

DESCRIBING THE READINESS FOR RETENTION OF STUDENTS OF COLOR AT
STATE AND LAND-GRANT COLLEGES OF AGRICULTURE

A Dissertation

by

DANIELLE ALEXANDER HARRIS

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2006

Major Subject: Agricultural Education

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ABSTRACT

Describing the Readiness for Retention of Students of Color at State and Land-Grant
Colleges of Agriculture. (December 2006)

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Current demographics indicate that populations of color are on the rise across the United States. Although enrollments of students of color are increasing, first year retention rates are lower compared to their peers. Consequently, systemic changes are needed to produce changes in services and programs required by these students. Despite the modest gains in enrollment, students of color remain underrepresented at every degree level in higher education. Despite volumes of research, institutions still disregard the seriousness of the problem and continue to address retention with isolated programmatic approaches to change administrative, instructional, and advising practices with little evaluation.

The purpose of this study was to develop an instrument assessing the organizational readiness of state and land-grant universities to retain students of color in colleges of agriculture as well as determine what definitions of retention were used to support existing retention programs and services. Since state and land-grant institutions previously engaged in retention strategies, an *ex post facto* study was conducted.

A census of the population was conducted, where close to half of the population responded and expressed interest in seeing study results. State and land-grant colleges were selected as participants due to their unique inability to reach higher than average retention rates of students of color, specifically in agricultural fields. Statistical tests such as t-tests and analysis of variance were used to analyze data and further refine the instrument. Reliability for each of the instrument scales was high. However, further refining must be done before the instrument will more precisely indicate where gaps are in each readiness area in colleges of agriculture.

This study determined that more information is needed on which definitions of retention are used to support programs and services within the college. Further investigation should be done to ascertain why more organizational diagnostic assessments are not done in this area considering the fiscal impacts on priorities such as retention. Although respondents indicated satisfaction with the college of agriculture to meet the academic needs of students, departmental administrators and faculty were still unclear of their role with retention. These findings indicate more research in this area should be conducted.

DEDICATION

I dedicate this dissertation to all the frontline warriors of retention – advisors, faculty mentors, and program coordinators. You should know all your efforts are making a difference – I made it and others are coming.

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I would like to thank the following people for their support and encouragement to further my dream:

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CHAPTER I

INTRODUCTION

Current demographics indicate that populations of color are on the rise across the United States. The United States Bureau of the Census indicates increases in all diverse populations. Hispanic and Asian populations will triple over the course of the next ten to twenty years (U. S. Bureau of the Census, 2004). These statistics provide a picture of a more diverse national population. Carnevale and Fry (2000) suggest this change will reflect in the 18 to 24 year old age group being predominantly of color. In a report on the usage of Pell Grants funding the education of many students, Kipp (1998) suggests the highest growth among the populations of traditional college age students will be more likely to drop out of high school, less likely to enroll in college and least likely to persist to earn a baccalaureate degree. Swail (2002) confirms these students will have drastically different academic and social needs than current students in the higher educational pipeline. With an increase in general population, an increase in enrollments of students of color has occurred (Landry, 2002). According to the Consortium for

This dissertation follows the style of the *Journal of Agricultural Education*.

Student Retention Data Exchange report (2004), although enrollments of students of color are increasing, their first year retention rates are lower compared to their peers. Consequently, systemic changes will be needed to produce these changes in services and programs required by these students.

Because of poor academic preparation of these students and other factors, the likelihood of these students enrolling in four-year institutions, compared with that of their counterparts, is very low (Gladieux & Swail, 1999). Despite the modest gains in enrollment, students of color remain underrepresented at every degree level in higher education (Collison, 2000). The more attractive alternative is the community college, where a large %age of students of color are enrolled (Mow & Nettles, 1990). These students are at higher risk to not participate in higher education, but at an even higher risk of not being successful. In an era of increasing income inequality, strengthening and broadening educational opportunities is key not only to economic growth, but also to narrowing the gaps between rich and poor (Gladieux & Swail, 1999). In order for this generation of students of color to survive economically in this changing society, attaining degrees at four-year institutions is necessary. Although community college degrees are beneficial, they do not provide the same economic benefits as four-year degrees (Gladieux & Swail, 1999).

The retention of students of color becomes a paramount issue considering the high attrition rate at four-year institutions and the economic prosperity that is dependent on obtaining a baccalaureate degree. Institutions who consider retention of students not a priority are neglecting to considering the economic impacts to three players including

students (and their families), the institutions themselves (and their auxiliary units), as well as industries and governments representing society as a whole (Hagedorn, 2005; Tinto, 2005). The economics for institutions support finding solutions for student attrition since the institution, its academic units, and auxiliary units like bookstores and residence halls or restaurants lose money when students drop out. This loss of money comes from links between state grants and student success, fees not collected from students who drop out, and up-front recruitment costs colleges used to enroll the best high school graduates (Tinto, 2005). High attrition rates can also impact recruitment from the supply of students from bad public relations as well as internal morale issues (Swail, 2004). Significant savings can be recouped by reducing dropout rates by even a small %age (Hagedorn, 2005; Swail, 2004).

High attrition rates are attributed to unique problems students of color experience, such as feelings of academic shock or feeling uncomfortable or feeling out of place on predominantly White campuses (Aguilar, 1996; Chenoworth, 1999; Flowers, 1998; Kunkel, 1994; Landry, 2002; Rendón, 1992; Rinn, 1995). Consequently, a large concentration of students of color choose community colleges and are not transferring into four-year degree programs, resulting in dissimilar departure rates (Braxton, Hirschy, & McClendon, 2004; Lang, 2001).

Students who find compatible academic and social groups are more likely to persist (Landry, 2002; Tinto, 1993), and, thus, are retained at the institution. According to Arrington (1996), student retention programs at state colleges and universities do improve comfort levels for students of color. Based on this knowledge, retention

programs that encourage the student to engage with the institution and other students provide a significant solution to the attrition problems state and land-grant institutions face. In a report on student retention, Swail, Redd, and Perna (2003), maintain that regardless of what knowledge or assessments an institution engages in, identification of successful organizational and planning strategies is vital to institutions interested in fostering systemic change. Researchers support further examination of the influence of policies and day-to-day practices, allocations of funds, institutional commitment, and the range of available services to students (Braxton & Hirschy, 2005). Resources, in particular, play an important role as institutions who have the funding can provide needed support services to engage students and are able to implement almost any strategy in the retention debate (Swail, 2004).

There are several examples of model programs and listings of contributing factors to success with student retention. Despite volumes of research, institutions still disregard the seriousness of the problem and continue to address retention with isolated programmatic approaches to change administrative, instructional, and advising practices with little routine program evaluation (Arrington, 1996). However, if institutions will not take advantage of the research to properly prime college campuses for retention, money will continue to be spent on ineffective programs and contribute to dividing and deteriorating campus climates (Chenoweth, 1999). To reverse this trend of high attrition rates and deterioration of campus climates supporting students of color, state and land-grant institutions must move past simply recruiting students to find ways to retain them. Arrington (1996) speaks of the issue of retention of students of color, and suggests

institutional change is required to reform campus cultures to support diversity, to convert learning environments to learning focused rather than teaching-centered, and to translate access into success.

The American Association of State Colleges and Universities (AASCU) and the National Association of State Universities and Land-grant Colleges (NASULGC) assert in their mission statements that institutions provide quality education to their state residents. Given the commitment to providing quality education stated in their missions, state and land-grant colleges (AASCU & NASULGC, 2005) face a unique challenge to matriculating students if appropriate strategies are not matched with the needs of this new cohort and of those students already in the pipeline. According to the AASCU and NASULGC joint report on diversity, change must happen from the inside out, and although their members have made strides toward reaching a more diverse and welcoming climate, more is still left to do (AASCU & NASULGC, 2005). The report goes further to state that assumptions cannot be made that faculty and staff, know what needs to be done. This supports the contention that systemic change is needed within state and land-grant schools to meet the needs of diverse students.

