prior Officer, Hispanic and Current Community Service, remained significant. In the reduced model, all four variables displayed statistical significance at the $p = .05$ level.

Statistics from the full and reduced models are displayed in Tables 4-24, 4-25, 4-26, 4-27, 4-28, and 4-29, to allow for more direct interpretation of relationships. The researcher estimated reduced models that included only those parameters with a *p*-value less than .10. However, the reduced models did not display any substantive changes.

The key findings from the regression models are as follows:

- The regression models generally were significant for reported leadership behavior, and the amount of variance explained increases with the addition of explanatory variables.
- GENDER has a positive relationship with overall leadership behavior, and that relationship remains significant when other variables are controlled. The variable Gender was significant in four of the six modes except Inspire a Shared Vision and Challenge the Process. Other variables that maintained a positive but weak relationship with the dependent variable of Leadership was Prior Officer, Hispanic, and Current Community Service when other variables are controlled.

Summary

This chapter presented the findings on the study. The findings were organized and presented by the following objectives:

1. To determine characteristics variables of current CALS students
2. To determine self-perceived leadership behaviors, as measured by using the Student LPI (Kouzes & Posner, 1998)
3. To assess the influence of community leadership experiences of undergraduate CALS student leaders on leadership behaviors
4. To assess the influence that organizational leadership experiences (at the departmental, university, and community levels) have on leadership behaviors
5. To determine the relationship between undergraduate CALS student leadership behavior and previous high school experiences

Key findings from the regression models are as follows: Using regression models for explaining overall leadership behavior, the researcher found that the full model produced an R -square of .07, with ($R^2_{adj} = .06$), p value of .003. The results were statistically significant.

The influence of the variables, Current Community Service, Hispanic students and Prior Officer remained significant throughout all six models. The variable Gender was significant in four of the six modes except Inspire a Shared Vision and Challenge the Process.

Chapter 5 offers a detailed discussion of the study's findings, including conclusions drawn from the findings. In addition, Chapter five will prove recommendations for future implementation of leadership behavior development and recommendations for future research.

Table 4-1. Descriptive Statistics for Responses on LPI Leadership behaviors

Leadership Behavior	<i>N</i>	<i>M</i>	<i>SD</i>
Grand “Leadership” Mean	927	7.90	1.15
Model the Way	1040	8.05	1.20
Sets personal examples of what is expected	1150	8.17	1.56
Maintains a system of standards	1143	7.77	1.66
Follows through on promises and commitments	1144	9.03	1.28
Seeks feedback actions on performance	1146	7.78	1.88
Develops a common set of values	1056	7.61	1.80
Has a clear leadership philosophy	1060	7.89	1.76
Inspiring a Shared Vision	1033	7.44	1.51
Talks about future trends	1145	7.17	1.89
Describes the image of the future	1146	7.08	1.97
Shares dream of future with others	1137	7.65	1.86
Enlists a common vision	1065	6.95	2.02
Paints the “big picture”	1062	7.85	1.81
Speaks with conviction of the purpose	1052	7.90	1.84
Challenge the Process	1034	7.60	1.35
Seeks challenging opportunities	1144	7.80	1.65
Challenges people to be innovative	1143	7.16	1.93
Looks outside the boundaries	1143	7.49	1.84
Asks “What can we learn?”	1143	7.48	1.84
Sets achievable and measurable goals	1056	8.06	1.71
Takes risks and experiments	1062	7.54	1.88
Enabling Others to Act	1029	8.50	1.06
Develops relationships	1049	8.66	1.37
Listens to diverse points of view	1144	8.47	1.46
Treats people with respect	1144	9.34	1.11
Supports others decisions	1048	8.03	1.48
Freedom to choose your work	1062	7.95	1.58
Ensures that others grow	1057	7.76	1.73
Encourage the Heart	1012	8.06	1.32
Praises people for job well done	1048	8.68	1.38
Expresses confidence in others abilities	1133	7.97	1.66
Rewards people for their contributions	1136	7.76	1.72
Recognizes commitment to values	1052	7.55	1.95
Finds ways to celebrate accomplishments	1059	8.06	1.70
Shows appreciation and support	1057	8.23	1.61

Table 4-2. Inter-correlations between leadership behavior and overall leadership

Variable	Leadership	Model	Inspire	Challenge	Enable	Encourage
Model	.92*					
Inspire	.89*	.76*				
Challenge	.91*	.79*	.81*			
Enable	.85*	.76*	.61*	.71*		
Encourage	.89*	.78*	.71*	.71*	.77*	

Note * $p \leq .05$

Table 4-3. Characteristics of Undergraduate CALS Students

<u>Gender</u>	n	%
Male	282	27.7
Female	738	72.3
Total	1020	100
<u>Age</u>		
17 year-old and younger	5	.5
18 year-old	121	11.9
19 year-old	115	11.3
20 year-old	198	19.4
21 year-old	245	24.0
22 year-old	149	14.6
23 year-olds and older	187	18.3
Total	1020	100
<u>Race and Ethnicity of CALS Students</u>	n	%
Asian or Asian American	32	3.0
American Indian or Native Alaskan	14	1.3
Black or African American	105	10.0
Hispanic or Latino	128	12.1
Hawaiian or Pacific Islander	8	.7
White	750	71.2
Other	17	1.6
Total	1054	100
<u>Living Environment of CALS Students</u>	n	%
Rural	154	15.1
Suburban	533	52.4
Urban	331	32.5
Total	1018	100

Table 4-4. Other Characteristics of CALS Students

<u>Family College Experience of CALS Students</u>	n	%
First Generation College Student	234	22.9
Non-First Generation College Student	788	77.1
Total	1022	100.0
<u>Marital Status of CALS Students</u>	n	%
Single	966	95.0
Married	51	5.0
Total	1017	100.0
<u>Citizen of CALS Students</u>	n	%
U.S. Citizen	994	97.4
Non-Citizen	533	2.5
Florida Resident	955	93.6
Total	1020	100.0
<u>Parental Influence</u>	n	%
Both Parent	774	75.7
Single Parent	203	19.9
Grand Parent/Extend Family	12	1.2
Other	33	3.2
Total	1022	100.0

Table 4-5. Academic Majors

Majors of CALS Students	n	%
Agricultural and Biological Engineering	4	0.4
Agricultural Education and Communication	30	3.3
Agricultural Operations Management	11	1.2
Animal Sciences	155	17.0
Biology	45	4.9
Botany	4	0.4
Entomology and Nematology	11	1.2
Environmental Management in Agriculture	2	0.2
Environmental Science	36	3.9
Family, Youth, and Community Sciences	148	16.2
Food and Resource Economics	86	9.4
Food Science and Human Nutrition	197	21.6
Forest Resources and Conservation	11	1.2
Geomatics	17	1.9
Golf and Sports Turf Management	6	0.7
Horticultural Science	7	0.8
Landscape and Nursery Horticulture	12	1.3
Microbiology and Cell Science	61	6.7
Natural Resource Conservation	2	0.2
Packaging Science	10	1.1
Plant Science – Agronomy	8	0.9
Plant Science - Plant Pathology	3	0.3
Soil and Water Science	0	0.0
Statistics	0	0.0
Wildlife Ecology and Conservation	43	4.7
Dual Major	4	0.4
Total	913	100

Table 4-6. Academic Leadership Characteristics

<u>Academic Status</u>	n	%
Freshman	141	14.0
Sophomore	86	8.6
Junior	343	34.1
Senior	436	43.3
Total	1018	100.0
<u>Grade Point Averages of CALS Students</u>	n	%
3.76-4.00	243	24.3
3.26-3.75	388	38.7
2.76-3.25	269	26.9
2.26-2.75	67	6.7
2.00-2.25	27	2.7
Below-2.00	8	0.8
Total	1002	100.0
Note. GPA is based on 4.0 scale		
<u>First Enrolled in the University</u>	n	%
Freshman in CALS	342	33.6
Freshman in Other College	288	28.3
Transfer Student from Community College	330	32.4
Transfer student from 4-Year University	58	5.7
Total	1018	100.0

Table 4-7. Central Tendency of CALS Students' Leadership Education

Leadership Course Work	n	%
College Leadership Course	96	9.2
No Leadership Course	942	90.8
Total	1038	100.0

Leadership Trainings of CALS Students	n	%
None	490	46.8
1-2 trainings	390	37.2
3-4 trainings	117	11.3
5-6 trainings	49	4.7
Total	1046	100.0

Table 4-8. Organizational Memberships within CALS

Organizations in CALS	Member	President	Vice			Treasurer	Membership Coordinator	Committee		N	%
			President	Secretary				Chair	Other		
Alpha Zeta	26	2	2	1	0	1	9	12	53	8.0	
American Society of Agricultural Engineers	3	0	0	0	1	0	0	0	4	.6	
Block & Bridle	12	1	0	0	0	1	1	1	16	2.4	
CALS Ambassadors	42	0	0	0	0	0	1	0	43	6.5	
CALS Student Council	8	1	0	1	1	0	2	2	15	2.3	
Dairy Science Club	8	1	0	0	0	0	0	0	9	1.3	
ENSO (Urban Ent. & Nematology Student Org.)	4	0	0	0	0	0	0	0	4	.6	
Environmental Horticulture Club	7	0	0	2	0	0	0	2	11	1.7	
Equestrian	13	1	2	2	0	0	0	5	23	3.5	
Ethnoecology Society	1	0	0	0	0	0	0	1	2	.3	
Family, Youth & Community Sciences Club	41	2	1	1	0	0	4	6	55	8.3	
Florida Water Environment Assoc.	0	0	0	0	0	0	0	0	0	0	
Food Sciences & Human Nutrition Club	30	0	2	1	2	0	0	2	37	5.5	
Forestry Club	12	1	2	0	0	0	0	1	16	2.4	
FRE-NAMA	23	2	5	3	0	0	5	3	41	6.1	
Gator Ch. of the Florida Assn. for Food Protect.	0	0	0	0	0	0	0	0	0	0	
Gator Citrus Club	1	0	0	0	0	0	0	0	1	.1	
Gator Collegiate Cattlewomen Assoc.	6	1	0	1	2	0	2	0	12	1.8	
International Gourmet Association	0	0	0	0	0	0	0	0	0	0	
Microbiology & Cell Science Student Org.	10	0	0	0	0	0	0	1	11	1.7	
MANRRS	6	0	2	0	0	0	0	0	8	1.2	

Table 4-8. Continued

Organizations in CALS	Member	President	Vice			Membership Coordinator	Committee		N	%
			President	Secretary	Treasurer		Chair	Other		
Marsport Greenhouse Project	0	0	0	0	0	0	0	0	0	0
Natural Resource & Environmental Coll. Council	4	1	0	0	0	0	0	0	5	.8
Pre-Vet Club	81	0	0	0	2	1	1	8	93	14.0
School of Forest Res. & Cons.										
Student Council	4	0	0	0	0	0	0	0	4	.6
Sigma Phi Alpha	3	1	1	1	0	0	0	1	7	1.1
Society of American Foresters	6	1	0	0	0	0	0	0	7	1.1
St. Ch. of the American Assn. of Bovine Pract.	0	0	0	0	0	0	0	0	0	0
The Investigators	1	0	0	0	0	0	0	1	2	.2
Urban Entomological Society	4	0	0	1	0	0	0	0	5	.7
Wetlands Club	3	0	0	0	0	0	0	0	3	.4
Wildlife Society	29	2	0	0	0	0	1	1	33	5.0
Other	76	8	9	6	6	3	21	17	146	21.9
Total	464	25	26	20	14	6	47	64	666	100.0

Table 4-9. Membership/Leadership Level within CALS Organizations

Membership/Leadership Level Answer Options	Chapter	District	State	Regional	National	n	%
Alpha Zeta	45	0	1	0	2	48	9.3
American Society of Agricultural Engineers	3	0	0	0	0	3	.5
Block & Bridle	12	0	0	0	1	13	2.5
CALS Ambassadors	31	0	3	0	0	34	6.6
CALS Student Council	9	0	0	0	0	9	1.7
Dairy Science Club	6	0	0	0	2	8	1.2
ENSO (Urban Ent. & Nematology Student Org.)	3	0	0	0	0	3	.5
Environmental Horticulture Club	9	0	0	0	0	9	1.7
Equestrian	14	0	0	1	1	16	3.1
Ethnoecology Society	1	0	0	0	0	1	.1
Family, Youth & Community Sciences Club	41	0	0	0	0	41	8.0
Florida Water Environment Assoc. St. Ch.	0	0	0	0	0	0	0
Food Sciences & Human Nutrition Club	26	0	3	0	1	30	5.8
Forestry Club	10	0	0	0	0	10	1.9
FRE-NAMA	33	0	0	0	4	37	7.2
Gator Ch. of the Florida Assn. for Food Pct	0	0	0	0	0	0	0
Gator Citrus Club	1	0	0	0	0	1	.1
Gator Collegiate Cattlewomen	7	0	2	0	0	9	1.7
International Gourmet Association	0	0	0	0	0	0	0
Microbiology & Cell Science Student Org.	8	0	0	0	0	8	1.2
MANRRS	7	0	0	0	1	8	1.2
Marsport Greenhouse Project	0	0	0	0	0	0	0
Natural Resource & Environmental Coll. Council	4	0	0	0	0	4	.7
Pre-Vet Club	71	1	0	0	1	73	14.1
School of Forest Res. & Cons. Student Council	3	0	0	0	0	3	.5
Sigma Phi Alpha	6	0	0	0	1	7	1.3
Society of American Foresters Student Chapter	3	0	0	0	2	5	.9
St. Ch. of the American Assn. of Bovine	0	0	0	0	0	0	0
The Investigators	0	0	0	0	0	0	0
Urban Entomological Society	4	0	0	0	0	4	.7
Wetlands Club	2	0	0	0	0	2	.3
Wildlife Society	28	0	1	0	2	31	6
Other	100	2	6	4	11	98	19.0
Total	487	3	16	5	29	515	100

Table 4-10. Number of Years in CALS Organizations

Organization Name	Years					Total
	0	1	2	3	4	
Alpha Zeta	14	27	7	1	4	53
American Society of Agricultural Engineers	0	1	1	1	1	4
Block & Bridle	4	8	3	3	0	18
CALS Ambassadors	12	21	9	2	0	44
CALS Student Council	1	6	2	7	0	16
Dairy Science Club	1	8	1	0	0	10
ENSO (Urban Ent. & Nematology Std.Org.)	0	4	1	0	0	5
Environmental Horticulture Club	2	5	3	1	0	11
Equestrian	2	16	3	3	1	25
Ethnoecology Society	0	0	0	0	0	0
Family, Youth & Community Sciences Club	27	23	2	2	0	54
Florida Water Environment Assoc. St. Ch.	0	0	0	0	0	0
Food Sciences & Human Nutrition Club	5	15	12	5	0	37
Forestry Club	3	6	4	1	1	15
FRE-NAMA	6	19	12	3	1	41
Gator Ch. of the Florida Assn. for Food	0	0	0	0	0	0
Gator Citrus Club	0	1	0	0	0	1
Gator Collegiate Cattlewomen	4	2	3	3	0	12
International Gourmet Association	0	0	0	0	0	0
Microbiology & Cell Science Student Org.	0	5	4	0	0	9
MANRRS	1	3	3	0	1	8
Marsport Greenhouse Project	0	0	0	0	0	0
Natural Resource & Environmental Coll.	0	2	1	2	0	5
Pre-Vet Club	12	39	24	11	6	92
School of Forest Res. & Cons. Student Con.	0	2	2	0	0	4

Table 4-10. Continued

Organization Name	Years					Total
	0	1	2	3	4	
Sigma Phi Alpha	0	2	1	4	0	7
Society of American Foresters Student	1	2	3	0	0	6
St. Ch. of the American Assn. of Bovine	0	0	0	0	0	0
The Investigators	0	1	1	0	0	2
Urban Entomological Society	1	2	1	0	0	4
Wetlands Club	0	2	0	0	0	2
Wildlife Society	6	11	13	2	1	33
Other	14	68	32	14	11	111
Total	116	301	148	65	27	657

Table 4-11. Organizational Leadership Outside of CALS

Organizational leadership outside of CALS (n=826)	Service	Social	Social/ Service	Fraternity	Sorority	Honorary	Sports	Other	%
UF- Organization One	13.4	5.8	10.6	3.8	7.9	5.0	5.4	7.6	59.7
UF- Organization Two	7.6	3.6	4.7	.8	1.3	2.6	2.4	4.1	27.4
UF- Organization Three	2.3	1.1	1.8	.1	.3	1.8	.8	2.8	10.5
UF- Organization Four	.7	.1	.2	.1	.1	.2	.1	.2	1.9
UF- Organization Five	.1	0	.1	0	0	.1	.1	0	.5
Total	24.3	10.6	17.5	4.8	9.4	9.7	8.8	14.7	100.0

Table 4-12. Current Organizational Leadership Level and Duration of Involvement

Leadership Position Outside of CALS										
	President	Vice-President	Secretary	Treasurer	Membership Coordinator	Committee Chair	n	%		
UF- Organization One	23	23	7	11	17	64	202	347	62.1	
UF- Organization Two	5	3	6	5	7	30	86	142	25.4	
UF- Organization Three	1	6	3	2	1	7	34	54	9.6	
UF- Organization Four	2	0	0	0	1	1	8	12	2.1	
UF- Organization Five	0	1	0	0	0	0	2	3	0.5	
Total	31	33	16	18	26	102	334	558	100.0	
Level of Involvement										
	Chapter	District	State	Regional	National			n	%	
UF- Organization One	329	7	5	7	26			374	56.1	
UF- Organization Two	147	3	4	1	8			163	24.4	
UF- Organization Three	54	1	2	0	5			62	9.3	
UF- Organization Four	12	0	1	0	1			14	2.1	
UF- Organization Five	3	0	0	0	0			3	0.4	
Total	545	11	12	8	40			616		
Number of Years of Involvement										
	Years								n	%
	0	1	2	3	4	5	6			
UF- Organization One	54	195	108	53	28	2	2	442	57.0	
UF- Organization Two	22	72	59	23	14	0	0	190	24.5	
UF- Organization Three	8	31	24	8	2	0	0	73	9.4	
UF- Organization Four	1	6	4	4	1	0	0	16	2.0	
UF- Organization Five	0	2	1	0	1	0	0	4	.05	
Total	545	11	12	8	40			725		

Table 4-13. High School Leadership Experiences of CALS Students

Previous Leadership Experience (n=987)	n	%
Student Government	278	28.2
BETA	165	16.7
SADD	77	7.8
FCA	149	15.1
JROTC	34	3.4
Class Officer	193	19.6
FBLA	70	7.1
Science Club	192	19.5
Band	157	15.9
Foreign Language Club	291	29.5
Baseball/Softball	119	12.1
Debate Team	54	5.5
Swimming/Diving	94	9.5
Pre-Health	89	9.0
Basketball	91	9.2
Boy Scouts/Girl Scouts	81	8.2
Football	86	8.7
National Honor Society	600	60.8
Volleyball	80	8.1
4-H member	63	6.4
Cross-Country/Track	168	17.0
Future Farmers of America (FFA)	114	11.6
Other Athletics	378	38.3
Other (please specify)	459	46.5

Table 4-14. High School Leadership Positions and Level Experiences

Previous Officer Positions	n	%
President	304	25.3%
Vice-President	258	21.5%
Secretary	212	17.6%
Treasurer	173	14.4%
Membership Coordinator	58	4.8%
Committee Chair	195	16.3%
Total	1200	100.0%

Leadership Level	n	%
None	99	12.0%
Club	647	73.1%
State	48	5.4%
District	64	7.2%
Region	16	1.8%
National	10	1.1%
Total	884	100.0%

Table 4-15. Frequency of CALS Students who participate in Community Leadership Experiences

Frequency of Service	High School		College	
Once a year	54	5.6%	85	8.5%
Once six months	167	17.3%	164	16.5%
Once a month	335	34.7%	234	23.5%
Once every week	348	36.1%	192	19.3%
Daily	61	6.3%	23	2.3%
Total	965	100.0%	698	100.0%

Table 4-16. Pearson Product Moment Correlations of Leadership Measures by Personal Characteristics

Variable	Leadership	Model	Inspire	Challenge	Enable	Encourage
AGE	.02	.01	-.01	.02	.01	-.02
GENDER	.10*	.11*	.06*	.04	.14*	.14*
WHITE	-.06*	-.01	-.07	-.01	-.08*	-.07*
OTHER	.01	.03	.01	.00	.01	.01
HISPANIC	.07*	.04*	.09*	.06	.06	.08*
BLACK	-.01	-.04	.00	-.05	.04	.01
LIVING ENVIRONMENT	.01	-.01	.00	.00	.06	.00
FAMILY	.01	.00	.01	.01	.03	.01
First Generation (first in family attend college)	-.02	-.01	-.04	-.03	-.01	.003
G.P.A. (grade point average)	-.02	-.05	-.03	-.03	-.02	-.02
Enrollment (Freshmen in CALS, Other College, or Community College)	.03	.03	.03	.03	.01	.02

Note * $p \leq .05$

Table 4-17. Regression models of Leadership Behaviors on personal characteristics

Personal Characteristics Source	Leadership		Model		Inspire		Challenge		Enable		Encourage	
	Est.	a	Est.	a	Est.	a	Est.	a	Est.	a	Est.	a
(Constant)	7.62		7.72		7.45		7.56		7.72		7.68	
Age	.02	.51	.04	.19	-.03	.35	.02	.36	.05	.05	.01	.78
Gender	.26*	.00	.31*	.00	.20	.06	.12	.19	.34	.00	.39*	.00
Other (Asian American, Indian, Pacific Islander, Other)	-.02	.47	.17	.34	.10	.63	.03	.84	.15	.33	.14	.46
Hispanic	.11*	.01	.17	.18	.46*	.00	.22	.11	.22*	.04	.37*	.00
Black	.03	.83	-.10	.45	.07	.66	-.15	.32	.18	.12	.14	.33
Living Community (Rural, Suburban, Urban)	-.01	.92	-.002	1.00	-.04	.57	-.003	.98	.06	.18	-.04	.43
Family Community (Single, both, extended parents)	.03	.73	.01	.85	.01	.89	.01	.87	.05	.41	.03	.71
First Generation (first in family attend college)	-.04	.69	-.01	.90	-.11	.33	-.09	.38	.01	.85	.02	.78
G.P.A. (Grade point ave.)	-.03	.48	-.06	.13	.04	.40	-.03	.36	-.04	.20	-.03	.44
Enrollment (Freshmen in CALS, Other College, or Community College)	.03	.52	.03	.59	.07	.27	.01	.73	-.01	.90	.05	.39
Adjusted R2	.01		.01		.01		.004		.02		.02	
F-Statistic	1.82	.05	1.99	.03	1.62	.09	.90	.05	3.21	.00	2.64	.00

Note1 * $p \leq .05$

Note2 Leadership is the grand mean leadership score

Table 4-18. Pearson Product Moment Correlations of Leadership Measures by Academic Leadership Experiences (n=1,036)

Variable	Leadership	Model	Inspire	Challenge	Enable	Encourage
Leadership course	.03	.02	.04	.02	.03	.00
Leadership Trainings	-.01	-.01	-.01	-.02	-.01	-.21
Academic Year	.03	.05	.02	.04	.04	.01

Note * $p \leq .05$

Table 4-19. Regression models of Leadership Behaviors on Academic Leadership Experiences

Academic Leadership Experiences Source	Leadership		Model		Inspire		Challenge		Enable		Encourage	
	Est.	a	Est.	a	Est.	a	Est.	a	Est.	a	Est.	a
(Constant)	7.47		7.51		6.62		7.45		7.96		7.69	
Leadership course	.09	.49	.07	.59	.20	.25	.03	.84	.12	.32	.03	.82
Leadership trainings	.36	.48	.38	.47	.66	.32	.02	.96	.38	.42	.34	.55
Academic year	.03	.40	.04	.19	-.01	.91	.06	.19	.04	.21	.01	.87
Adjusted R2	.001		.002		.001		.000		.002		.002	
F-Statistic	1.38	.23	.75	.58	.79	.56	.93	.46	.37	.87	.15	.92

Note * $p \leq .05$

Table 4-20. Pearson Product Moment Correlations Leadership Measures on Community Leadership Experiences (n=1,084)

Variable	Leadership	Model	Inspire	Challenge	Enable	Encourage
Had a Role Model	.01	-.02	.02	-.02	-.01	-.01
HS Community Service	.09*	.12*	.08*	.07*	.09*	.09*
HS Community Participation Frequency	.09	.08*	.07*	.10*	.07*	.06
Current Community Service	.19*	.19*	.21*	.19**	.17*	.16*
Current Service Participation Frequency	.16*	.10*	.09*	.11*	.13*	.09*

Note * $p \leq .05$

Table 4-21. Regression of Leadership Measures on Community Leadership Experiences

Academic Leadership Experiences Source	Leadership		Model		Inspire		Challenge		Enable		Encourage	
	Est.	a	Est.	a	Est.	a	Est.	a	Est.	a	Est.	a
(Constant)	7.66		7.88		7.04		7.28		7.96		7.84	
Had a Role Model	-.11	.22	-.19	.24	-.12	.33	-.09	.43	.12	.32	-.13	.22
High school community service	.10	.54	.20	.25	.03	.88	.04	.85	.38	.42	.14	.46
HS Community Participation Frequency	.01	.95	-.07	.62	.08	.68	.08	.66	.04	.21	.01	.94
Current Community Service	.44*	.00	.42*	.001	.37*	.02	.41*	.01	.41*	.003	.44*	.002
Current Service Participation Frequency	-.01	.95	-.02	.87	.27	.12	.08	.59	.07	.58	-.08	.57
Adjusted R2	.03		.03		.04		.03		.02		.02	
F-Statistic	9.19		.00		7.96		.00		10.24		.00	
	8.24		.00		5.87		.00		5.85		.00	

Note * $p \leq .05$

Table 4-22. Pearson Product Moment Correlations of Leadership Measures by Organizational Leadership Experiences (n=1,025)

Variable	Leadership	Model	Inspire	Challenge	Enable	Encourage
UFLEADER	.08	.08	.11	.09	.05	.05
UFORG	.09*	.07*	.11	.09	.06	.06*
CALSLEADER	.04	.03	.05	.04	.03	.04
PRIOR OFFICER	.16*	.15*	.14*	.16*	.13*	.13*

Note * $p \leq .05$

Table 4-23. Regression of Leadership Measures on Organizational Leadership Experiences

Organizational Leadership Experiences Source	Leadership		Model		Inspire		Challenge		Enable		Encourage	
	Est.	a	Est.	a	Est.	a	Est.	a	Est.	a	Est.	a
(Constant)	7.73		7.91		7.19		7.36		8.28		7.90	
UFLEADER	.01	.92	.11	.37	.12	.41	.07	.58	.01	.96	.01	.93
UFORG	.007	.97	.05	.63	.22	.11	.16	.18	.09	.32	.13	.26
CALSLEADER	.20	.28	.0004	.32	.0006	.09	.0005	.22	.0002	.43	.0002	.25
PRIOR OFFICER	.24*	.00	.24*	.00	.22*	.02	.32*	.00	.20*	.00	.24*	.00
Adjusted R2	.02		.01		.02		.02		.01		.01	
F-Statistic	4.65	.001	4.30	.001	5.39	.001	6.46	.001	2.78	.02	3.10	.009

Note * $p \leq .05$

Table 4-24. Regression of Overall Leadership

Leadership Source	Full Model		Reduced Model	
	Est.	a	Est.	a
(Constant)	6.30		7.46	
Age	.03	.43		
Gender	.17*	.05	.18	.03
Living Environment	.01	.74		
First Generation	-.04	.62		
Other Race	.15	.38		
Hispanic	.28*	.02	.29	.01
Black	-.03	.82		
Year in College	-.02	.69		
UF GPA	-.01	.85		
Enrollment	.06	.18		
Leadership Course	.09	.50		
Leader Trainings	.70	.28		
Prior Officer	.004*	.01	.002	.00
UF Organization Member	.03	.80		
UF Leader	.05	.65		
CALS Leader	.06	.28		
HS Community Service	.27	.15		
HS Community Participation Frequency	.04	.78		
Current Community Service	.48*	.00	.45	.00
Current Service Participation Frequency	.08	.54		
Had a Role Model	.002	.99		
R2	.07		.06	
Adjusted R2	.06		.06	
F-Statistic	3.87	.00	16.34	.00