Institutions which take the time to understand the contributing factors attain commitment from the highest levels of administration, and provide a locally-based and managed implementation of retention strategies within academic units can positively affect the retention problems on their campus (Arrington, 1996; Clewell & Ficklen, 1986; Landry, 2002; Swail, 2004;). Lang (2001) identified these same factors as being significant for influencing retention of students of color at predominantly White

institutions. While these efforts improve retention rates, they do not have the same effect on graduation rates unless the campus is willing to change teaching and learning practices (Arrington, 1996; Richardson & Skinner, 1991). However, most state and land-grant institutions do not integrate key academic and social conditions into systemic approaches that would improve retention and graduation rates of students color (Arrington, 1996). Those key academic and social conditions include establishing peer relations and developing role models and mentors for both the academic and social integration of students (Swail, 2004)

The assessment of institutional policies, practices, and activities should transpire to identify those that hinder the social and academic integration of students (Braxton & Hirschy, 2005). This assessment must include determining how retention is defined. By first defining retention, the university sets a standard for the manner in which individual colleges view retention. A difference between how colleges of agriculture view retention and how their departments view retention, however, can alter the strategies implemented to retain students. Faculty involvement from academic units is a substantial factor in retaining students of color (Kuh, Kinzie, Schuh, & Whitt, 2005; Lang, 2001; Noel, Levitz, & Saluri, 1985). The question remains, why are not faculty involved in retention programs within the college of agriculture? Investigating requirements for retention and unearthing best practices for retention may assist institutions of higher education in deciding upon cost-effective measures with regard to retention practices. In addition, knowing whether the institution is prepared to engage in retention activities may also allow for wise investments in programs and services that will attain higher success.

Statement of the Problem

State and land-grant colleges must find ways to retain and graduate students of color in a cost effective, campus-wide effort (Glennen, Farren & Vowell, 1996). Students of color are a virtually untapped pool of resources (Mullinix, Garcia, Lewis-Lorentz, & Qazi, 2003) to fill the shortage of professionals needed by the agricultural industry. Since colleges of agriculture spend a great deal of time, energy and financial resources on recruitment (Washburn, Garton, & Vaughn, 2002), it is even more pressing need to determine how best financial and other resources should be used for retention once students enter the educational pipeline. Emphasis on retention is especially crucial since not every retention policy fits every institution (Landry, 2002; Tinto, 1993). Institutions must find a retention policy and tailor it to suit the needs of its campus. Improved and effective retention policies will lead to better use of resources as the needs of target populations are met, fostering a more supportive social community for all students (Caison, 2004).

Invoking some type of change at an individual, departmental, or system level requires attention that is positive and intentional (Simpson, 2002). To achieve this type of systemic change, institutions must determine if they are prepared to engage the retention process. Retention should be identified as a priority to determine whether institutions are prepared to engage in activities that measure effectiveness they are at meeting their stated mission. For some universities, making retention a priority and making the necessary adjustments to current initiatives will require significant organizational change.

At this time, the focus of the literature regarding retention of students in agriculture at all institutions is on student predictors and little is known about the institutions themselves. General retention literature across all disciplines discusses institutional characteristics such as high level of administrative commitment, strategic planning and assessment, and commitment to student success (Arrington, 1996; Lang, 2001). Kuh et al. (2005) supplements this list with faculty involvement, campus-wide shared responsibility, comprehensive services such as counseling and recruitment. Lang (2001) describes similar attributes and contends that dedicated staff and faculty support, and the presence of a well-defined student of color specific retention policy are also essential elements.

Professional associations like the American Council on Education and a joint effort between the AASCU and NASULGC, have produced standards or key elements of retention programs for diverse populations. However, little research has been done to determine if these elements were used by individual institutions in their efforts to retain students of color. State and land-grant colleges and universities have been noted as having the largest need for retaining students of color (AASCU & NASULGC, 2005).

Purpose and Significance of Study

The discrepancy between the desired state and the status quo of state and land-grant institutions is addressed in the literature. The report published by the NASULGC and AASCU detail where state and land-grant institutions desire to be with diverse populations and their current state with retention of those populations. The Kellogg

Commission (2001), in a report on the future of land-grant universities, delineates seven recommendations to improve campus conditions, two of which are an increased focus on student success and diversity. The public has become frustrated with land-grant institutions' unresponsiveness, as evidenced by consistently low enrollment rates, shortages of workers for the agricultural labor force, low participation by persons of color in agriculture, and a disconnect between institutional commitment and the programs and services offered to students (Kellogg Commission, 2001). These challenges demonstrate that administrators, faculty, and staff appear to struggle in translating these reports and recommendations into actions on their campuses.

Examining the state of preparedness of state and land-grant institutions for retention of underrepresented groups can shed light on the status of achieving the goals set by professional organizations like AASUC and NASULGC, not to mention the institutions themselves. A lack of information regarding readiness for retention exists as evidenced by the void in the literature. The change process requires that readiness be achieved at all three levels: system, departmental, and individual (Schmuck & Runkel, 1994). Determining readiness benefits the institutions because it assists in evaluating programs and preempts the likelihood of resistance to systemic changes the institutions strive to make (Armenakis, Harris, & Mossholder, 1993). This resistance resides in attitudes of organizational members and for systemic change to be successful should be examined prior to implementation (Rogers, 2003; Simpson, 2002).

Readiness is the beginning of the change process and helps to improve chances of success with systemic change efforts because increasing readiness reduces resistance

by examining attitudes and beliefs. By addressing the issue of readiness, institutions identify needed support, energy, and inspiration within the institution that are essential to the organization (Amernekis et al., 1993). The institution is in a more proactive role with the change because it sees a need for progress and is aware of the discrepancy between the desired state and the status quo. Additionally, it becomes possible for communication of the discrepancy to be more accurate within the system, allowing for more discussion about the problem. This is needed for resolution to occur (Armenakis et al., 1993; Katz & Kahn, 1978).

Outside contextual factors such as economic need for degree attainment for students of color, political pressure from state legislatures and families, as well as the need to keep agricultural programs competitive, all dictate the legitimacy of establishing the readiness for change for retention (Kellogg Commission, 2001; Pettigrew, 1987). Knowledge of the change process applies to aspects of higher education as it explains certain behavioral phenomena and organizational experiences. Change literature provides a basis for understanding the behavior of the administration and lays the framework for developing strategies to move forward. By analyzing the change process, administrators can anticipate the next steps for planning solutions that best accommodates the campus' needs.

Research Questions

The following research questions will guide this study:

1. What definitions of retention do colleges of agriculture use to support programs and services to retain students of color?
2. Are retention “best practices” preconditions for success at state and land-grant colleges of agriculture?
3. What is the readiness level of colleges of agriculture to retain students of color?

Study Objectives

Based on the literature, I propose to describe in this study:

1. Develop an instrument to describe the level of organizational readiness for retention within colleges of agriculture
2. Determine how college of agriculture administration define retention to support programs and/or services
3. Determine how satisfied are college of agriculture administrators with retention programs and/or services
4. Assess college of agriculture administrator’s perceptions of motivational readiness for retention at state and land-grant colleges of agriculture
5. Assess college of agriculture administrator’s perceptions of resource readiness for retention at state and land-grant colleges of agriculture
6. Assess college of agriculture administrator’s perceptions of staff attribute readiness for retention at state and land-grant colleges of agriculture

7. Assess college of agriculture administrator's perceptions of organizational climate readiness for retention at state and land-grant colleges of agriculture

Definition of Terms

To assist in clarifying the issue, I offer the following definitions of terms found in the literature to shape the study:

Retention

The institution's ability to retain students from first year until graduation within a six year time period; otherwise known as persistence rates (Kuh et al 2005). The literature shows the need for academic and social integration to happen in order for students to matriculate to the next semester and/or year (Landry, 2002).

Attrition

Student departure from an educational institution due to lack of fit or incongruence, voluntary withdrawal, academic dismissal, or transfer; a failure to reenroll at an institution in consecutive semesters (Berger & Lyon, 2005).