Note * $p \leq .05$

Table 4-25. Regression of Modeling the Way

Modeling the Way Source	Full Model		Reduced Model	
	Est.	a	Est.	a
(Constant)	6.32		7.46	
Age	.06	.43		
Gender	.20*	.05	.18*	.03
Living Environment	.003	.74		
First Generation	-.02	.62		
Other Race	.17	.38		
Hispanic	.17*	.02	.29*	.01
Black	-.17	.82		
Year in College	-.01	.69		
UF GPA	-.03	.85		
Enrollment	.10	.18		
Leadership Course	.75	.50		
Leader Trainings	.004	.28		
Prior Officer	.05*	.01	.002*	.00
UF Organization Member	.12	.80		
UF Leader	.45	.65		
CALS Leader	-.02	.28		
HS Community Service	.06	.15		
HS Community Participation Frequency	.44	.78		
Current Community Service	.39*	.00	.45*	.00
Current Service Participation Frequency	.14	.64		
Had a Role Model	-.002	.99		
R2	.06		.06	
Adjusted R2	.05		.06	
F-Statistic	6.32	.00	16.34	.00

Note * $p \leq .05$

Table 4-26. Regression of Leadership Measures on Inspire a Shared Vision

Inspire a Shared Vision Source	Full Model		Reduced Model	
	Est.	a	Est.	a
(Constant)	5.66		6.99	
Age	-.03	.55		
Gender	.06	.08		
Living Environment	-.01	.93		
First Generation	-.11	.32		
Other Race	.14	.52		
Hispanic	.44*	.01	.46*	.00
Black	-.01	.96		
Year in College	-.02	.79		
UF GPA	.07	.17		
Enrollment	.08	.19		
Leadership Course	.22	.22		
Leader Trainings	1.13	.18		
Prior Officer	.003*	.01	.003*	.01
UF Organization Member	.07	.65		
UF Leader	.07	.69		
CALS Leader	.001	.07		
HS Community Service	.15	.87		
HS Community Participation Frequency	.03	.88		
Current Community Service	.46*	.03	.60*	.00
Current Service Participation Frequency	.13	.68		
Had a Role Model	-.05	.75		
R2	.07		.06	
Adjusted R2	.06		.06	
F Statistic	3.86	.00	20.10	.00

Note * $p \leq .05$

Table 4-27. Regression of Leadership Measures on Challenge the Process

Challenge the Process Source	Full Model		Reduced Model	
	Est.	a	Est.	a
(Constant)	5.66		7.29	
Age	.03	.55		
Gender	.05	.07		
Living Environment	-.01	.93		
First Generation	-.11	.32		
Other Race	.14	.52		
Hispanic	.44*	.05	.34*	.03
Black	-.01	.96		
Year in College	-.02	.79		
UF GPA	.07	.17		
Enrollment	.10	.09		
Leadership Course	.22	.22		
Leader Trainings	1.13	.18		
Prior Officer	.003*	.01	.002*	.00
UF Organization Member	.07	.65		
UF Leader	.06	.71		
CALS Leader	.001	.18		
HS Community Service	.15	.87		
HS Community Participation Frequency	.03	.54		
Current Community Service	.40*	.01	.46*	.00
Current Service Participation Frequency	.15	.71		
Had a Role Model	-.05	.75		
R2	.07		.04	
Adjusted R2	.06		.04	
F Statistic	2.86	.00	23.59	.00

Note * $p \leq .05$

Table 4-28. Regression of Leadership Measures on Enable Others to Act

Enable Others to Act Source	Full Model		Reduced Model	
	Est.	a	Est.	a
(Constant)	6.69		8.02	
Age	.06	.08		
Gender	.27*	.00	.28*	.00
Living Environment	.08	.10		
First Generation	-.001	.97		
Other Race	.17	.25		
Hispanic	.23*	.03	.21*	.00
Black	.13	.26		
Year in College	-.02	.63		
UF GPA	-.02	.50		
Enrollment	.02	.55		
Leadership Course	.06	.58		
Leader Trainings	.53	.37		
Prior Officer	.002*	.13	.003*	.00
UF Organization Member	.05	.59		
UF Leader	.06	.96		
CALS Leader	.009	.41		
HS Community Service	.29	.08		
HS Community Participation Frequency	.01	.89		
Current Community Service	.55*	.00	.50*	.00
Current Service Participation Frequency	.03	.25		
Had a Role Model	.09	.34		
R2	.08		.05	
Adjusted R2	.06		.05	
F-Statistic	3.76	.00	13.75	.00

Note * $p \leq .05$

Table 4-29. Regression of Leadership Measures Encourage the Heart

Encourage the Heart Source	Full Model		Reduced Model	
	Est.	a	Est.	a
(Constant)	6.33		7.53	
Age	.01	.41		
Gender	.29*	.00	.31*	.00
Living Environment	-.02	.64		
First Generation	.01	.88		
Other Race	.16	.38		
Hispanic	.37*	.00	.35*	.00
Black	.11	.46		
Year in College	-.04	.45		
UF GPA	-.01	.69		
Enrollment	.08	.13		
Leadership Course	.02	.90		
Leader Trainings	.77	.29		
Prior Officer	.003*	.01	.003*	.01
UF Organization Member	-.00	.97		
UF Leader	.04	.73		
CALS Leader	.33	.11		
HS Community Service	.04	.81		
HS Community Participation Frequency	.01	.43		
Current Community Service	.47*	.00	.38*	.00
Current Service Participation Frequency	.01	.96		
Had a Role Model	.002	.99		
R2	.07		.06	
Adjusted R2	.05		.05	
F-Statistic	3.24	.00	13.92	.00

Note * $p \leq .05$

CHAPTER 5 DISCUSSION

Summary of Study

Statement of the Problem

Throughout the United States and the rest of the world, businesses and government organizations are finding it difficult to fill leadership positions due to a lack of trained leaders. This situation has been described as a “leadership void”; more accurately termed as a void in properly trained leaders (Bisoux, 2002; Burns, 1979; Figura, 1999). Industry leaders seek new employees who can lead quickly after they join an organization. College graduates who can exhibit leadership and life skills early and often as new professionals are likely to be hired and advance quickly in their careers. One goal of higher education is to prepare graduates for the professional world, yet few formal training opportunities are offered to assist students in developing skills in personal leadership, organizational leadership, or community leadership (Cress, et al., 2001; Ricketts & Rudd, 2001; Schumacher & Swan, 1993).

A primary goal for leadership educators is to improve undergraduate students’ leadership development to fill this leadership void. Several important questions are: Do potential graduates possess desired leadership behaviors? If not, what are the leadership behaviors that future graduates possess? What previous leadership experiences of CALS students are associated with personal development? What type of leadership education or leadership trainings have these undergraduate students completed? What type of leadership experiences are they currently participating in to develop desired leadership behaviors?

With an ex post facto study, it was not possible to directly measure change and answer all of these questions. However, these inquiries lead to an important research questions: (a) What

factors influence leadership behaviors in CALS students? (b) What leadership behaviors do CALS students exhibit the most?

Purpose and Objectives

The purpose of this study was to examine CALS students' past and present leadership experiences and personal characteristics as predictors for leadership behavior. The leadership behaviors of undergraduate CALS students were defined by the Student Leadership Practices Inventory (LPI) (Kouzes & Posner, 1998). The LPI can be used to determine the self-perceived level of leadership behaviors. The objectives of this study were as follows:

1. To determine self-perceived leadership behaviors of CALS students, as measured by the Student LPI (Kouzes & Posner, 1998)
2. To assess the influence demographic characteristics on leadership behaviors
3. To assess the influence of community leadership experiences of undergraduate CALS student leaders on leadership behaviors
4. To assess the influence that organizational leadership experiences (at the departmental, university, and community levels) have on leadership behaviors
5. To determine the relationship between undergraduate CALS student leadership behavior and previous organizational and community experiences.

Methodology

The leadership theory framework for this study began with the leadership behaviors research of Kouzes and Posner (1995). A quantitative descriptive design was used to describe CALS students in terms of their personal characteristics, academic leadership experience, student leadership experience, and community leadership experience. All of the participants completed an online survey that assessed their self-perceived leadership practices. The LPI developed by Kouzes and Posner (1998) measured the participants' perceived importance of and proficiency in five leadership behaviors: *Challenging the Process*, *Enabling Others to Act*, *Inspiring a Shared Vision*, *Encouraging the Heart*, and *Modeling the Way*.

The survey techniques applied in this study closely followed Dillman's (2000) *Tailored Design Method* for web-mail surveys. The procedures yielded an overall survey response rate of 33.7%, representing 1,156 of the total population of 3,429. Procedures for data analysis included descriptive statistics, correlational analysis, and multivariate regression. The first four regression models for leadership explained the significance of independent variables on subsets areas of personal characteristics, academic leadership experience, organizational leadership experience, and community leadership experience on the dependent variables of the five leadership behavior and overall measure variable of Leadership Behavior. Other models investigated only selected personal characteristics, academic leadership experiences, and organizational leadership experiences offering a comparison with variables that were predicted to have influence on the set of leadership measures.

Findings

A summary of the findings of this study were presented in relation to the objectives of the study. These findings were also presented in Chapter 4.

Findings 1: Leadership behaviors of CALS students as measured by the Student LPI (Kouzes & Posner, 1998)

In summary, the individual behavior mean scores ranged from (7.44 to 8.50) with an overall grand mean score of 7.90. The leadership behavior of "*Enabling Others to Act*" had the highest individual mean score high score ($M = 8.50$), whereas the lowest individual mean score was $M = 7.44$ for the leadership behavior of *Inspiring a Shared Vision*. Overall Leadership behavior and the five leadership behaviors have high mean scores. CALS students had moderately to high leadership behavior scores with an overall response on the rating scale as "often". The results on the five leadership behaviors rating indicated CALS students were more

likely to Encourage the Heart, Enable others to Act, and Modeling the Way more frequently than other leadership behaviors such as Inspire a Shared Vision and Challenge the Process.

Using regression models for explaining overall leadership behavior, the researcher found that the full model accounted for 7% of the total variance in the dependent variable. The variables Current Community Service, Hispanic students and Prior Officer (if the student had been an officer of a high school organization) remained statistically significant throughout all six models including the reduced model. The variable Gender had a weak positive relationship with overall leadership behavior, and was significant in all of the models except Inspire a Shared Vision and Challenge the Process.

Findings 2: Demographic characteristics variables of current CALS students and their influence on leadership

As reported in Chapter 4, the profile of the typical CALS undergraduate student was a single White female, about 21 years old, who lives in a suburban environment with both parents. The majority of the respondents were upperclassmen (junior and senior status), with over 60% having a grade point average of 3.26 or greater. Food Science and Human Nutrition, Animal Sciences, and Family, Youth, and Community Science majors were the most common majors. One-third of the respondents entered college as freshmen and other-third entered the college as a transfer student from a community college. Over ninety percent indicated that they had not completed a formal leadership course, while over fifty percent had participated in some leadership training activity. Overall CALS students were active in regards to organizational leadership with over half are involved in CALS student organization and more than 60% are involved in a student organization outside of CALS.

Among the personal characteristics variables, the researcher found weak to moderate relationships for of the independent variables Gender and Hispanic. Gender had weak positive

correlation indicating that females have a higher leadership behavior score than men. The variable representing Hispanic (Hispanic/ Latino American) had a weak positive relationship for dependent variable Leadership behavior indicating Hispanic CALS students may score higher on leadership behavior than students who are not Hispanic. In the multiple regression model, the researcher noted that variable Gender continued to have a positive parameter estimate that was significant for dependent variable of Leadership behavior. In addition, the variable Hispanic had a positive parameter estimate that was significant. Overall personal characteristics had a weak relationship and statistically no significance while accounting for 1% of the variance in the model for the dependent variable of Leadership behavior.

When exploring the academic leadership experiences variables, the researcher found weak relationships for all of the independent variables in the academic leadership model. In the regression models the researcher notes that academic leadership experiences had no significant variables and were not statistically significance while accounting for less than 1% of the variance in the model for the dependent variable of Leadership behavior.

Findings 3: The influence of community leadership experiences of undergraduate CALS student leaders on leadership behaviors

Respondents participated in community service with 82.2 % of participants responded “yes” that they participated in some type of community service activity in high school. In addition, 51.9% said yes that they currently participated in some type of community service or community outreach activity. On average, respondents participate in community service at least one month and performed an average of one hour per service activity.

Among the community leadership experiences variables, the researcher found weak to moderate relationships for all the independent variables in the community leadership model for the dependent variables of leadership. In this regression model, the researcher noted that being

currently involved in community service had a significant positive parameter estimate. Overall, the variables for community leadership experience had weak relationships and accounted for 3 % of the variance in the model for the dependent variable of Leadership behavior.

Findings 4: The influence of organizational leadership experiences (at the departmental, university, and community levels) on leadership behaviors

About 50% students indicated that they have participated in some organizational leadership experience both in and outside the college. CALS organizations that students participate in the most were Pre-Vet Club, Family, Youth & Community Sciences Club, and Alpha Zeta (Agricultural Honor Fraternity). Respondents participated in variety of service related activities where over 20% were members of service organizations, 16.7% were involved in social/service organizations, and 12% were members of a fraternity or sorority.

Being a member of a CALS organization was found to have a weak to moderate positive correlation and had a positive, significant parameter estimate for the variable of Leadership behavior. The current student leadership participation and the level that CALS students are participating (chapter, regional, state, national) levels were also positively associated with higher LPI scores for overall Leadership behavior. The regression model had a weak but statistically significant relationship and explained about 2% of the variance reported in Leadership behavior.

Findings 5: The relationship between undergraduate CALS student leadership behavior and previous high school experiences

Participants were involved in over more than 26 high school activities, ranging from athletics and academics to community service and honorary clubs and organizations. More than 60% of CALS students had participated in the National Honor Society. In addition to their participation, CALS students served in leadership positions with these organizations. Over 50% of CALS students were officers and involved levels primarily the local or club level.