Academic Integration

Measured by such variables as grades, intellectual development and contacts with faculty (Pascarella & Terenzini, 1991)

Social Integration

Measured by such variables as extracurricular involvement and informal interaction with peers and faculty (Pascarella & Terenzini, 1991)

Underrepresented Groups

Underrepresented groups means students of color with limited participation in agricultural fields at predominantly white institutions (Bowen, Gonzales, Norland, Schmuaker, Vaughn, & Whent, 1991) and remain “underrepresented” at each degree level due to low enrollment (Landry, 2002). Asians and international students will not be considered in this definition.

Students of Color

Refers to ethnic or racial student groups

People of Color

People of origin from the following groups: African American, Hispanic, Native American, Asian and unspecified individuals whose origin is other than European American or Caucasian.

State Universities or Colleges

For the purposes of this study, these colleges or universities are defined as those accredited institutions offering bachelors, master and/or doctoral degrees and wholly or partially state funded or controlled (AASCU, n.d.).

Land-grant Universities or Colleges

This study will focus on those institutions established by the Morrill Act of 1862 and created by state legislatures or Congress for the purpose of educating citizens on the benefits of agriculture and mechanics (Land-Grants, n.d.).

Retention Standards

Set of essential criteria that contribute to the institution's ability to retain students academically and socially in a college setting. Those factors include but are not limited to: faculty involvement, leadership from top down and from within the ranks, mentoring at all levels, defined target population, high level of institutional commitment, comprehensive student services, supportive network of persons of color, allocation of sufficient resources, periodic reports to president and governing boards and incentives for faculty and staff (American Council on Education, 1988; Landry, 2002; Lang, 2001).

Readiness or Change Readiness

Readiness refers to the reflection of the beliefs, attitudes, and intentions of an organization's members regarding the extent to which changes are needed and the organization's capacity to successfully make those changes (Armenakis, Harris & Mossholder, 1993).

Resistance to Change

Resistance to change is the behavior or actions individuals take based on their attitudes or beliefs that restricts the implementation of a change within an organization. Burke (2002) discusses resistance to change occurring at the individual level where individuals experience a loss, lack of choice, freedom restrictions or imposition of change within the organization.

Readiness Factors

Lehman, Greener & Simpson (2002) identified a set of four factors that influenced readiness for change: motivational readiness by the leader and staff members, personal staff attributes, organizational climate, and institutional resources. Readiness can be assessed using survey research methodologies (Fox, Ellison & Keith, 1988; Pond, Armenakis & Green, 1984).

Change Process

The target of the [systemic] change is the organization (Burke, 2002) because the changes seek to alter the cultural norms and not the individuals. Based on this premise, for retention to be institutionalized a systemic change must occur, thus this study functions off the change model that Armenakis, Harris & Field (1999) developed.

Student Success

The effective usage of services, programs, and other resources available through the institution to attain a degree outside of academic excellence (Kuh et al., 2005)

Motivational Readiness

Sources of motivation (e.g.: program needs or pressures for change) that influence behaviors within individual departments and the college of agriculture with a result of reaching desired retention outcomes.

Resource Readiness

Resources (e.g. adequacy of facilities, funding, staffing levels etc.) within individual departments and the college of agriculture that assist in achieving program goals for retention.

Staff Readiness

Staff attributes (e.g., professional growth, efficacy or confidence in abilities, funding, influence over decisions, orientation or direction of the department, etc.) within departments and the college of agriculture that assist in achieving retention goals.

Organizational Climate Readiness

The climate for acceptance of changes regarding retention within the department (e.g. clarity of mission, autonomy with decisions, openness of communication, adaptability to change etc.).

Persistence

The desire and actions of a student to stay at an institution of higher education from the first year to completion of the baccalaureate degree (Berger & Lyon, 2005).

Theoretical Base for the Study

The theoretical base for this study was derived from a review of related literature addressing retention of students of color, organizational readiness, and readiness for instructional technology. This study was intended to raise the importance of retention of students of color to the administration of colleges of agriculture at state and land-grant institutions as well as demonstrating that organizational development techniques can be applicable to higher education environments seeking to guide institutional change efforts. Research into retention literature reveals that not much has changed with

knowledge on attrition of students of color (Lang, 2001), and that colleges have spent years developing intervention programs and services to help students become integrated (Landry, 2002; Seidman, 1996).

What has changed is that money and other resources are still poured into programs and services that do not curtail the attrition of students of color. Studying the differences between espoused retention efforts and actual retention activities may provide insight into the readiness level of state and land-grant institutions. Kuh et al. (2005) studied institutions having higher than average retention rates and found institutions with smaller gaps between espoused efforts and actual activities had higher retention rates and greater emphasis on student success. In this study, the National Survey of Student Engagement (NSSE) was administered to participating institutions interested in assistance with institutional improvement, educational practice benchmarking, and documenting institutional effectiveness and accountability to the public.

Using assessments like the NSSE or readiness instruments can assist institutions in determining root causes of low retention rates with students of color. Assessing readiness helps to avert disasters like losing funding, while providing a clear sense of reality that keeps the organization from regressing (Rothwell & Sullivan, 2005). This can be achieved by connecting assessments and the change process with the identity of the institution to promote needed organizational discovery (Kezar, 2001). This organizational discovery allows individuals as well as the overall organization to become aware of inconsistent behaviors. Consistency between behavior dictated by culture and

organizational policies is a contributing factor to achieving success according to the change models (Burke, 1994). Kuh et al. (2005) confirmed consistency between actions and policies as a contributing factor to high retention rates.

Synthesizing elements of organizational behavior and organizational change theory may provide a foundation for understanding readiness for change in higher education (Kezar, 2001). Institutions can avoid costly mistakes by becoming aware of readiness and other related steps in the change process before plunging ahead with new programs or policies (Kotter, 1996). Institutions have a stake and a responsibility to ensure more students who arrive on their campus persist to complete degrees (Gladieux & Swail, 1999). More attention and institutional change is needed with regard to retention of students of color (Gladieux & Swail, 1999; Landry, 2002; Lang, 2001; Swail, 2000). That change process begins with determining whether we are prepared to engage in retention activities. Increases in the retention of students of color results from expanded services and team-work, as well as receiving positive fiscal implications (Glennen et al., 1996).

Assumptions

1. Cooperating participants in the study report honest and accurate information
2. Participants have participated in and have some prior experience with student programs and services
3. Participants are in a position to make decisions regarding services and programs provided to students on campus in the college of agriculture

4. Reliability from the Lehman et al. study is legitimate and estimates are based on scholarly research methods
5. Relationships between each scale on the instrument are as reported in the Lehman et al. (2002) study

Limitations

1. This study focuses on land-grant institutions; therefore, results from this study cannot be generalized to all higher education institutions.
2. Subject responses regarding retention of students of color are based in personal perception and exposure to actions and behaviors of the institution as a whole.
3. This study investigated only motivational readiness, organizational climate, resources, and staff attributes in assessing readiness for retention.
4. Wording in the instrument developed for this study may result in potential response bias.
5. This instrument, similar to that of Lehman's et al. (2002) instrument, offers assistance in diagnosis of situations when change does not occur and identifying barriers, not necessarily solutions.
6. Target population does not include all land-grant institutions, rather only those that are created by the Morrill Act of 1862.

Delimitations

Retention literature often references recruitment goals or strategies as part of a comprehensive set of standards. At times it is difficult to separate recruitment from retention; however, this study will pursue only readiness issues that pertain to retention. Further study may be done with readiness for recruitment of underrepresented groups at another time.