Having been an officer of an organization in high school has showed a low positive relationship with Leadership behavior. It had a statistically significance relationship ($\beta = .03$, $p = .04$). In this regression model, the researcher notes that the variable Prior Officer was statically significant and the overall model also was statically significant. The model statistically showed significance with reporting less than 1% of the variance in the full model for the dependent variable of Leadership behavior.

Conclusions and Discussion

Being that this study was a census of CALS students at the University of Florida enrolled in Fall 2007 semester, the generalizability of the conclusions and recommendations of the study beyond the population described should be carefully considered. With this point in mind, the following conclusions were derived from the findings of the five research objectives and previous research studies. Each conclusion is listed as a bold paragraph heading and is followed by a brief discussion of the conclusion.

CALS students held moderate to high leadership perceptions among all on areas of the five leadership practices.

Overall the research suggests that students in the College of Agriculture and Life Sciences (CALS) at the University of Florida in this study appear to possess strong leadership behaviors. In assessing leadership behavior, participants completed the individual (Self) leader component portion of the LPI, which was used to assess the self-perceptions of the participants' own actions within the five exemplary leadership behaviors. CALS students held moderate to high leadership perceptions among all on areas of the five leadership practices. These perceptions remain consistent with the findings of Bass and Yammarino (1989) and Krill, Carter and Williams (1997) who found that leaders tend to give themselves moderate to high ratings on their individual leadership behaviors. Research using the LPI has also found formal leadership

education to be effective (Earnest, 1996; Meehan, 1999; Mullins & Weeks, 2006; J. C. Ricketts & Rudd, 2002). Earnest (1996) found increases for each of the five leadership behaviors of community leadership program participants in Ohio.

Researchers in agricultural and extension education have also utilized the LPI to evaluate leadership behaviors as well (Rudd, 2000; Krill, Carter, & Williams 1997). Spotauski and Carter (1993) found that agricultural education executives were best at *Enabling Others to Act* and needed help with *Inspiring a Shared Vision* and *Challenging the process*. Woodrum and Safrit (2003) examined the leadership practices of West Virginia extension agents and determined again that *Enabling Others to Act* was the behavior exhibited most frequently, and *Inspiring a Shared Vision* was the leadership behavior used less often.

In this study, the leadership behavior of “Enabling others to act” had the highest individual mean score high score ($M = 8.50$) whereas the lowest individual mean score was ($M = 7.44$) for the leadership behavior of Inspiring a Shared Vision. The results indicate having a shared vision is not a leadership behavior that CALS students rate themselves as being strong. In comparison to the previous studies, respondents in this study rated themselves more involved with the group process, and less involved with developing the group’s vision (Krill, Carter, & Williams, 1997; Mullins & Weeks, 2006; Rudd, et al., 2004; Schumacher & Swan, 1993). *Inspiring a Shared Vision* was also rated as one of the lowest among undergraduate students. The researcher concluded respondents were less likely to develop and share a strong common vision. The findings of this study were consistent with previous leadership research, which was conducted within the five leadership practices with undergraduate college students using the LPI (Krill & Carter, 1997, Kouzes & Posner, 1998 Mullins & Weeks, 2006, Ricketts, 2007).

Characteristics Affect Leadership Behaviors

The characteristics make-up of respondents was a necessary component of this study because current literature indicates characteristics influence on leadership behavior (Carless, 1998, Moore, 2003; Rosener, 2000; Rudd, 2000; Krishnan & Park, 1998; Kochamba and Murray, 1996, Kouzes & Posner, 1993; Bass, 1990). This study found evidence for a change in the gender distribution for CALS, where traditionally men have been the majority and women minority. Currently, in the college, men have a proportionally smaller population of the participants sampled at 41.5%, while women have 58.5% of the sampled population at the University of Florida. Carter and Rudd (2005) recognized that there was a trend toward increased female leadership in agricultural organizations and perhaps this change was a direct result of increased number of women in enrolled in the college and pursuing more professional development opportunities. This national trend is to be considered as the changing the profile of undergraduate students in the college of agricultural and life sciences (Howell, et al., 1982; Israel & Beaulieu, 1990; Stedman, 2004). In this study, Gender was also reported to have a weak positive significant correlation with overall leadership and five leadership behaviors. The results of this study reported that the variable Gender showed weak significant relationships for significant in four of the six measures (except Inspire a Shared Vision and Challenge the Process). Thus females were likely to have higher leadership behavior scores than males. Other studies of leadership, which explored gender as a variable report similar results whereas there is evidence of higher scores for women on leadership behaviors than men (Carter, 2006; Stedman, 2004).

Along with a change in gender, there is a more evidence for more diversity of races and ethnicities. Being Hispanic or Latino was shown to have a weak positive correlation and association in the regression model with Leadership behaviors. The significance of this variable

would indicate some effect that is happening with Hispanic and Leadership behavior. Further research that should be conducted on the Hispanic CALS students and their leadership behaviors.

Previous research indicated characteristics variables, such as an individual's age and living community, may also influence an individual's leadership behavior (Brannon, Holley, & Key, 1989; Kelly & Osborne, 2004; Luft, 1996). In additionally variables of academic classification, academic major, family college experience, leadership education, as well as number and types of leadership experiences, have all been factors that may influence leadership behaviors (Flora & Flora, 2003; Rudd, et al., 2004). The results of the study do not support previous studies were variables such as age, academic classification, leadership education, types of leadership experiences have influenced an individual's leadership behavior. The study reported that these variables had little or no correlation and were not significant and, consequently, were not used in the regression models. The lack of association may be due to the population where the participants in the study were more similar in academic and personal demographics than previous studies.

When a CALS student first enrolled in college, which compares traditional four-year students with community college transfer students, has been identified as a predictor that may influence the leadership behaviors (Brungardt, 1997; Graham, 2001). Burgraff (1999) argues the case for having the leadership development in the community college setting. Many of these students continue on to further their education at 4-year institutions, where they have been noted as strong leaders and exhibit leadership behaviors (Burgraff, 1999; Howell, et al., 1982) In this study, the results do not support previous studies were community college transfer students indicated stronger leadership scores than non-community college transfer students. The researcher suggested the results may be skewed because the population maybe more similar in

academic and personal demographics and therefore would not reflect much variance on this variable in this study.

Academic characteristics variables were analyzed included academic classification, leadership coursework, and leadership trainings. Academic leadership experiences included such variables as academic status (freshman, sophomore, junior, and senior), formal leadership course work and leadership trainings have also be noted as predictors on leadership behavior. In a previous longitudinal study, Cress, Astin, Zimmerman-Oster, and Burhardt (2001) found evidence that experiences in leadership education and training programs have a non-significant affect on intended leadership outcomes. Their study implied that leadership potential exists in every student and those colleges and universities can develop this potential through leadership programs and activities. Previous notions that leadership is positional or an inherent characteristic are unfounded. The more involved a student is in student activities rather than formal trainings the more a student will development effective leadership behaviors (Cress, et al., 2001). Results of this study supported previous research indicate no significant effect for the academic leadership experience variables. The researcher does note in this study about 90% of the participants were had not taken a formal leadership course and less than half of participates indicated that they had participated in some leadership trainings. Moreover, the analysis showed that students, who had a course or trainings, did not have higher scores on the LPI. In addition, the score on leadership behavior indicated that most CALS students are still above average leaders. The need for more formal leadership courses does not seem be necessary for this group of students. However, the need for more leadership training sessions was supported in previous leadership studies (F. W. Brown & S. M. Fritz, 1994; Brungardt, 1996; J. C. Ricketts & Rudd, 2002; Schumacher & Swan, 1993). Therefore, the researcher suggests addressing the need to

focus leadership training sessions on specific leadership behaviors where students scored lower on the LPI. Moreover, that employers are seeking new employees who are prepared and ready to take on change and have the necessary leadership skills and competencies required to effectively manage and operate their companies and organizations. The implementation of more focused leadership trainings may be very beneficial for students as they prepare the transition into the workforce.

Community Leadership Experiences Positively Influence Leadership Behaviors.

To summarize, most respondents reported that they participated in some type of community service activity in high school. Over half also indicated that they currently participated in some type of community service or community outreach activity. The results of this study indicate that current community service participation does not have a small significant association with Leadership behavior. In previous studies, community leadership development programs outcomes were considered to have a direct impact on leadership development. Along with the idea of community leadership, "civic leadership" is a term that has been used to describe these leadership programs (Azzam & Riggio, 2003; Earnest, 1996; Pigg, 2001). In these civic leadership programs have much in common with "action learning" approach to leadership development (Fredricks, 1998, 2003; Ladewig & Rohs, 2000; Rohs, 2004). Many of these leadership development programs are sponsored by local community agencies with the aim of training leaders in the skills necessary to serve their communities. Previous studies also suggest experiential learning may be influential in leadership development and this is consistent with the evidence in this study.

Organizational Leadership Experiences May Influence Leadership Behaviors

In previous leadership studies, the number and types of leadership positions have been predictors that influence leadership behaviors. In addition, the more hours spent per week

performing volunteer or student organization activities, the more likely students show growth in leadership (Bardou, 2003; S. M. Fritz, et al., 2003; Nirenberg, 1998). In this study, organizational leadership is defined as current organizational involvement (in CALS and outside of CALS), leadership positions, numbers of years of involvement, and level of involvement. Just under half (48%), responded to being a part of an organization within the CALS. Of this population of CALS students who are involved outside of the college, 21% of participants were in at least one organization.

The diversity of current leadership experiences indicates that the CALS students are highly motivated and seek opportunities for personal development through student and professional organization involvement. This involvement also is reflected the diversity of students attracted to a college of agriculture. Additionally, this study reinforces leadership development through the culmination of many opportunities to practice leadership skills and behaviors. People accumulate organizational experiences and influences of diverse activities to form perceptions of leadership (Cress, et al., 2001; Duke, 1998; Kouzes & Posner, 2002). Previous research by (Cress, et al., 2001) organizational leadership behavior, analysis suggests that the more students are involved in student organizations the more likely they are to develop strong leadership skills and behaviors. The result of this study does not fully support the notion that student organization participation is important and a positive factor having higher scores on the LPI leadership inventory. However, respondents who were organizational leader in *high school* or did have higher leadership behavior scores on the LPI, as discussed below. Moreover, the researcher also suggests that involvement in these student organizational activities may result in higher rating on individual leadership skills and leadership competencies measures not measured by the LPI (Azzam & Riggio, 2003; Cress, et al., 2001).

Previous High School Experiences Affect Current Leadership Behaviors

Many of the CALS students who participated in this study served as officers and were two and three-year members, and have served as presidents of their student organizations in high school. Holding a leadership position in high school was associated with leadership behaviors of the participants in the study. These various leadership experiences have been shown to reinforce students' commitment to the organization, derivation of useful skills, and enjoyment in membership (Bardou, 2003; Sandmann & Vandenberg, 1995). This research asserts that these leadership behaviors began in high school. In a study by Ricketts and Rudd (2001) found that leadership experience aids personal development for career and societal success. High schools students with leadership experience have a strong leadership capacity because they better understand the phenomena of leadership as a personal and attainable undertaking (Zielinski, 1999).

Implications

Although the importance of student leadership behavior has been supported in previous research, the findings from this study have implications for the theory and provide questions to guide additional research on the college student leadership development practices. Much of the previous research involving leadership has focused on application in business or other academic settings not for students who are studying in the college of Agriculture. This study provides some initial support for the use of leadership behavior development in the field of agricultural leadership where there has been a lack of preparedness in leadership skills development. With the changing global society, the literature indicates that there is a great need for adequately trained agricultural leaders who have developed effective leadership behaviors that can deal with change and provide service back to the community in which it serves.

It was clear that leadership development of undergraduate CALS students occurs over time and begins in high school. During their high school experiences for most CALS students holding an officer position and participation in community service are significant factors that influence developing their leadership behavior. In high school, majority of CALS students were very activity involved in various extracurricular activities where leadership development was sought and valued.

The findings of the study also indicate that CALS students were more influenced by their participation in collegiate organizations than they were by participating in a formal leadership course or seminars which indicates the importance of developing leadership among groups and organizations. Therefore if leadership behavior is developed among groups and organizations it important to study where leadership development is occurring or not occurring within these organizations and groups.

Community leadership involvement was clearly important for the development of leadership behaviors whereas involvement community service was a frequent activity of a CALS students' college experience. By the majority of CALS students who have and still current participate in community service, CALS students see themselves as servant leaders who try to utilize their leadership for the betterment of organizations or society. Previous research indicates that there is a positive relationship between leadership behavior and community service. However, the way leadership behavior works in these contexts may be different where community service is used to teach and further enhance leadership behaviors.

The findings from this study have implications for the understanding the role of the leadership behavior theory, which may be less important than developing leadership skills or leadership competencies for CALS students. Previous literature and results of this study indicate

that CALS students are relatively strong leaders, but they may have shortcomings in certain of leadership skills and competencies which result in leadership behaviors as defined by the LPI. CALS students who are not adequately prepared to fill these leadership positions should be a concern for faculty, staff and administrators. Upon graduation, these CALS students are expected to be capable and effective agricultural leaders who are ready to meet societal and organizational challenges. In addressing these shortcomings, agricultural colleges and universities should take a more proactive and holistic approach in student leadership development for its future graduates. This study provides support for the preparation and successful delivery of future leadership development programming. The development of these leadership programs will focus on preparing professional competencies of CALS students in effort to effectively prepare them to fill this leadership void in our global society. As mentioned previously, employers and organizations are seeking future leaders who understand and can manage effect change and can deal with chaos. These leadership competencies are necessary to address the needs of our changing society. Moreover, future graduates who practice transformational leadership behavior and possess desired leadership competencies are highly marketable and often actively sought for advanced leadership positions.

The study can also be used to provide support for professional development activities and leadership training for infusion in CALS courses. Using the leadership behaviors or practices outlined by the LPI, administrators can begin structuring these leadership development activities in special leadership training workshops or course curriculum. For an example, leadership behavior *Inspiring a Shared Vision* had the lowest individual leadership scores. Specific leadership tasks such as “Enlists a common vision” (received one of the lowest self-ratings) can be addressed with a specific group activity where students are engaged and work in teams to development a

mission statement for their group or organization. From these experiences CALS students will be better equipped to understand and create a vision statement.

As previously mentioned, CALS students would need to participated in activities that have develop and use critical thinking skills where they would effectively learn how to ask questions and think outside of the normal parameters. In developing competencies in the leadership behavior of *Challenging the Process*, CALS students would participate in activities and workshops where students learn how to take initiative by experimenting with the way that organizations or groups normally operate to solve an organizational problem. By becoming active participants in making decisions and taking risks, CALS will become better equipped to manage and handle change.

By determining factors that influence CALS students' leadership behaviors; pre-service programs could be tailored to motivate CALS students to enhance their overall leadership behaviors. In-service workshops for all CALS student organizations could be planned to specifically challenge CALS students in such a way that they may increase the level of personal leadership development as well as develop some understand of organizational leadership. By having CALS students participate in such as community service learning classroom activities faculty can begin enabling CALS student to develop specific leadership competencies inside that class that will be transferable to more real world activities. As faculty and staff, continue to infuse this student leadership initiative, a pre-measure on leadership behavior can be collected to measure CALS student success beginning of their freshmen year, and again when they graduate. Using inventories such as the LPI, CALS students could benefit by receiving high quality leadership instruction through educational programs and classroom curriculum that has the

potential to broaden their leadership behaviors which also promotes opportunity to increase their personal growth, and enhance their academic career success (Bolt, 1996).

Finally, since leadership development is an important component of agricultural education, the findings of this study have relevance to it and other disciplines in which leadership is studied and practiced on a global basis. The findings of this study indicate the CALS students are developing leadership behaviors to become more situational “change” leaders, which is now greater trend for recent college graduates. Employment trends indicate a greater desire for its future employees to come in and create “change”. This element of “change” is the foundation where leadership and management meet and is transformed into making a new way of conducting business. Undergraduates, who graduate and have a conceptual understanding of leadership theory, will be more, equipped to manage and adapt to the ever changing society.

By defining leadership behaviors needed for future leadership positions, leadership educators are more knowledgeable about leadership theory and are able to incorporate it into application. Whereas it is necessary to have explanations for factors that influence leadership behaviors, the leadership educator becomes more in tune with the learner(leader) needs and better equipped to be provide more effective and proficient leadership learning experiences.

Recommendations

Recommendations for Theory and Future Research

Based upon the findings and conclusions of this study, the following suggestions for additional research were made:

- The results of the study indicated that a large majority of CALS students who actively participated in community service seem to have high scores on the LPI leadership inventory. The researcher suggests that further research should be conducted on the influence of current and previous community service leadership activities and participation and its effects over all leadership behavior. Given that leadership develops in a variety of settings, community-based leadership would appear to be a strong predictor and influence on leadership development.

- Previous studies by Cress (2001) also indicated the Hispanic students have indicated higher leadership behavior ratings. The researcher recommends that study be conducted on Hispanic CALS students to ascertain why Hispanic student score higher on the LPI and to indentify the specific leadership behaviors associated with higher scores.
- Further research is needed to determine associations between leadership behaviors and CALS student organizational involvement using the LPI. Because leadership development appears to occur in a variety of settings, there might be no one way that leadership is learned (Bennis, 1989; Kouzes & Posner, 2002). The finding of this study provided evidence to show that the student group involvement is an important characteristic of many CALS students. Whereas there is no evidence of involvement in certain CALS organizations or types of CALS that may or may not have an influence on leadership behavior. Additionally the researcher recommends the study to determine if there is an association between specific CALS organizations is specific leadership behaviors.
- Being that a large percent of CALS students were in leadership positions in their high school student organizations, further research should be conducted to determine if what type of previous leadership positions may have an influence on current leadership behavior. In addition, there is a need to indentify which high school extracurricular activities may have influence on leadership behavior of CALS students.
- Although, the results indicated that involve with student organizations were not statistically significant, previous literature has indicated student organization involvement may have influence on leadership behavior. The researcher recommends examine which student organization may influence leadership development and identify mechanisms for organizational effects.
- It also suggested by the researcher to explore the leadership behaviors of graduate students in colleges of agricultural and life sciences. Similarly to the undergraduate population there may be a void in leadership development on the graduate level. This researcher suggests that the graduate student population should be studied to see what influence their leadership behavior and if there are differences between undergraduate and graduate CALS students.

Recommendations for Practitioners

- Having these necessary leadership skills is essential for new graduates as they prepare to work in global society. The researcher recommends an introductory lead Agricultural leadership course. As agricultural leaders, it is important to be proactive in developing leadership curriculum to address change. While it is unlikely to create a uniform method of leadership development, the researcher acknowledges that there are many methods in teaching leadership skills and competencies. It is recommended that leadership curriculum is incorporated into student development activities within the college. For an example as a part of an introductory course, all CALS students would participate in some type of organized community service activity as well as have some developmental workshop on goal setting and developing a vision statement. The researcher suggests that these activities will further enhance and provide a foundation for further leadership development.

- Being that a large percentage of CALS are involved in student organizations within the college and the university. The researcher recommends that leadership trainings are required for all CALS student organizations to participate in as part of annual college student organization registration process. This leadership training would be view as an enrichment activity to promote more effective leadership behaviors and requirement to apply for university funding and college support. Leadership training sessions would be part of the student organization's compliance procedures to be active and recognized student organization. It is recommended to have these leadership development activities conducted regularly in order to maximize opportunities for serving as many students as possible. In addition, the college should conducted and evaluated surveys to see if students feel they are getting the leadership development that they need to assist their students in developing leadership competencies within their organizations. It is necessary to explore the relationship between student involvement in student activities personal characteristics and leadership behaviors.
- Based on the results of the results and conclusions of the study, it is recommended that CALS organize a task force to research the leadership development needs of undergraduates and the structure of the leadership opportunities offered to students. Across majors it is recommended to explore the types of leadership experiences which are desired and necessary to meet challenges that employers are seeking. The results of the study indicate at CALS students are highly motivated in being involved in activities to development leadership skills and practices but not what specific leadership behaviors are being practiced. Therefore, having a more education and specific leadership skills which are essential CALS can continue to further develop and enhance the leadership behaviors of its students. Thus high achieving and competent leaders. For an example, the researcher suggestions more specialized leadership development on goal setting and creating a vision. The results of the indicate CALS scored lower on this leadership behavior. Moreover in developing strong future leadership, the researcher suggests using the LPI or other leadership measures to address area where their maybe leadership voids.

Limitations

As with any scholarly study, limitations often restrict the generalizability of the study. The first limitation of this study is related to the nature of the institution being studied. This study was conducted at the University of Florida (UF), which is one of the largest and oldest land grant universities in the United States. Because this study was conducted at the University of Florida, the results may be used in comparing them only to similar universities. The study nevertheless will contribute useful information and recommendations for researchers and administrators at large Division I, public land grant institutions.

The second limitation of this study deals with the population sampled. Using college students, it was very difficult and time consuming to get a high response rate from the population. The response rate of 33.7% was low; and, it presented the problem of non-response bias. Chapter 3 addressed the non-response bias where the respondents did not answer the survey completely or did not answer it all.

As noted earlier, a limitation with the population sampled was the inability to have full access of student contact information. The inability to have full access made it difficult to make initial contact and conduct follow-up contacts with the students. Other variables not included in the study may influence individuals' leadership behaviors, including measures of leadership style and leadership skills.

The fourth limitation of this study is the fact that information may or may not be accurate because it is self-reported. The data gained might have been more accurate if the data were gained from observation of CALS students, or reports by peers and faculty, but the researcher assumes the information to be true and accurate.

The final limitation of this study is the research instrument. The researcher designed the survey to be as concise as possible, but the required time to complete the number of items for the survey may have been excessive for an online survey. Respondents from the pilot study and frequency on the drop in the total number of response indicate that the number of questions may have been excessive and should be limited. In regards to the survey design, the researcher notes the when dealing with student data, it is necessary to gather student ID information. This information should be collected to confirm student participation and used to compare respondents and non-respondents.

APPENDIX A
PRE-NOTICE LETTER

October 22, 2008

Dear CALS Student,

The purpose of this study is to identify leadership styles and practices of students in the College of Agricultural and Life Sciences and to determine the factors that influence your leadership development. You have been identified as a student leader in the College of Agricultural and Life Sciences at the University of Florida. The information you provide on the survey will be used to establish justification for future support of agricultural leadership education, career development and student development activities in College of Agricultural and Life Sciences.

You have been selected to participate in this survey based upon your exemplary leadership in an organization within the College of Agricultural and Life Sciences at the University of Florida. Your participation is voluntary; however we sincerely hope that you will help us with this project. We estimate that the survey should take approximately 10 minutes to complete. You do not have to answer any question that you do not wish to answer, and you will not be penalized in any way for not participating in the study. We believe that there are no risks to you from participating in this study, nor is there a monetary incentive. If you have questions about your rights concerning this study, please contact the UFIRB office, P.O. Box 112250, University of Florida, Gainesville, FL, 32611-2250. Since your responses will represent student leadership in the College of Agricultural and Life Sciences at the University of Florida, we urge you to complete the questionnaire and as soon as possible. This is a good opportunity for you to help shape leadership opportunities in high schools and at the University of Florida, further demonstrating your leadership concern.

Please note that your email address on the questionnaire will be used only to check your name off the mailing list when your questionnaire is returned and will be deleted before data entry. A paper copy of your responses will be printed, without the email address, and the electronic copy will be destroyed. Please be assured that all individual responses will be kept strictly confidential to the extent provided by law, and we will not release information that could identify individuals who participate in the study.

If you have any questions about this research study or the survey, please contact me by telephone (352) 392-0502, email (patterbq@ufl.edu), or Dr. Glen Israel by email (gisrael@mail.ifas.ufl.edu). Thank you for your help and your leadership in the College of Agricultural and Life Sciences.

Sincerely,

Bryan Patterson
Doctoral Candidate

Glen Israel
Professor

Ed Osborne
Professor

APPENDIX B
E-MAIL CONTACTS

MESSAGE TESTING EMAILS

Survey contact e-mail

Subject: Leadership Survey UPDATED LINK! - WIN Tickets! (Please complete the survey)
Thank you very much for beginning the CALS Leadership survey. In an effort to better serve the students of the College of Agricultural and Life Sciences we need your full input. Please take a few moments to complete the survey at the link below.

You completed survey will register you for 2 random drawings for complimentary tickets to the UF vs. UGA football game in Jacksonville, FL on Oct 27, 2007 and Homecoming on Nov.3 UF vs. Vanderbilt. The raffle for UF vs. UGA tickets will be held on Wednesday, Oct. 24, 2007. So please take a few moments to complete the survey.

<https://www.surveymonkey.com/s.aspx>
Thank you again. Go Gators.

Text for Follow-up Email- Win Tickets for Homecoming:

Subject: Reminder: We Still would like get your feedback!! Leadership Survey - WIN HOMEcoming Tickets!) Make sure you are registered!!!

Dear CALS Student,

Thank you for logging in and beginning the leadership survey. If you have completed the survey please disregard. Although we've already heard back from 878 of your peers, we'd like to know what YOU think about the issue of leadership and your previous leadership experiences! This is a topic that bridges all College of Agricultural and Life Sciences students, which is why we'd still like to hear from you. We have a less than 2 weeks and we really need your input.

Please take a few moments to log back and complete the survey at the link below; the process should only take less than 10 minutes. We ask you to complete the entire 38 question survey for an accurate response. You will be asked to input your UF gator link email address for verification purposes. As an incentive for your participation on this survey, we will conduct random drawings for complimentary tickets Homecoming on Nov.3 UF vs. Vanderbilt.

Thanks for your participation!

<https://www.surveymonkey.com/s.aspx>

Please note: If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list.

<https://www.surveymonkey.com/optout.aspx>

Text for follow –up email

Subject Last **Notice for CALS Leadership Survey: We need your input.**

Dear CALS Student,

Thank you for logging in and completing the CALS Leadership survey. If you have completed the survey please disregard.

Student Leadership is a topic that bridges all College of Agricultural and Life Sciences students, which is why we'd still like to hear from you.

This will be the last notice I will send you to please complete the UF Leadership survey. Currently, One thousand and twenty-one (**1,021**) students have responded to this survey, but it is still incomplete without your response.

The survey will be closed in one week as I need to report the results to the Dean's Office, so please be sure to fill it out before this Friday,(Nov.9th).

Please take a few moments to log back and complete the survey at the link below; the process should only take less than 10 minutes. We ask you to complete the entire 38 question survey for an accurate response. You will be asked to input your UF gator link email address for verification purposes.

Thanks for your participation!

http://www.surveymonkey.com/s.aspx?sm=yweth6pahLXsaiNBue_2f7zA_3d_3d

Please note: If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list.

http://www.surveymonkey.com/optout.aspx?sm=yweth6pahLXsaiNBue_2f7zA_3d_3d

Bryan Patterson
PhD Candidate
patterbq@ufl.edu

APPENDIX C INSTRUMENT

Assessing Leadership Behaviors of CALS Undergraduates

Introduction

Title

ASSESSING LEADERSHIP BEHAVIORS OF UNDERGRADUATE STUDENTS IN THE COLLEGE OF AGRICULTURAL AND LIFE SCIENCES(CALS) AT THE UNIVERSITY OF FLORIDA.

Business and Government leaders are interested in knowing more about the leadership knowledge and skills of potential employees. As such, the purpose of this study is to identify the leadership behaviors, practices, education, and experiences of IFAS undergraduate students.

The survey should take approximately 10 minutes to complete. The information you provide will help the college better understand the value of student leadership development, and their prior experiences in leadership, student activities, and leadership development. Your responses will remain confidential. Only summary data will be reported in order to protect the identity of each individual respondent.

1. Please Click "I Agree" if you wish to participate.

- I "Agree" to participate
 I "Do Not" wish to participate

2. Gatorlink email address

Your participation is voluntary. You do not have to answer any question that you do not wish to answer. We hope you that you will answer the questions. Thank you for your participation in this study and best wishes in your future leadership endeavors.

If you would like to learn more about this study, please contact me at 310 Rolfs Hall, Gainesville campus, 352-392-0502 ext 238. If you have questions about your rights as a research participant, please contact the UFIRB Office, Box 112250, University of Florida, Gainesville, FL 32611-2250, 352-392-0433.