CHAPTER II

LITERATURE REVIEW

The characteristics of traditional-age college students in the future will be drastically different than students currently in the educational pipeline. National demographics reflect increases in populations of color (U. S. Bureau of the Census, 2004). The volume of students of color is not the only difference higher education institutions will face. The most rapid growth of traditional-age college students will be among groups less likely to enroll in college, more likely to drop out of school, and least likely to persist to earn a baccalaureate degree (Kipp, 1998). Little research has been done to determine whether institutions are prepared to serve matriculated students with a cadre of services and programs tailored to the specific needs of this new generation. More information must be attained to effectively use college and departmental resources to develop services and programs offered to support student matriculation. These service areas and programs generally consist of academic intervention strategies, tutoring, mentoring, pre-college programs, bridge programs, academic advising.

The literature recommends support areas, such as climate assessment and counseling, be considered. Concern regarding the efficient use of public funds by state legislators necessitates updated and supplemental information on retention efforts (Caison, 2004). This concern is rooted in the lack of retention program evaluations and accountability within higher education. Additionally, to assist in raising low participation rates by students of color in colleges of agriculture (Bell, 1997; Mullinix, Garcia, Lewis-Lorentz, Qazi, 2003) and to fill the shortage of workers needed for the

agricultural industry (Goecker, Whatley, & Gilmore, 1999), more must be known about how universities can retain students from the time of admittance through graduation.

Several studies have placed high monetary values on student retention (Dyer, Lacey, & Osborne, 1996; Garton, Ball, & Dyer, 2002; Glennen, Farren, & Vowell, 1996). Many students invest considerable money and time into earning a college degree. Likewise, institutions have invested significant funding into recruiting and retaining students because of the economic impacts a degree can have on the future of students (Washburn, Garton, & Vaughn, 2002). According to Swail (2002), individuals with bachelor's degrees earn twice that of high school graduates and those with professional degrees earn twice that of those with bachelor degrees. Changing student demographics in higher education emphasize the importance of recognizing the needs of the new cohort of entering students. Colleges of agriculture now face the most important challenge of recruiting and matriculating a new generation of students who are of high caliber and academically prepared to function in a rapidly changing agricultural industry (Ball, Garton, & Dyer, 2001).

Organizational readiness, with regard to retention, means defining the beliefs, attitudes, and intentions regarding changes needed for high retention rates and the institution's capacity to make necessary changes. Based on published research, those areas are (1) organizational readiness theory, (2) change process models, (3) readiness areas identified in benchmark retention research, and (4) retention models (Armenakis, Harris, & Mossholder, 1993; Kuh, Kinzie, Schuh, & Whitt, 2005; Lehman, Greener, & Simpson, 2002). The American Council on Education's standards for retention programs

have also provided a foundation for assessing the effectiveness of retention programs (Green, 1989). The readiness areas identified in published research are resources, staff attributes, organizational climate, and motivation. By addressing these key areas, the readiness level of the colleges of agriculture can be determined.

The purpose of this chapter is to provide a comprehensive review of literature regarding organizational readiness and retention of students of color in agriculture related fields at state and land-grant institutions. Four sections have been allocated to discuss this issue: (1) change process models, (2) retention models, (3) barriers to retention in agriculture, and (4) readiness models and usage

Change Process Models

Daft (1998) defines change as “the adoption of a new idea or behavior by an organization (p. 291).” Systems theory states that when an organization adopts a new idea or behavior, an imbalance is created in the organization’s culture and forces new behaviors and/or structures to be created to restore this balance (Burke, 1994). This change is the impetus for leadership in an organization to initiate the change process and bring balance or equilibrium to the organization. This can happen by facilitating discussions to surface real strengths, issues and challenge beliefs held in the organization (Rothwell & Sullivan, 2005). Actions and decisions made by leaders can be in response to changes in the market place, government regulations, demographic changes, or funding, just to name a few. When making decisions that bring balance, leaders must recognize what they are dealing with (type of change) to start behaving appropriately

(readiness factors) so that the implementation of the change (process) goes as smoothly as possible (Struckman & Yammarino, 2003).

Change is wrought by external environment influences that change marketplace requirements for success (Rothwell & Sullivan, 2005). Organizations must be responsive to changes that take place in a society, since these changes affect all aspects of their operations (George & Jones, 2005; Rothwell & Sullivan, 2005). Many organizations struggle to realize when change is needed. Burke (1994) suggests that a clear sign change is needed is that the same kinds of problems recur. He further states that some form of organizational development may assist in recognizing root causes, rather than just treating the symptoms. Organizational readiness for retention implies that colleges of agriculture look at root causes for low retention rates in agriculture related fields, rather than simply implementing programs to treat the symptom of low retention rates. Assessing readiness also implies understanding the level of commitment, clarity of college mission with staff, work values of the college, vision, client identification (who does the college serve) and the capability of the college to manage retention of students of color (Rothwell & Sullivan, 2005). Administrators can gain an understanding of the level of staff commitment or what policy improvements are needed to achieve better results by performing readiness assessments.

To accommodate the imbalance between desired and current results due to pressures to change, an organization must bring about lasting change and require some kind of confrontation or process of reeducation in the direction of the desired change (Beckhard, 1967; Burke, 1994). Lewin (1951, 1958) discussed this type of change in a

simple model comprising three stages: unfreezing, movement, and refreezing.

Unfreezing is characterized by creating motivation and readiness to change. In this phase, members are not likely to embrace the change unless they experience a need to change or some dissatisfaction for current circumstances (Burke, 1994). A gap must be identified between the current state and the desired state in order for members to see they are not where they want to be.

Movement, the second stage, involves helping members to see their actions differently and react differently in the future (Burke, 1994). Schein (1980, 1987) and Burke (1994) discuss two means of accomplishing this: identifying role models exhibiting this behavior and scanning the environment for new relevant information that might help to move the organization forward.

The last stage, refreezing, helps organizations integrate the change personally and relationally by fitting new ways into the self-concept of the organization and assuring new behavior will bring about benefits if engaged (Burke, 1994). As a pioneer of change research, Lewin (1958) created a model that many researchers and change practitioners have used over time. Many researchers have adapted the model to fit new developments in change research and changing contexts.

One such adaptation is the Lippitt, Watson, and Westley (1958) model that expanded Lewin's three phases into five: awareness of a need for change, establishing a change relationship, working toward the change, generalization and stabilization of change, and achieving a terminal relationship. Considering that change is the objective, leadership of the organization and the change agent experience this process together

(Boone, Safrit, & Jones, 2002). Boone, Safrit, & Jones (2002) suggest that the “terminal relationship” implies an evaluative component for the organization to learn from the information gathered and the process itself (p. 27).

Similar to Lippitt, Watson, and Westley’s model, Kotter’s (1996) model pinpoints awareness as the beginning of the process toward making permanent change.

Kotter’s (1996) eight steps are

1. Establishing a sense of urgency with environmental realities,
2. Forming powerful coalitions which embrace a need for change,
3. Creating a vision to accomplish desired results,
4. Communicating vision,
5. Empowering others to act on the vision,
6. Generating short term wins,
7. Consolidating gains to produce more gains, and
8. Anchoring new approaches in organizational culture.

This model moves from just discussing the relationship and experience with the change agent to incorporating aspects of vision, orchestration of organizational procedures and empowerment, and recognition of achievements. All of these elements are important to effective change efforts within organizations (Trahan & Burke, 1996). These models are summarized in Table 1.