Assessing Leadership Behaviors of CALS Undergraduates

Leadership Behavior

3. In order to assess your leadership behavior, we would like for you to complete the Leadership Practices Inventory (LPI). Please answer all items in this survey.

To what extent do you typically engage in the following behaviors? Choose the response item that best applies to each.

	Almost Never	Rarely	Seldom	Once in While	Occa- sionally	Some- times	Fairly Often	Usually	Very Frequently	Almost Always
I set personal examples of what I expect of others.	<input type="radio"/>									
I talk about future trends that will influence how our work gets done.	<input type="radio"/>									
I seek out challenging opportunities that test my own skills and abilities.	<input type="radio"/>									
I develop cooperative relationships among the people I work with.	<input type="radio"/>									
I praise people for a job well done.	<input type="radio"/>									
I spend time and energy making certain that the people I work with adhere to principles and standards we have agreed on.	<input type="radio"/>									
I describe a compelling image of what our future could be like.	<input type="radio"/>									
I challenge people to try out new and innovative ways to do their work.	<input type="radio"/>									
I actively listen to diverse points of view.	<input type="radio"/>									
I make it a point to let people know about my confidence in their abilities.	<input type="radio"/>									
I follow through on promises and commitments that I make.	<input type="radio"/>									
I appeal to others to share an exciting dream of the future.	<input type="radio"/>									
I search outside the formal boundaries of my organization for innovative ways to improve what we do.	<input type="radio"/>									
I treat others with dignity and respect.	<input type="radio"/>									

Assessing Leadership Behaviors of CALS Undergraduates

themselves.

I give the members of the team lots of appreciation and support for themselves.

Assessing Leadership Behaviors of CALS Undergraduates

Leadership Behavior Continued

5. What is your major?

6. Are you a current member of an organization in the College of Agricultural and Life Sciences?

 Yes

 No (If No, proceed to # 8)

7. a) Which of the following CALS organizations are you a member?

b) What highest leadership position and level do/did you hold in each organization (Ex. President, Vice Pres., Sectary, Treasurer, Membership Coordinator, Committee Chair, member or Other)?

c) What is the highest level in the organization did you held an office? (EX. Chapter, District, State, Regional, National)

d) How many years were you in that leadership position? (Fill in the appropriate information for each organization you are a member of.)

	Leadership Positon	Membership/Leadership Level	Number of Years
Alpha Zeta	<input type="text"/>	<input type="text"/>	<input type="text"/>
American Society of Agricultural Engineers	<input type="text"/>	<input type="text"/>	<input type="text"/>
Block & Bridle	<input type="text"/>	<input type="text"/>	<input type="text"/>
CALS Ambassadors	<input type="text"/>	<input type="text"/>	<input type="text"/>
CALS Student Council	<input type="text"/>	<input type="text"/>	<input type="text"/>
Dairy Science Club	<input type="text"/>	<input type="text"/>	<input type="text"/>
ENSO (Urban Ent. & Nematology Student Org.)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Environmental Horticulture Club	<input type="text"/>	<input type="text"/>	<input type="text"/>
Equestrian	<input type="text"/>	<input type="text"/>	<input type="text"/>
Ethnoecology Society	<input type="text"/>	<input type="text"/>	<input type="text"/>
Family, Youth & Community Sciences Club	<input type="text"/>	<input type="text"/>	<input type="text"/>
Florida Water Environment Assoc. St. Ch.	<input type="text"/>	<input type="text"/>	<input type="text"/>
Food Sciences & Human Nutrition Club	<input type="text"/>	<input type="text"/>	<input type="text"/>
Forestry Club	<input type="text"/>	<input type="text"/>	<input type="text"/>
FRE-NAMA	<input type="text"/>	<input type="text"/>	<input type="text"/>
Gator Ch. of the Florida Assn. for Food Protect.	<input type="text"/>	<input type="text"/>	<input type="text"/>
Gator Citrus Club	<input type="text"/>	<input type="text"/>	<input type="text"/>

Assessing Leadership Behaviors of CALS Undergraduates

Gator Collegiate Cattlewomen's Association	<input type="text"/>	<input type="text"/>	<input type="text"/>
International Gourmet Association	<input type="text"/>	<input type="text"/>	<input type="text"/>
Microbiology & Cell Science Student Org.	<input type="text"/>	<input type="text"/>	<input type="text"/>
MANRRS	<input type="text"/>	<input type="text"/>	<input type="text"/>
Marsport Greenhouse Project	<input type="text"/>	<input type="text"/>	<input type="text"/>
Natural Resource & Environmental Coll. Council	<input type="text"/>	<input type="text"/>	<input type="text"/>
Pre-Vet Club	<input type="text"/>	<input type="text"/>	<input type="text"/>
School of Forest Res. & Cons. Student Council	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sigma Phi Alpha	<input type="text"/>	<input type="text"/>	<input type="text"/>
Society of American Foresters Student Chapter	<input type="text"/>	<input type="text"/>	<input type="text"/>
St. Ch. of the American Assn. of Bovine Pract.	<input type="text"/>	<input type="text"/>	<input type="text"/>
The Investigators	<input type="text"/>	<input type="text"/>	<input type="text"/>
Urban Entomological Society	<input type="text"/>	<input type="text"/>	<input type="text"/>
Wetlands Club	<input type="text"/>	<input type="text"/>	<input type="text"/>
Wildlife Society	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>

8. Are you a current member of a University of Florida organization outside of the College of Agricultural and Life Sciences?

- Yes
 No (If no, proceed to #10)

Assessing Leadership Behaviors of CALS Undergraduates

9. a) Indicate the type of organization(s) (service, social, social/service, fraternity, sorority, honorary, intramural sports, other) outside of CALS that you are a member?

b) What highest leadership position and level do/did you hold in each organization (Ex. President, Vice Pres., Secretary, Treasurer, Membership Coordinator, Committee Chair, Other)?

c) What is the highest level in the organization you held an office? (EX. Chapter, District, State, Regional, National) d) How many years were you in that leadership position? (Fill in the appropriate information for each organization you are a member of.)

	Organization	Leadership Position	Level	Number of years
UF- Organization One	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
UF- Organization Two	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
UF- Organization Three	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
UF- Organization Four	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
UF- Organization Five	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

10. How many leadership trainings (includes courses, seminars, including Solutions Seminars and workshops over 3 hours) have you participated in during your college career? (Check all that apply)

- None
 1-2 trainings
 3-4 trainings
 5-6 trainings

11. Have you taken the AEE 3414, Leadership Development, course for credit?

- Yes
 No

12. What other leadership courses have you taken in college? (Please list the course prefix, number, and title)

13. Are you pursuing or enrolled in a leadership minor offered at the University of Florida?

- Yes
 No

Assessing Leadership Behaviors of CALS Undergraduates

High School Leadership Activities

14. In which high school activities did you participate? (Check all that apply)

- Student Government
- BETA
- SADD
- FCA
- JROTC
- Class Officer
- FBLA
- Science Club
- Band
- Foreign Language Club
- Baseball/Softball
- Debate Team
- Swimming/Diving
- Pre-Health
- Basketball
- Boy Scouts/Girl Scouts
- Football
- National Honor Society
- Volleyball
- 4-H member
- Cross-Country/Track
- FFA member
- Other Athletics
- Other (please specify)

15. Prior to attending the University of Florida, were you ever an organizational officer or in a leadership position?

- Yes
- No (If No, proceed to question #19)

16. If you answered "Yes" to question #15; What type of position in the organization did you hold an office? (Check all that apply)

- President
- Vice-President
- Secretary
- Treasurer
- Membership Coordinator
- Committee Chair

Other (please specify)

Assessing Leadership Behaviors of CALS Undergraduates

17. To what level did you hold an office? (Check all that apply)

- None
- Club
- State
- District
- Region
- National

18. How many total years were you an officer or in a leadership role?

- 0 - 1
- 2 - 3
- 4 - 5
- 5 or more

19. In high school, did you enroll in agricultural education courses?

- Yes
- No

20. In which of the following 4H Events or FFA Career Development Events have you participated? (Check all that apply)

- Parliamentary Procedure
- Extemporaneous Public Speaking
- Prepared Public Speaking
- Agricultural Communications
- Agricultural Marketing
- Ag Issues Forum
- Job Interview
- None
- Other (please specify)

21. If your high school offered leadership courses; how many did you participate in during your high school career? (over 3 hour training, seminars, and workshops)

- None
- 1-2 courses
- 3-4 courses
- 5-6 courses

Assessing Leadership Behaviors of CALS Undergraduates

Leadership Development

22. To what do you attribute your leadership development? Rank each of the following on how much your leadership was effected:

	Not Effective	Somewhat Effective	Moderately Effective	Effective	Very Effective
High School Agricultural Education	<input type="radio"/>				
FFA activities	<input type="radio"/>				
4-H activities	<input type="radio"/>				
Boy Scouts/ Girl Scouts	<input type="radio"/>				
Church activities	<input type="radio"/>				
High school athletics	<input type="radio"/>				
Other high school organizations	<input type="radio"/>				
Community organizations	<input type="radio"/>				
Organizations at the University of Florida	<input type="radio"/>				
Leadership classes at the University of Florida	<input type="radio"/>				

23. Which of the following were role models for your leadership development? Indicate how you would describe these individual(s) (Check all that Apply)

- Student
- Teacher
- Family
- Athletic Coach
- Religious Leader
- Professional
- None

24. Did you participate in community service activities in High School?

- Yes
- No (If no go to question #28)

25. How often did you participate in community service activities in high school?

- Once a Year
- Once six months
- Once a month
- Once every week
- Daily

26. Do you currently participate in some type of community service or community outreach now?

- Yes
- No (If no proceed to question #28)

Assessing Leadership Behaviors of CALS Undergraduates

27. How often do you participate in community service activities?

- Once a Year
- Once six months
- Once a month
- Once every week
- Daily

Assessing Leadership Behaviors of CALS Undergraduates

Thank you!

Thank you for completing the survey.

APPENDIX D
CORRELATIONS OF INDEPENDENT AND DEPENDENT VARIABLES

Table D-1. Pearson Product Moment Correlations of Independent and Dependent Variables with Personal Characteristics Variables
Leadership

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
PRIOR OFFICER	Pearson Correlation	0.1813	0.157997	-0.01274	-0.00129	0.038817	0.05120	-0.08215	0.08462	-0.01767
	Sig. (2-tailed)	-6.3609	-4.447	0.69271	0.967975	0.228557	0.11213	0.010718	0.00715	0.57435
	N	1011	1011	964	964	964	964	964	1009	1013
LEADERSHIP COURSE	Pearson Correlation	-0.15505	0.117502	0.01585	0.00396	0.020854	0.04505	-0.06988	0.01817	0.02661
	Sig. (2-tailed)	7.56E-07	0.000185	0.62337	0.902385	0.518262	0.16263	0.030214	0.56484	0.39818
	N	1008	1008	962	962	962	962	962	1006	1010
HS COMMUNITY SERVICE	Pearson Correlation	0.23696	0.080363	0.02603	0.023165	-0.02449	0.01231	-0.02932	-0.0751	-0.06191
	Sig. (2-tailed)	2.2E-14	0.010543	0.41927	0.472287	0.447284	0.70242	0.362931	0.01698	0.04873
	N	1012	1012	965	965	965	965	965	1010	1014
HS COMMUNITY PARTICI- PATION	Pearson Correlation	-0.20432	-0.16743	-0.0217	-0.03596	-0.01	0.01438	0.045533	-0.03077	-0.0354
	Sig. (2-tailed)	1.74E-10	1.86E-07	0.51227	0.27752	0.762621	0.66402	0.169011	0.34173	0.27316
	N	958	958	914	914	914	914	914	957	960
CURRENT COMMUNITY SERVICE	Pearson Correlation	-0.03573	0.113426	-0.00558	0.000627	0.023231	-0.00455	-0.0137	0.00998	-0.01458
	Sig. (2-tailed)	0.26253	0.000361	0.86437	0.984699	0.477078	0.88917	0.675067	0.75444	0.64741
	N	985	985	939	939	939	939	939	984	987
SERVICE PARTICI- PATION	Pearson Correlation	-0.11301	-0.17025	-0.04098	-0.04224	-0.0013	-0.04475	0.114505	0.04827	0.01119
	Sig. (2-tailed)	0.00287	6.48E-06	0.29099	0.276389	0.973231	0.24875	0.003084	0.20436	0.76808
	N	694	694	666	666	666	666	666	693	696

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
YEAR IN COLLEGE	Pearson Correlation	0.76952	0.030394	0.012199	0.020715	-0.01971	-0.00601	-0.00949	0.003532	-0.03092
	Sig. (2-tailed)	2.3E-197	0.336	0.706093	0.52192	0.542333	0.852725	0.76922	0.911077	0.327289
	N	1004	1004	958	958	958	958	958	1002	1006
ENROLL	Pearson Correlation	0.51796	0.108858	0.064007	0.051592	-0.03584	0.036046	-0.08794	-0.05446	-0.075
	Sig. (2-tailed)	8.03E-71	0.000509	0.046378	0.108495	0.265024	0.262292	0.006158	0.083056	0.01669
	N	1016	1016	969	969	969	969	969	1014	1018
UFGPA	Pearson Correlation	0.25191	0.08489	-0.18515	-0.19064	0.05966	0.037616	0.199968	0.05757	-0.09767
	Sig. (2-tailed)	6.12E-16	0.007232	8.2E-09	2.88E-09	0.065342	0.2455	4.53E-10	0.069075	0.001967
	N	1000	1000	955	955	955	955	955	998	1002
AGE	Pearson Correlation	1	0.152826	0.030892	0.037866	-0.01334	0.006847	-0.05376	0.006839	-0.08964
	Sig. (2-tailed)		9.64E-07	0.336246	0.238465	0.678083	0.831256	0.094104	0.827636	0.004167
	N	1020	1018	971	971	971	971	971	1016	1020
GENDER	Pearson Correlation	0.15282	1	-0.00969	-0.00696	0.029044	-0.00146	-0.01028	0.015721	0.008832
	Sig. (2-tailed)	9.64E-07		0.76298	0.828579	0.365965	0.963861	0.748945	0.616712	0.778143
	N	1018	1020	971	971	971	971	971	1016	1020
MARITAL Status	Pearson Correlation	0.26791	0.09012	0.040249	0.039738	-0.01325	0.008652	-0.05865	-0.06613	-0.03614
	Sig. (2-tailed)	3.81E-18	0.00406	0.210879	0.216734	0.680485	0.788044	0.06817	0.035334	0.249572
	N	1015	1015	968	968	968	968	968	1013	1017

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
ETHNIC	Pearson Correlation	0.03089	-0.00969	1	0.897403	-0.69515	-0.28531	-0.48043	-0.14781	0.023424
	Sig. (2-tailed)	0.33624	0.76298			0	1.2E-142	7.54E-20	7.59E-58	3.82E-06
	N	971	971	982	982	982	982	982	969	973
WHITE	Pearson Correlation	0.03786	-0.00696	0.897403	1	-0.42959	-0.5827	-0.53818	-0.18566	0.062472
	Sig. (2-tailed)	0.23846	0.828579	0		2.27E-45	2.32E-90	7.91E-75	5.79E-09	0.051404
	N	971	971	982	982	982	982	982	969	973
OTHER	Pearson Correlation	-0.01334	0.029044	-0.69515	-0.42959	1	-0.08827	-0.08153	0.008466	0.040981
	Sig. (2-tailed)	0.67808	0.365965	1.2E-142	2.27E-45		0.005641	0.010596	0.792396	0.201524
	N	971	971	982	982	982	982	982	969	973
HISPANIC	Pearson Correlation	0.00684	-0.00146	-0.28531	-0.5827	-0.08827	1	-0.11058	0.139829	-0.06946
	Sig. (2-tailed)	0.83125	0.963861	7.54E-20	2.32E-90	0.005641		0.000518	1.25E-05	0.030278
	N	971	971	982	982	982	982	982	969	973
BLACK	Pearson Correlation	-0.05376	-0.01028	-0.48043	-0.53818	-0.08153	-0.11058	1	0.121507	-0.05073
	Sig. (2-tailed)	0.09410	0.748945	7.59E-58	7.91E-75	0.010596	0.000518		0.00015	0.113778
	N	971	971	982	982	982	982	982	969	973
LEADERSHIP TRAINING	Pearson Correlation	0.01651	0.035625	0.012949	0.031882	0.02538	-0.03372	-0.03114	0.006562	0.026585
	Sig. (2-tailed)	0.59930	0.257049	0.687097	0.321226	0.429779	0.294156	0.332664	0.834838	0.397282
	N	1014	1014	970	970	970	970	970	1012	1016
FACTOM	Pearson Correlation	0.00155	-0.1057	-0.0587	-0.05369	0.014844	0.073311	-0.00901	0.013559	-0.01552
	Sig. (2-tailed)	0.96040	0.000731	0.067233	0.094165	0.643754	0.0222	0.779032	0.665968	0.620488

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
	N	1018	1018	973	973	973	973	973	1016	1020
PRIORLEV	Pearson Correlation	0.02129	0.008752	0.040819	0.043207	-0.01374	-0.02242	-0.02954	-0.02663	0.004798
	Sig. (2-tailed)	0.55597	0.808659	0.269726	0.242675	0.710442	0.544458	0.424595	0.461386	0.89432
	N	767	768	733	733	733	733	733	767	769
PRIOROFF	Pearson Correlation	-0.05922	-0.13466	0.044496	0.051605	-0.02273	-0.07363	0.011823	-0.05955	-0.00308
	Sig. (2-tailed)	0.141399	0.000775	0.279752	0.209924	0.580928	0.073416	0.774058	0.139225	0.939037
	N	618	620	592	592	592	592	592	618	620
UFYEAR	Pearson Correlation	-0.06712	-0.09329	-0.03757	-0.06841	0.009682	0.065481	0.023139	-0.00221	0.08833
	Sig. (2-tailed)	0.163715	0.052957	0.446975	0.165735	0.844666	0.184672	0.639562	0.963499	0.066314
	N	432	431	412	412	412	412	412	431	433
UFLEVEL	Pearson Correlation	-0.08989	-0.11117	-0.06587	-0.10472	0.001503	0.093784	0.050934	0.018799	0.106548
	Sig. (2-tailed)	0.084658	0.033006	0.216324	0.048977	0.977522	0.078039	0.339301	0.719274	0.040522
	N	369	368	354	354	354	354	354	368	370
UFLEADER	Pearson Correlation	-0.0739	-0.08208	-0.05683	-0.08572	-0.05613	0.088185	0.063016	0.010046	0.064398
	Sig. (2-tailed)	0.1721	0.12979	0.305544	0.121848	0.311552	0.111462	0.255832	0.853139	0.233541
	N	343	342	327	327	327	327	327	342	344
UFORG	Pearson Correlation	-0.0467	-0.10082	-0.03689	-0.06698	-0.02265	0.089968	0.016083	0.012595	0.047432
	Sig. (2-tailed)	0.307248	0.027351	0.432964	0.154177	0.630257	0.05542	0.732528	0.783364	0.299205
	N	480	479	454	454	454	454	454	479	481
CALSLLEAD	Pearson Correlation	0.049095	0.00381	0.048543	0.070318	-0.00849	-0.04611	-0.05342	-0.13116	0.054479
	Sig. (2-tailed)	0.313189	0.937582	0.324482	0.153234	0.863224	0.34932	0.278203	0.006973	0.262438
	N	424	425	414	414	414	414	414	422	425
CALSMEM	Pearson Correlation	0.044215	0.00965	0.061557	0.096261	-0.00273	-0.06692	-0.07532	-0.13093	0.075547
	Sig. (2-tailed)	0.410928	0.857434	0.255551	0.07501	0.959758	0.216388	0.163999	0.014803	0.159048
	N	348	349	343	343	343	343	343	346	349

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
CALSYEAR	Pearson									
	Correlation	0.051606	0.01748	0.047973	0.07383	-0.01456	-0.04858	-0.05183	-0.12072	0.045966
	Sig. (2-tailed)	0.291935	0.720943	0.331966	0.13511	0.768517	0.325896	0.29453	0.013629	0.347363
	N	419	420	411	411	411	411	411	417	420
HIGHSCH	Pearson									
	Correlation	-0.08079	0.033373	0.006672	0.023744	0.07619	-0.02029	-0.07276	-0.11885	-0.00165
	Sig. (2-tailed)	0.013321	0.307246	0.842098	0.478297	0.022715	0.544664	0.029606	0.000268	0.959786
	N	938	938	894	894	894	894	894	936	940
HAD A ROLE MODEL	Pearson									
	Correlation	-0.0983	-0.01657	-0.01728	-0.03516	-0.0147	0.042415	0.018379	-0.02338	0.116291
	Sig. (2-tailed)	0.001762	0.598983	0.592333	0.275659	0.648723	0.188468	0.568917	0.458434	0.000209
	N	1010	1010	963	963	963	963	963	1008	1012
OFFICER IN COLLEGE	Pearson									
	Correlation	0.203125	0.020227	-0.05993	-0.07908	0.015456	0.041451	0.062154	-0.09665	-0.02903
	Sig. (2-tailed)	6.65E-11	0.519977	0.062089	0.013758	0.630663	0.197091	0.052971	0.002085	0.355273
	N	1014	1014	970	970	970	970	970	1012	1016
FACT1M	Pearson									
	Correlation	0.015356	-0.11	-0.03183	-0.01223	0.025215	0.039361	-0.04297	0.012493	0.000518
	Sig. (2-tailed)	0.624584	0.000438	0.321238	0.703253	0.432082	0.219942	0.180506	0.690815	0.986829
	N	1018	1018	973	973	973	973	973	1016	1020
FACT2M	Pearson									
	Correlation	-0.01977	-0.06272	-0.0717	-0.07306	0.008255	0.090744	0.006543	0.003787	-0.03577
	Sig. (2-tailed)	0.528594	0.045446	0.025319	0.022654	0.79704	0.004614	0.838493	0.904027	0.253659
	N	1018	1018	973	973	973	973	973	1016	1020
FACT3M	Pearson									
	Correlation	0.019124	-0.04735	-0.02026	-0.0117	0.004068	0.056669	-0.04578	0.000376	-0.02333
	Sig. (2-tailed)	0.542209	0.13109	0.527891	0.715399	0.89916	0.07726	0.153587	0.990461	0.456671
	N	1018	1018	973	973	973	973	973	1016	1020
FACT4M	Pearson									
	Correlation	0.017121	-0.14429	-0.07112	-0.07742	0.018974	0.060576	0.036793	0.055709	-0.00471
	Sig. (2-tailed)	0.585316	3.8E-06	0.026533	0.015708	0.554423	0.05891	0.251554	0.075915	0.880607
	N	1018	1018	973	973	973	973	973	1016	1020

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
FACT5M	Pearson									
	Correlation	-0.01695	-0.12818	-0.07076	-0.06993	0.013195	0.07823	0.011325	0.000162	0.000711
	Sig. (2-tailed)	0.589153	4.1E-05	0.027298	0.029164	0.681016	0.014654	0.724234	0.995875	0.981904
	N	1018	1018	973	973	973	973	973	1016	1020
GREW	Pearson									
	Correlation	0.006839	0.015721	-0.14781	-0.18566	0.008466	0.139829	0.121507	1	0.012293
	Sig. (2-tailed)	0.82763	0.616712	3.82E-06	5.79E-09	0.792396	1.25E-05	0.00015		0.69524
	N	1016	1016	969	969	969	969	969	1018	1018
FAMILY Env.	Pearson Correlation	0.04286	0.03548	-0.04509	-0.06039	0.000847	0.04296	0.043836	0.01317	-0.18118
	Sig. (2-tailed)	0.17137	0.257593	0.15987	0.059701	0.978949	0.18057	0.171857	0.674686	5.43E-09
	N	1020	1020	973	973	973	973	973	1018	1022
FIRST GEN	Pearson Correlation	-0.08964	0.008832	0.02342	0.062472	0.040981	-0.06946	-0.05073	0.012293	1
	Sig. (2-tailed)	0.00416	0.778143	0.46549	0.051404	0.201524	0.03027	0.113778	0.695242	
	N	1020	1020	973	973	973	973	973	1018	1022
HSLEAD	Pearson Correlation	-0.089	-0.03115	-0.00439	-0.01448	0.011259	0.02917	-0.01737	-0.12961	0.00396
	Sig. (2-tailed)	0.00579	0.334973	0.89457	0.661849	0.733771	0.37810	0.59967	5.73E-05	0.90227
	N	960	960	915	915	915	915	915	958	962
YEARLEAD	Pearson Correlation	-0.09958	-0.0723	0.04318	0.057836	-0.03218	-0.04962	-0.01061	-0.16038	0.02006
	Sig. (2-tailed)	0.00443	0.038936	0.22801	0.106294	0.369059	0.16594	0.767122	4.2E-06	0.56688
	N	815	816	781	781	781	781	781	815	817
HSAGED	Pearson Correlation	0.02288	-0.05413	-0.08901	-0.11752	-0.01023	0.06254	0.116199	0.28982	0.06972
	Sig. (2-tailed)	0.46807	0.085875	0.00570	0.000257	0.751183	0.05236	0.000302	6.4E-21	0.02671
	N	1008	1008	963	963	963	963	963	1006	1010
LEADMINOR	Pearson Correlation	0.00213	0.084955	0.01068	0.028324	0.057724	-0.01734	-0.06805	-0.00874	0.05762
	Sig. (2-tailed)	0.94574	0.006712	0.73945	0.377969	0.072193	0.58934	0.033985	0.78102	0.06595
	N	1017	1017	971	971	971	971	971	1015	1019

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
PRIOR OFFICERPOS.	Pearson									
	Correlation	0.181337	0.157997	-0.01274	-0.00129	0.038817	0.051201	-0.08215	0.084629	-0.01767
	Sig. (2-tailed)	6.36E-09	4.44E-07	0.692711	0.967975	0.228557	0.112131	0.010718	0.007151	0.574358
	N	1011	1011	964	964	964	964	964	1009	1013
LEADERSHIP COURSE	Pearson									
	Correlation	-0.15505	0.117502	0.015852	0.00396	0.020854	0.045054	-0.06988	0.018171	0.026613
	Sig. (2-tailed)	7.56E-07	0.000185	0.623374	0.902385	0.518262	0.16263	0.030214	0.564846	0.398185
	N	1008	1008	962	962	962	962	962	1006	1010
HS COMMUNITY SERVICE	Pearson									
	Correlation	0.236967	0.080363	0.02603	0.023165	-0.02449	0.012314	-0.02932	-0.0751	-0.06191
	Sig. (2-tailed)	2.2E-14	0.010543	0.419272	0.472287	0.447284	0.702426	0.362931	0.016988	0.048731
	N	1012	1012	965	965	965	965	965	1010	1014
HS COMMUNITY PARTICIPATION	Pearson									
	Correlation	-0.20432	-0.16743	-0.0217	-0.03596	-0.01	0.014386	0.045533	-0.03077	-0.0354
	Sig. (2-tailed)	1.74E-10	1.86E-07	0.512276	0.27752	0.762621	0.664027	0.169011	0.341731	0.273162
	N	958	958	914	914	914	914	914	957	960
CURRPAR	Pearson									
	Correlation	-0.03573	0.113426	-0.00558	0.000627	0.023231	-0.00455	-0.0137	0.009984	-0.01458
	Sig. (2-tailed)	0.262536	0.000361	0.86437	0.984699	0.477078	0.889173	0.675067	0.754445	0.64741
	N	985	985	939	939	939	939	939	984	987
CURRPART	Pearson									
	Correlation	-0.11301	-0.17025	-0.04098	-0.04224	-0.0013	-0.04475	0.114505	0.048272	0.011197
	Sig. (2-tailed)	0.002871	6.48E-06	0.290995	0.276389	0.973231	0.248755	0.003084	0.204369	0.76808
	N	694	694	666	666	666	666	666	693	696
YEAR IN COLLEGE	Pearson									
	Correlation	0.769524	0.030394	0.012199	0.020715	-0.01971	-0.00601	-0.00949	0.003532	-0.03092
	Sig. (2-tailed)	2.3E-197	0.336	0.706093	0.52192	0.542333	0.852725	0.76922	0.911077	0.327289
	N	1004	1004	958	958	958	958	958	1002	1006
ENROLLUF	Pearson									
	Correlation	0.517962	0.108858	0.064007	0.051592	-0.03584	0.036046	-0.08794	-0.05446	-0.075
	Sig. (2-tailed)	8.03E-71	0.000509	0.046378	0.108495	0.265024	0.262292	0.006158	0.083056	0.01669