Table 1
Summary of Organizational Change Models

Organizational Change Models			
	Lewin's Three Stages	Lippit, Watson, & Westley	Kotter's Eight Steps
Initial Stage/Phase(s)	Unfreeze	Awareness of Need to Change Establishing a Change Relationship	Establish Urgency with Environmental Realities Forming Powerful Coalitions to Embrace Change Create Vision to Accomplish Desired Result
Second Stage/Phase(s)	Movement	Working Toward Change Generalization and Stabilization of Change	Communicate Vision Empower others to act on Vision Generate Short-Term Wins
Completion Stage/Phase(s)	Refreeze	Achieve Terminal Relationship	Consolidate Gains to Produce More Gains Anchor New Approaches in Culture

Retention Models

Vision, mission, and careful orchestration of procedures and structures are all areas that institutions of higher education struggle to manage daily. In retention literature, these aspects are examined for their impacts on the retention and attrition of students, particularly students of color. Economic, psychological, organizational, and sociological theories may be used to explain why students fail to re-enroll at an institution (Braxton & Hirschy, 2005). However, Tinto (1975) produced research that

contributed to the development of a model of student retention. Tinto's student integration model is based on Durkheim's Theory of Suicide (1951). The basic premise centers on individuals being poorly integrated into the shared structure of the institution. His aim was to clarify the effects of multifaceted interactions and individual psychological processes on student persistence in a higher education context (Swail, Redd, & Perna, 2003). With this model, Tinto's argument is that institutions that fail to integrate students academically and socially will fail to matriculate the student to graduation. For further information please refer to Swail, Redd, and Perna (2003) who adapted the model from Tinto (1975) and discuss its usage in greater detail

Bean and Eaton's (2000) psychological model enhanced Tinto's model by refocusing it from sociological to a psychological aspect. The purpose of Tinto's model is to help administrators visualize how individual psychological processes can be understood in the retention process (Bean & Eaton, 2000). The model shows how students' intentions to persist are influenced by their own attitudes and experiences with the institution. In addition to Ajzen and Fishbein's (1972, 1977) psychological theory, the model also incorporates background, organizational, environmental attitudinal, and outcome variables (Swail, Redd, & Perna, 2003). The focus of this model appears to be the academic and social integration of the student into the institution's culture and norms. Further description and details of this model in a research report on retention done by Swail, Redd, and Perna (2003).

Both models discuss the importance of the academic and social integration of the student into the campus structure as being indicators of student persistence or departure

(Eaton & Bean, 1995). One aspect these models do not incorporate is the cultural considerations for students of color (Rendón, Jalomo, & Nora, 2000; Swail, Redd, & Perna, 2003; Tierney, 1992). The focus of these two retention models is the integration into the institution's culture without giving consideration to the student's culture. Swail, Redd, and Perna (2003) contend that these two models ask for students of color to disassociate themselves from their own culture in order to become accepted into the institutional culture.

Retention literature identifies that the root causes for high attrition with students of color, specifically African-Americans and Hispanic students, lies in intrinsic and social problems adjusting the institution (Lang, 2001). Landry (2002) acknowledges that it is important to the success of the retention program and models to create an environment that is respectful of culture and motivates the students to stay enrolled considering the difficulty these students face during the transition to the college years. Tinto's (1975) model fails to incorporate the student's culture, critical for retention of students of color, into an institution's approach to retention.

Additionally, Tinto's (1975) model has very little empirically evidence relating to internal consistency across the fifteen propositions (Berger & Lyon, 2005). Braxton (2000) identified four out of the fifteen having logical interconnections: (1) student characteristics will impact initial commitment to the institution, (2) student's initial commitment impacts future commitments to the institution, (3) continued student commitment is facilitated by social integration, and (4) student is more likely to be retained if there is a greater commitment to the institution. Berger and Lyon (2005)

suggest that this social integration deserves greater attention, than academic integration, to understanding how to retain students. Examining social norms of state and land-grant colleges of agriculture to integrate students of color becomes a criterion of focus then for organizational readiness assessments for retention.

Despite this criticism, the concept of academic and social integration is widely supported (Allen, 1985; Allen & Wallace, 1988; Lee, 1999; Nettles, Gosman, Thoeny, & Dandridge, 1985; Pascarella, Smart, & Ethington, 1986; Terenzini & Wright, 1986). However, since the mission of state and land-grant institutions states that it is to serve the “people,” it is assumed that this means *all* people and not one group over another. Although both Tinto (1975) and Bean and Eaton’s (2000) model do not incorporate cultural aspects of the student, the foundation and focus of the study is of the agricultural academic unit’s integration of the student into its cultural norms and the usage of best practices and research on students of color and retention. These models are used to provide a context for the discussion of retention with agricultural units at state and land-grant institutions. The models are supplemented with research studies focused on aspects of retaining students of color which include cultural attitudes toward education and agriculture.

Both Tinto (1975) and Bean and Eaton’s (2000) retention models support this study because the mission of state and land-grant institutions assumes that students of color will be incorporated into the institutional culture. By not integrating these students, state and land-grant universities contribute to student attrition. Little research information exists to substantiate how state and land-grant universities are integrating

students. Even less information was located to describe the conditions state and land-grant institutions create to encourage success for students of color. The American Association of State Colleges and Universities and the National Association of State Universities and Land-grant Colleges recently published a document outlining guiding principles their members should use to encourage diversity.

Swail et al. (2003), along with several other researchers (Arrington, 1996; Glennen, Farren, & Vowell, 1996; Kuh et al., 2005; Landry, 2002; Lotkowski, Robbins & Noeth, 2004; Tinto, 2005; Tinto, 2006), documented a range of conditions that should be present for successful retention at four-year public institutions. Among the factors identified for those conditions were: high institutional commitment, consistent high expectations and information, shared responsibility, campus wide involvement, faculty involvement/support, fostering student learning, soliciting feedback from all levels, and usage of retention models as well as current research.

The conditions found at successful four-year public institutions were the result of a long-term process of integrating students on two levels, academically and socially. The process of becoming academically and socially integrated into the fabric of the institution is both cumulative and significant in the college experience for both the institution and the student (Swail et al., 2003). The factors and conditions identified by retention researchers contributing to successful matriculation of students of color were derived from data collected through retention assessments and discussions with stakeholder groups (Swail et al., 2003).

Both retention models and feedback from stakeholder groups support high institutional commitment and reliance on proven retention research as contributing factors to success with retention of students of color. In conjunction, making systemic decisions regarding retention and pathways to student success were also considered components of an environment where the institution could be successful at retaining students of color. The literature and stakeholders concur that creating environments where students feel valued, and service-providers focus on student success, are critical. Retention researchers suggest creating a sense of shared responsibility and greater campus involvement are a necessity to accomplish high retention goals (Tinto, 1993). Clewell and Ficklen (1986) identified several characteristics of institutions employing effective practices for retention. Those characteristics supported greater campus involvement and higher institutional commitment. In addition to this list, Clewell and Ficklen (1986) added collecting data to monitor progress of students & institution. This is important so the institution knows where gaps exist in the system and where improvements can be made. Additionally, feedback helps the institution celebrate success in areas where campus units are doing well.

Part of keeping campus personnel involved is to recognize participation with retention programs and encourage others to get involved. Faculty involvement and support is another critical element of effective institutions. Tinto (1993) and Noel, Levitz, and Saluri (1985) discuss faculty involvement as critical to contributing to reducing stigma felt by students and assist in integrating students academically into fabric of institution. Faculty participation also assists students in communicating

academic expectations, reinforcing on a daily-basis the institution's commitment to student success, and supporting learning opportunities for students. Faculty can help students become integrated socially by serving as mentors for students looking to make the transition between educational settings. In agriculture, because there is a lack of representation by people of color, mentoring by faculty becomes even more important (Morgan, 2000).

Barriers to Retention in Agriculture

Examining research in enrollment, general retention, and retention specifically in agriculture yielded several barriers to retaining students of color at state and land-grant institutions. Those barriers found to be most significant and prevalent in the literature were: lack of representation of populations of color in agriculture, lack of evaluation of programs and services within colleges of agriculture, coordination of academic support services, faculty, and social involvement.

Lack of Representation in Colleges of Agriculture

Colleges of agriculture nationwide are experiencing low student enrollment (Dyer, Breja, & Wittler, 2000; Goecker, Coulter, & Stanton, 1995; Goecker, Whatley & Gilmore, 1999; Rocca & Washburn, 2005). Low enrollment may be due to lack of fit between the student and the institution and this trend is especially true for students of color attending land-grant universities (Bell, 1997; DesJardins, Dundar, & Hendel, 1999; Jones & Larke, 2001; Litzenberg, Suter, & Whatley, 1991; Morgan, 2000; Trotter, 1988). Colleges of agriculture must take action to reverse these trends if they are to meet

the growing demand for educated workers to sustain the economy and keep this country competitive (American Speech-Hearing-Language Association, 2005; Dyer, Breja, & Wittler, 2000; Goecker, Coulter, & Stanton, 1995). The National Council for Agricultural Education (1989) set as a priority to “serve all people and groups equally and without discrimination (p. 4).” As part of their retention efforts, universities must also demonstrate how improving campus diversity benefits everyone by producing a qualified workforce.