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
	N	1016	1016	969	969	969	969	969	1014	1018
UFGPA	Pearson									
	Correlation	0.251911	0.08489	-0.18515	-0.19064	0.05966	0.037616	0.199968	0.05757	-0.09767
	Sig. (2-tailed)	6.12E-16	0.007232	8.2E-09	2.88E-09	0.065342	0.2455	4.53E-10	0.069075	0.001967
	N	1000	1000	955	955	955	955	955	998	1002
AGE	Pearson									
	Correlation		0.152826	0.030892	0.037866	-0.01334	0.006847	-0.05376	0.006839	-0.08964
	Sig. (2-tailed)		9.64E-07	0.336246	0.238465	0.678083	0.831256	0.094104	0.827636	0.004167
	N	1020	1018	971	971	971	971	971	1016	1020
GENDER	Pearson									
	Correlation	0.152826	1	-0.00969	-0.00696	0.029044	-0.00146	-0.01028	0.015721	0.008832
	Sig. (2-tailed)	9.64E-07		0.76298	0.828579	0.365965	0.963861	0.748945	0.616712	0.778143
	N	1018	1020	971	971	971	971	971	1016	1020
MARITAL	Pearson									
	Correlation	0.267914	0.09012	0.040249	0.039738	-0.01325	0.008652	-0.05865	-0.06613	-0.03614
	Sig. (2-tailed)	3.81E-18	0.00406	0.210879	0.216734	0.680485	0.788044	0.06817	0.035334	0.249572
	N	1015	1015	968	968	968	968	968	1013	1017
ETHNIC	Pearson									
	Correlation	0.030892	-0.00969	1	0.897403	-0.69515	-0.28531	-0.48043	-0.14781	0.023424
	Sig. (2-tailed)	0.336246	0.76298		0	1.2E-142	7.54E-20	7.59E-58	3.82E-06	0.465499
	N	971	971	982	982	982	982	982	969	973
WHITE	Pearson									
	Correlation	0.037866	-0.00696	0.897403	1	-0.42959	-0.5827	-0.53818	-0.18566	0.062472
	Sig. (2-tailed)	0.238465	0.828579	0		2.27E-45	2.32E-90	7.91E-75	5.79E-09	0.051404
	N	971	971	982	982	982	982	982	969	973
Other	Pearson									
	Correlation	-0.01334	0.029044	-0.69515	-0.42959	1	-0.08827	-0.08153	0.008466	0.040981
	Sig. (2-tailed)	0.678083	0.365965	1.2E-142	2.27E-45		0.005641	0.010596	0.792396	0.201524
	N	971	971	982	982	982	982	982	969	973
Hispanic	Pearson									
	Correlation	0.006847	-0.00146	-0.28531	-0.5827	-0.08827	1	-0.11058	0.139829	-0.06946
	Sig. (2-tailed)	0.831256	0.963861	7.54E-20	2.32E-90	0.005641		0.000518	1.25E-05	0.030278
	N	971	971	982	982	982	982	982	969	973

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
Black	Sig. (2-tailed)	0.094104	0.748945	7.59E-58	7.91E-75	0.010596	0.000518		0.00015	0.113778
	N	971	971	982	982	982	982	982	969	973
	Pearson									
LEADTRAIN	Correlation	0.016519	0.035625	0.012949	0.031882	0.02538	-0.03372	-0.03114	0.006562	0.026585
	Sig. (2-tailed)	0.599305	0.257049	0.687097	0.321226	0.429779	0.294156	0.332664	0.834838	0.397282
	N	1014	1014	970	970	970	970	970	1012	1016
	Pearson									
FACTOM	Correlation	0.001558	-0.1057	-0.0587	-0.05369	0.014844	0.073311	-0.00901	0.013559	-0.01552
	Sig. (2-tailed)	0.960401	0.000731	0.067233	0.094165	0.643754	0.0222	0.779032	0.665968	0.620488
	N	1018	1018	973	973	973	973	973	1016	1020
	Pearson									
PRIORLEV	Correlation	0.021294	0.008752	0.040819	0.043207	-0.01374	-0.02242	-0.02954	-0.02663	0.004798
	Sig. (2-tailed)	0.555976	0.808659	0.269726	0.242675	0.710442	0.544458	0.424595	0.461386	0.89432
	N	767	768	733	733	733	733	733	767	769
	Pearson									
PRIOROFF	Correlation	-0.05922	-0.13466	0.044496	0.051605	-0.02273	-0.07363	0.011823	-0.05955	-0.00308
	Sig. (2-tailed)	0.141399	0.000775	0.279752	0.209924	0.580928	0.073416	0.774058	0.139225	0.939037
	N	618	620	592	592	592	592	592	618	620
	Pearson									
UFYEAR	Correlation	-0.06712	-0.09329	-0.03757	-0.06841	0.009682	0.065481	0.023139	-0.00221	0.08833
	Sig. (2-tailed)	0.163715	0.052957	0.446975	0.165735	0.844666	0.184672	0.639562	0.963499	0.066314
	N	432	431	412	412	412	412	412	431	433
	Pearson									
UFLEVEL	Correlation	-0.08989	-0.11117	-0.06587	-0.10472	0.001503	0.093784	0.050934	0.018799	0.106548
	Sig. (2-tailed)	0.084658	0.033006	0.216324	0.048977	0.977522	0.078039	0.339301	0.719274	0.040522
	N	369	368	354	354	354	354	354	368	370
	Pearson									
UFLEADER	Correlation	-0.0739	-0.08208	-0.05683	-0.08572	-0.05613	0.088185	0.063016	0.010046	0.064398
	Sig. (2-tailed)	0.1721	0.12979	0.305544	0.121848	0.311552	0.111462	0.255832	0.853139	0.233541
	N	343	342	327	327	327	327	327	342	344
	Pearson									
UFORG	Correlation	-0.0467	-0.10082	-0.03689	-0.06698	-0.02265	0.089968	0.016083	0.012595	0.047432
	Sig. (2-tailed)	0.307248	0.027351	0.432964	0.154177	0.630257	0.05542	0.732528	0.783364	0.299205
	N	480	479	454	454	454	454	454	479	481

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
CALSLEAD	Pearson Correlation	0.049095	0.00381	0.048543	0.070318	-0.00849	-0.04611	-0.05342	-0.13116	0.054479
	Sig. (2-tailed)	0.313189	0.937582	0.324482	0.153234	0.863224	0.34932	0.278203	0.006973	0.262438
	N	424	425	414	414	414	414	414	422	425
CALSMEM	Pearson Correlation	0.044215	0.00965	0.061557	0.096261	-0.00273	-0.06692	-0.07532	-0.13093	0.075547
	Sig. (2-tailed)	0.410928	0.857434	0.255551	0.07501	0.959758	0.216388	0.163999	0.014803	0.159048
	N	348	349	343	343	343	343	343	346	349
CALSYEAR	Pearson Correlation	0.051606	0.01748	0.047973	0.07383	-0.01456	-0.04858	-0.05183	-0.12072	0.045966
	Sig. (2-tailed)	0.291935	0.720943	0.331966	0.13511	0.768517	0.325896	0.29453	0.013629	0.347363
	N	419	420	411	411	411	411	411	417	420
High school activities	Pearson Correlation	-0.08079	0.033373	0.006672	0.023744	0.07619	-0.02029	-0.07276	-0.11885	-0.00165
	Sig. (2-tailed)	0.013321	0.307246	0.842098	0.478297	0.022715	0.544664	0.029606	0.000268	0.959786
	N	938	938	894	894	894	894	894	936	940
HAD A ROLE MODEL	Pearson Correlation	-0.0983	-0.01657	-0.01728	-0.03516	-0.0147	0.042415	0.018379	-0.02338	0.116291
	Sig. (2-tailed)	0.001762	0.598983	0.592333	0.275659	0.648723	0.188468	0.568917	0.458434	0.000209
	N	1010	1010	963	963	963	963	963	1008	1012
Office in College	Pearson Correlation	0.203125	0.020227	-0.05993	-0.07908	0.015456	0.041451	0.062154	-0.09665	-0.02903
	Sig. (2-tailed)	6.65E-11	0.519977	0.062089	0.013758	0.630663	0.197091	0.052971	0.002085	0.355273
	N	1014	1014	970	970	970	970	970	1012	1016
FACTIM	Pearson Correlation	0.015356	-0.11	-0.03183	-0.01223	0.025215	0.039361	-0.04297	0.012493	0.000518
	Sig. (2-tailed)	0.624584	0.000438	0.321238	0.703253	0.432082	0.219942	0.180506	0.690815	0.986829
	N	1018	1018	973	973	973	973	973	1016	1020

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
FACT2M	Pearson									
	Correlation	-0.01977	-0.06272	-0.0717	-0.07306	0.008255	0.090744	0.006543	0.003787	-0.03577
	Sig. (2-tailed)	0.528594	0.045446	0.025319	0.022654	0.79704	0.004614	0.838493	0.904027	0.253659
	N	1018	1018	973	973	973	973	973	1016	1020
Table D-1 Continued.										
FACT3M	Pearson									
	Correlation	0.019124	-0.04735	-0.02026	-0.0117	0.004068	0.056669	-0.04578	0.000376	-0.02333
	Sig. (2-tailed)	0.542209	0.13109	0.527891	0.715399	0.89916	0.07726	0.153587	0.990461	0.456671
	N	1018	1018	973	973	973	973	973	1016	1020
FACT4M	Pearson									
	Correlation	0.017121	-0.14429	-0.07112	-0.07742	0.018974	0.060576	0.036793	0.055709	-0.00471
	Sig. (2-tailed)	0.585316	3.8E-06	0.026533	0.015708	0.554423	0.05891	0.251554	0.075915	0.880607
	N	1018	1018	973	973	973	973	973	1016	1020
FACT5M	Pearson									
	Correlation	-0.01695	-0.12818	-0.07076	-0.06993	0.013195	0.07823	0.011325	0.000162	0.000711
	Sig. (2-tailed)	0.589153	4.1E-05	0.027298	0.029164	0.681016	0.014654	0.724234	0.995875	0.981904
	N	1018	1018	973	973	973	973	973	1016	1020
GREW	Pearson									
	Correlation	0.006839	0.015721	-0.14781	-0.18566	0.008466	0.139829	0.121507	1	0.012293
	Sig. (2-tailed)	0.827636	0.616712	3.82E-06	5.79E-09	0.792396	1.25E-05	0.00015		0.695242
	N	1016	1016	969	969	969	969	969	1018	1018
FAMILY	Pearson									
	Correlation	0.042861	0.03548	-0.04509	-0.06039	0.000847	0.042962	0.043836	0.013171	-0.18118
	Sig. (2-tailed)	0.171373	0.257593	0.159878	0.059701	0.978949	0.180571	0.171857	0.674686	5.43E-09
	N	1020	1020	973	973	973	973	973	1018	1022

Table D-1 Continued.

		AGE	GENDER	ETHNIC	WHITE	Other	Hispanic	Black	GREW	FIRST
FIRST	Pearson									
	Correlation	-0.08964	0.008832	0.023424	0.062472	0.040981	-0.06946	-0.05073	0.012293	1
	Sig. (2-tailed)	0.004167	0.778143	0.465499	0.051404	0.201524	0.030278	0.113778	0.695242	
	N	1020	1020	973	973	973	973	973	1018	1022
HSLEAD	Pearson									
	Correlation	-0.089	-0.03115	-0.00439	-0.01448	0.011259	0.029172	-0.01737	-0.12961	0.003964
	Sig. (2-tailed)	0.00579	0.334973	0.894574	0.661849	0.733771	0.378101	0.59967	5.73E-05	0.902276
	N	960	960	915	915	915	915	915	958	962
YEARLEAD	Pearson									
	Correlation	-0.09958	-0.0723	0.043185	0.057836	-0.03218	-0.04962	-0.01061	-0.16038	0.020063
	Sig. (2-tailed)	0.004434	0.038936	0.228014	0.106294	0.369059	0.165941	0.767122	4.2E-06	0.566885
	N	815	816	781	781	781	781	781	815	817
HSAGED	Pearson									
	Correlation	0.02288	-0.05413	-0.08901	-0.11752	-0.01023	0.062541	0.116199	0.289825	0.06972
	Sig. (2-tailed)	0.468079	0.085875	0.005708	0.000257	0.751183	0.05236	0.000302	6.4E-21	0.026713
	N	1008	1008	963	963	963	963	963	1006	1010
LEADMINOR	Pearson									
	Correlation	0.002137	0.084955	0.010686	0.028324	0.057724	-0.01734	-0.06805	-0.00874	0.057625
	Sig. (2-tailed)	0.945743	0.006712	0.739456	0.377969	0.072193	0.589344	0.033985	0.781022	0.06595
	N	1017	1017	971	971	971	971	971	1015	1019

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BIOGRAPHICAL SKETCH

Bryan Patterson is a native of Lynchburg Virginia. Bryan has been at UF for the past nine years. He began career as an assistant director in career services at the Career Resource Center at UF where he was a career liaison to the athletic program. Bryan has served as the Career Counselor and CHAMPS/ Life Skills Coordinator for the University of Florida. In this position, he provided student-athletes career counseling and advising. He also serves as a mentor and manages all of the community service outreach. He coordinates the five developmental area of the NCAA CHAMPS/Life Skills program and co-facilitates three undergraduate courses through the college of education that are geared career and personal development. Additionally, he also advised the UF's Student Athlete Advisory Committee and serves as an advisor to other student groups on campus. Bryan has served as a NCAA CHAMPS/Life Skills orientation team leader and servers a volunteer mentor to new Life Skills coordinators. Prior to working at UF, Bryan worked at James Madison University where he worked in career development and student activities.

Patterson received his undergraduate degree in psychology and master's degree in education from James Madison University. Currently, he is completing his doctoral degree in Agricultural Educational Leadership and Communication from the University of Florida. As of August 2008, Bryan will assume a teaching position at the University of Tennessee as an Assistant Professor of Agricultural Leadership Education and Communications.