Agriculture to populations of color historically had a reputation of manual labor, low wages, and connections to slavery (Bell, 1997; Larke & Barr, 1987; Talbert, Larke, & Jones, 1999). This negative perception and low prestige has created challenges in recruiting students of color; however, recruitment is not the only challenge. Without academic support services, mentoring, increased financial assistance and career advising, colleges of agriculture will have trouble retaining students of color (Kuh et al., 2005; Landry 2002; Lang, 2001; Swail et al., 2003). Cultural attitudes and awareness of successful opportunities influence the enrollment and persistence of students of color in higher education (Gladieux & Swail, 1999). Thus, negative perceptions of agriculture and limited awareness of lucrative opportunities in the agricultural industry create a significant barrier to retaining students of color. The negative perceptions and low participation warrant more emphasis on reaching out to help motivate and prepare students of color for continued enrollment that will in turn benefit the agricultural industry (Gladieux & Swail, 1999).

Lack of Evaluation of Programs and Services

The Bowen, Gonzalez, Norland, Schumacher, Vaughn, and Whent (1991) report outlines programs and initiatives in place for state and land-grant institutions to recruit and retain students in colleges of agriculture. To date, little data has updated or supplemented this report to provide a current picture of what is being done at these institutions. In the report, 36 institutions were asked to provide information regarding current practices used to recruit and retain students. Of the institutions surveyed, only ten had programs and/or initiatives specifically addressing students of color (Bowen et al., 1991). The efforts used to address those populations included: student organizations, scholarships and financial aid, assigned advisors, and student support services. Few institutions included special courses, pairings with faculty members, and links to university-wide student groups (Bowen et al., 1991). Without sufficient information to guide practice, institutions may struggle to effectively meet the needs of students of color.

Little information is available on the type and number of assessments done to evaluate retention programs in colleges of agriculture. Retention and organizational development literature suggests evaluation is necessary for the organization to learn from prior initiatives and continue to make improvements. Changes from current practices to the contributing factors, as the literature suggests, could increase the effectiveness of retention programs. Knowledge regarding current programs and services is necessary to determine and define success for institutions (Caison, 2004). Retention is a long-term commitment for institutions and should be remembered as administrators

enter into decision-making processes affecting policies for retaining students. In making long-term efforts towards retention, institutions should front-load their efforts and continually assess their actions with an eye toward improvements (Tinto, 1993).

Coordination of Academic Support Services & Faculty

Academic services are critical to students as they progress academically through any institution. Those services include academic advising, supplemental instruction, and tutoring, research opportunities, mentoring and transition programs. Transition programs provide opportunities for students to gauge institutional fit for themselves and their academic intentions both for undergraduates and graduate students. Academic services are most effective when directly connected to student learning and not isolated (Tinto, 2005). However, insufficient data exists indicating if these services are effectively coordinated in agricultural programs to meet the needs of and retain students of color.

It is important to examine the fiscal implications of retention in attempts to raise retention rates of all students (Glennen, Farren, & Vowell, 1996). Colleges of agriculture ought to ensure the academic success of its students by providing supportive services to remain viable (Ball et al., 2001). Coordination of these services is required for institutions to receive maximum benefits from current retention efforts. Campuses ensure that close attention is paid to fundamental resource dependencies within the campus organizational structure by coordinating efforts between departments within the college, student affairs, and other academic support units on campus (Pfeffer, 1992).

Faculty

Faculty are a large part of academic services because they some times serve as student advisors. Next to a student's peer group, faculty represents the most significant factor in the college student experience (Astin, 1993). The role faculty play with retention is crucial, considering the informal and formal relationships that engage the students both inside and outside the classroom. This experience may provide some students with a first impression to the agricultural industry and can have serious impacts for retention for the college (Dyer, Breja, & Wittler, 2000). Consequently, faculty should be engaged and aware of retention challenges before implementing intervention strategies. Overcoming challenges for retaining students of color in agriculture will require systemic change to achieve success as defined by the institution. If faculty are expected to participate in retention efforts and take time for professional obligations, incentives ought to be in place to reward them for doing so and to encourage participation (Swail et al., 2003).

Social Involvement

Connecting academics and social involvement can be a powerful tool in retaining students (Kuh et al., 2005; Nora, Barlow, & Crisp, 2005). By doing so, institutions can bridge the gap between academics and student affairs when designing retention solutions for their campus. In agriculture, retention can be higher if institutions target students with greater exposure to agriculture and use student organizations to provide community amongst students (Ball, Garton, & Dyer, 2001; Mullinix et al., 2003; Talbert, Larke, & Jones, 1999). Bowen et al. (1991) discussed this strategy being used by some

institutions. However, few institutions used this strategy in conjunction with efforts to retain diverse populations. The connection with peers and faculty mentors provides a strong supportive network for students of color (Kuh et al., 2005; Landry, 2002; Lang, 2001; Lee, 1999; Tinto, 2005).

Whether state and land-grant colleges are now using this strategy as a tool to retain students of color in agriculture is unknown. As our population becomes more diverse, this strategy could be used as a recruiting tool to access a virtually untapped pool of resources (Mullinix et al., 2003). Bowen et al. (1991) also indicated few colleges have articulation agreements to provide apprenticeship programs between institutions or with agricultural companies for students of color, and virtually none of the institutions had transition programs or orientation programs designed to meet the needs of this population. The substantial impact from apprenticeship, transition, and orientation programs for students of color supports the contention that more evaluative information must be provided to determine whether state and land-grant colleges of agriculture are prepared for engaging in retention activities.

For current retention initiatives within colleges of agriculture to be long lasting, the changes must be systemic and fit with not only the current identity of the college but also their envisioned image (Armenakis & Bedeian, 1999; Arrington, 1996). The change process states that awareness and preparation is required before engaging in systemic change (Armenakis et al., 1993). Armenakis et al. (1993) discusses change readiness as one of many factors that contributes to the effectiveness of change in organizations. Armenakis et al. likens change readiness to Lewin's (1951) "unfreezing" phase in the

change process. Readiness in this view is defined as the “cognitive precursor to the behaviors of either resistance to or support for, a change effort” (Armenakis Harris & Mossholder, 1993, p. 681; Armenakis, Mossholder, & Harris, 1990).

Readiness Models and Usage

Resistance to change has been discussed in organizational change literature dating back to Kurt Lewin (1951) and Coch & French’s (1948) study that analyzed methods of reducing resistance to change. It is from this line of research in organizational change management and development that organizational readiness for change emerged. Many factors contribute to the success of organizational change, and one such factor is the level of “readiness” of the organization and its members (Armenakis, Harris & Mossholder, 1993). Armenakis, Harris & Mossholder’s (1993) definition of readiness will be used. Armenakis and his colleagues describe readiness as “the reflection of organizational member’s beliefs, attitudes and intentions regarding the extent to which changes are needed along with the organization’s capacity to effectively make those changes” (p. 681).

Other researchers have often discussed readiness in conjunction with resistance to change (Kotter & Schlesinger, 1979; Lawrence, 1954) and provide suggestions of ways to manage it. Armenakis (1993), Beckhard & Harris (1987), as well as Beer & Walton (1987), suggest readiness be distinguished based on the idea that without readiness to change, resistance still would occur and readiness helps refine discussions of the change implementation efforts (Armenakis, Mossholder & Harris, 1990; Kanter,

1983; Kissler, 1991). Thus, if institutions take a more proactive approach to making changes with regard to retention as this line of research suggests, they are better able to uphold their mission and achieve their vision of becoming an academic environment that reflects society and can produce workers who are able to function effectively within it.

Assessing readiness levels provides several benefits, one of which is reducing the likelihood of resistance to change. A second benefit to assessing readiness is that it assist colleges in achieving sustained capacity for solving their own problems by monitoring their environments and controlling any inputs into the organization (Schmuck & Runkel, 1994). Additionally, framing the project in terms of readiness can portray the institution as being proactive about retention issues which can build or maintain support from stakeholder groups like parents, state legislatures, and external funding agencies (Armenakis, Harris & Mossholder, 1993). Readiness can also assist in planning steps to achieve the organizational mission of the institution. Because examining readiness refines the discussion around implementation, institutions can focus more on how to achieve its vision.

A clear vision clarifies what steps should be articulated in the mission. Involving stakeholder groups in the mission discussion, like departments or funding agencies, provides buy-in and support to focus on how to achieve the organizational vision (Schmuck & Runkel, 1994). The mission and delegation necessary in large institutions becomes easier with buy-in and support of campus constituents. Involving any stakeholder will entail constant and consistent communication to keep each stakeholder group informed of adjustments to strategies. Open communication is essential for any

change effort as it maintains momentum and keeps key players involved in the process (Burke, 2002). Open communication in the academy can also help establish or maintain relationships between service areas and academic units necessary to support daily activities specified in the mission.

Readiness for change benefits the academy because it assists in connecting the vision and mission of the institution to the daily activities that form retention services and programs. Institutions can justify programs to stakeholders and funding agencies by making direct connections between the vision and mission to the organization's daily activities. This demonstrates the level of success achieved in retention and correlates that success to additional efforts that must be undertaken. Secondly, readiness brings higher awareness about gaps in the college's approach to retention of underrepresented groups, and then to all students. By managing the change process and discovering weaknesses, colleges of agriculture can become an emerging leader in retention of underrepresented groups among competitors in the marketplace for students (Rothwell & Sullivan, 2005). Next, it puts the college and its personnel in a more proactive position. Having a proactive position helps with recruitment by demonstrating trust to their students and families.

Finally, continually assessing organizational readiness keeps the college in touch with the needs of its students as well as current research on retention of underrepresented groups and student needs by performing continuous assessments. Readiness research could initiate the development of a process model of core components related to academic retention and true social integration of students of color. Determining

readiness for retention can become the cornerstone for the process model at the program level. Additionally, performing regular readiness assessments allows each college to determine where improvements need to be made and an easy method to communicate those results with each stakeholder group with scorecards that summarizing key measures of success with retention (Rothwell & Sullivan, 2005).

Barriers to Assessing Readiness

State and land-grant colleges are known for academics. However, they are also known and criticized for inefficiency and resistance to change (Hearn, 1996; Ruben, 2005). State and land-grant colleges maintain a balancing act between openness to change and resistance to change. The resistance to change stems from loose connections and lack of coordination between academic and service units. Amid these loose connections, these institutions set ambiguous goals while encouraging fluid participation in a complex network between all campus units (Schmuck & Runkel, 1994). This phenomenon is known as “loose coupling” and exists in educational settings (Clark, 1983; Hearn, 1996; Hoy & Miskel, 2005; Weick, 1982). Loose coupling creates opportunities for gaps in providing academic support services, early intervention strategies, and other retention efforts to students before they depart from the institution.

Organizational development strategies assist in identifying where gaps exist in providing retention strategies and services to students. The notion of organizational development is not a new one. However, it has not gotten wide acceptance or discussion in higher education literature (Torraco & Hoover, 2005). Organizational readiness, as part of organizational development, has received equal acceptance as it is a tool for

affecting change in an organization that is not receptive of change. Systematic tools to assess readiness are scarce but researchers support the contributions readiness makes to making systemic change successful (Armenakis et al., 1999; Backer, 1995; Simpson, 2002).

The mission of the college must be considered when assessing readiness at state and land-grant colleges of agriculture. Currently, evidence is unavailable on the mission guiding the culture of colleges of agriculture or the institution to encourage long-term participation of diverse populations in agriculture related fields. Consequently, when change is needed, it is important to adapt the change process to fit the mission, culture, and environment of the college rather than using a canned process from another institution (Torraco & Hoover, 2005). Connecting the mission and goals of the college of agriculture to readiness assessments assists in institutionalizing feedback loops that will indicate when improvements are necessary.

Organizational change literature has identified several readiness factors that organizations use to determine readiness they are for change. Readiness factors are defined as management behaviors that give the organization an indication that the change activity is more permanent than a passing fad or quick fix (Armenakis, Harris, & Field, 1999; Struckman & Yammarino, 2003). While it is important to identify which readiness factors are needed for each change in an organization's control, these factors have not been recognized by colleges of agriculture in their efforts to accommodate the needs of diverse student populations (Stewart, 1994). Colleges can ensure a positive impact resulting from changes made to support retention by identifying readiness

factors. Readiness factors for retention, bridge what needs to happen with the activity of implementing changes needed to increase retention (Struckman & Yammarino, 2003).

Even though readiness factors vary depending on the change, there are some common factors. Struckman & Yammarino (2003) identified the following as common factors that are relevant to higher education and retention: communication, culture, leadership, measurements, organizational structure, performance feedback, roles and responsibilities, and lastly skills. These factors are similar to the best practices documented by noted retention scholars and researchers Kuh et al. (2005), Swail et al. (2003), and Tinto (1993, 2005a, 2005b). A deficiency in any of the readiness factors indicates a need to assess readiness using diagnostic instruments. Performing readiness assessments allows decision makers within the college to develop feasible solutions with greater success for organizational change and improvements (Howard, Bechet, Bray, & Burke, 2005).

Support and commitment from decision-makers and stakeholders within the college are critical to any change effort (Torracco & Hoover, 2005). Retention literature supports high commitment from institutional leaders is necessary if any retention effort is to be successful. AASCU and NASULGC (2005) recognize this commitment as a necessity for diversifying their institutions to reflect the changes in demographics. However, limited information is published illustrating high commitment from leaders within colleges of agriculture towards diversity and retention of diverse populations. Readiness assessments, as diagnostic instruments, provide this type of information

(Howard et al., 2005; Senge, 1994). Generally, target audiences of this diagnostic information are decision-makers and upper level administration (Howard et al., 2005).

Usage of Organizational Readiness

Performing readiness assessments as a diagnostic can assist administrators and managers in avoiding inappropriate actions (Howard et al., 2005). This feedback helps increase the responsiveness of organizations and contributes to its learning process. Diagnostic instruments, like readiness assessments, can pinpoint norms and other organizational cultural elements in the social structure causing dissatisfaction and attrition (Schmuck & Runkel, 1994). Readiness assessments have been used primarily in technology based applications due to the ease of identifying value added to the organization and benefits resulting directly from the assessment. Struckman and Yammarino (2003) have identified readiness factors that span industries and were used primarily with technology change implementations. Readiness assessments have sound practical basis but little acceptance in scholarly research in the manner of instrument and construct development (Simpson, 2002). Private sector and some educational organizations have begun to delve into this area.

The Technology Readiness Index (TRI) is an example of a recent development in readiness research. The TRI was developed to support the concept of technology readiness of members of an organization (Parasuraman, 2000). The multiple-scale instrument measures and assesses psychometric properties of individual perceptions of technology. Parasuraman (2000) discovered through multiple research endeavors that little scholarly research exists pertaining to individual readiness to use technologically

advanced systems interacting with customers. Parasuraman (2000) found this area to be critical given the increased incidences of customers having to serve themselves in a variety of companies. The scales of the TRI instrument were refined after performing a countrywide cross-section of adult consumers. Numerous trials were conducted with companies using new technology systems to support a growing customer base.

Parasuraman (2000) has found numerous applications for the refined 36-item scale. In his words, “TRI has sound psychometric properties that companies can use to gain an in-depth understanding of the readiness of their customers (both external and internal) to embrace and interact with technology, especially computer/Internet-based technology” (p. 371). Parasuraman (2000) suggests that further research for an empirical construct and comparative studies across countries and cultures is also needed. Answers to these questions would provide significant contributions to marketing theory and practice internationally.

Finding readiness constructs not only assists with understanding how customers will respond to new changes, but it also helps with understanding how employees will adjust to structural changes in organizations. Negative responses to structural changes, like attrition or complaints, may be due to norms or other cultural elements that are not explicit to all organizational members (Schmuck & Runkel, 1994). Eby, Adams, Russell, and Gaby (2000) conducted a study to examine the effect of several variables on employee readiness for team-based selling approaches in two divisions of a national sales organization. Competitive pressures from rival companies and general market trends have forced organizations to be responsive to market changes and implement

innovations to compensate for those changes. Eby, Adams, Russell, and Gaby (2000) found that general factors, like organizational flexibility and participation, should be taken into consideration when preparing for major organizational change. Since assessing employees' perceptions of readiness are indicative of the organization's ability to successfully make changes, it becomes important to incorporate these perceptions into plans for accommodating change.

As a result, Eby et al. (2000) suggested organizations preparing for change realign systems and policies connected to the change, perform needs assessments to identify improvement areas, and considered the organizational climate. These findings were supported in human resource research and conceptual models of readiness (Armenakis et al., 1993; Beer & Walton, 1990; Cummings & Huse, 1989; Kauffman, 1993; Spreitzer, 1996; Thomas & Velthouse, 1990; Waldrop, 1992). According to Eby et al. (2000), their study provided only an initial attempt to understand the variables affecting perceived readiness for change. The Eby et al. (2000) study offered individual, job, and context-related factors as being important antecedents of readiness for change.

Similar factors were studied in the context of distance education in higher education. Determining instructional readiness for distance education began as early as 1976. Dwyer (1976) focused on assessing readiness for change and listed guidelines for the process of assessing readiness and performing a constructive follow-up. Building on Dwyer's (1976) research, Nalbone (1979) did a case study analysis on an institution. Nalbone's (1979) case study provided a better understanding of how readiness for distance education can be achieved. Smith, Murphy, and Mahoney (2003) continued a

similar line of research, which began with a readiness for online learning study in Australia on vocational education and training (see Warner, Christie, & Choy, 1998). Here, a preference for online delivery, confidence in using technology, and ability to engage in autonomous learning were examined. This research benefited from a previously developed instrument to assess readiness, the McVay Readiness for Online Learning Questionnaire. McVay's (2000, 2001) thirteen-item questionnaire was used to assess the efficiency of an online orientation program. Each item was strongly related to the characteristics of readiness for flexible learning (Smith, Murphy, & Mahoney, 2003).

Although, the instrument had validity and reliability problems, it demonstrated the utility of such instruments for the discipline. This study pointed the way to predictive validity for studies in readiness (Smith, Murphy, & Mahoney, 2003). Even with some validity and reliability issues on some questions, Smith et al. (2003) found the tool to be useful for research and practice for online learning in its current form. Advancements in equipping students for online learning programs are now more feasible because diagnostic instruments for readiness were developed based on identified readiness factors.

Other disciplines and industries are in the process of identifying readiness factors to develop instruments to measure employee readiness. Lehman, Greener, and Simpson (2002) developed a similar instrument to McVay's Readiness for Online Learning Questionnaire. In their study, an Organizational Readiness for Change (ORC) instrument was developed to understand the organizational factors associated with implementing new technologies into substance abuse programs. The instrument was designed to

identify functional barriers in implementing new technologies. Such barriers included motivation, resources, staff attributes, and organizational climate.

Reliability for this instrument ranged from $r=.5$ to $r=.7$ between the 18 scales. Each scale was developed as program-level indicators rather than staff indicators (Lehman et al., 2002). Lehman et al. (2002) found the tool promising for studying organizational change and diagnosing situations where change does not occur. Additionally, Lehman et al. (2002) found the instrument to have acceptable psychometric properties and relations to other organizational functioning and environmental indicators. The Lehman et al. (2002) study is significant for highlighting the importance of staff attributes and organizational climate to implementing organizational change. Lehman et al. (2002) felt this research was a step toward filling the need for research on the impact of organizational characteristics on technology transfer (p. 208).

Limited information is available on the continuation of readiness research in private sector or educational settings. Commonalities among the studies presented should be noted. Each study defined readiness in terms of the behaviors identified by the readiness factors, where available, and by behavior identified as being successful. Limited information was available on readiness for each of the disciplines and all studies found that research on readiness should be continued as it provides useful information for organizations experiencing large-scale change. Lastly, each time readiness was examined, instrumentation needed to be developed. This demonstrates a need for further research and development in this area of organizational change.

CHAPTER III

METHODOLOGY

The purpose of this study was to identify the readiness level of state and land-grant colleges and universities for retention of underrepresented groups of ethnic students in colleges of agriculture. In determining readiness levels that support retention policies and programs, this study will describe:

1. Develop an instrument to describe the level of organizational readiness for retention within colleges of agriculture
2. Determine how college of agriculture administration define retention to support programs and/or services
3. Determine how satisfied are college of agriculture administrators with retention programs and/or services
4. Assess college of agriculture administrator's perceptions of motivational readiness for retention at state and land-grant colleges of agriculture
5. Assess college of agriculture administrator's perceptions of resource readiness for retention at state and land-grant colleges of agriculture
6. Assess college of agriculture administrator's perceptions of staff attribute readiness for retention at state and land-grant colleges of agriculture
7. Assess college of agriculture administrator's perceptions of organizational climate readiness for retention at state and land-grant colleges of agriculture

For the purpose of this study, readiness is defined as the beliefs, attitudes, and intentions regarding changes needed for high retention rates and the institution's capacity to make necessary changes.

Type of Research

The design of this study was descriptive and correlational in nature. The study was designed to describe the retention definitions and satisfaction levels with retention efforts in colleges of agriculture at state and land-grant universities, as well as describing their readiness level to retain students of color. Using a survey was appropriate for this study as it provided data for staff members to recognize how actions are viewed by others within the college (Schmuck & Runkel, 1994). The theoretical base supporting the study stemmed from: (1) Lewin's (1951) change model for organizations; (2) Armenakis et al. (1993) model of organizational readiness; (3) Tinto's (1993) model of student retention; (4) Astin's (1977, 1985) model of student retention; and (5) systems theory.

The study used ten dependent variables, classified into four categories. The first group consisted of pressures for change and program needs that contribute to motivational readiness. The second group of attributes included office facilities and staffing resources contributing to resource readiness. The third group of characteristics, staff attributes, consisted of growth, effectiveness, and orientation. The last group of characteristics, organizational climate, consisted of mission, communication, and adaptability to change.

This study presents information describing the condition of state and land-grant institutions with regard to retention efforts. Since state and land-grant institutions have previously engaged in strategies to alleviate attrition and maintain funding levels for enrolled students, *ex post facto* research is the appropriate research method to apply. Tuckman (1999) describes *ex post facto* research as studies in which the researcher is unable to create or cause a variable to occur by creating a treatment. Rather, the researcher must examine naturalistically occurring treatments after they have occurred (Tuckman, 1999). This study is considered *ex post facto*, as state and land-grant institutions have already executed retention strategies; thus, an attempt was made to describe the state of readiness given current retention rates of underrepresented groups. Ary, Jacobs, & Razavieh (2002) state researchers engaging in *ex post facto* research begin by identifying subjects who differ on an attribute of interest. For comparison on the variable of interest, institutions that participated in the Documenting Effective Educational Practice (DEEP) study conducted by Kuh, Kinzie, Schuh, and Whitt (2005), were surveyed and used as examples of high readiness for retention. Considering these schools have infrastructure and resources that resulted in effective retention of students of color, they illustrate the trait of readiness for retention. Consequently, they served as the reference group for the study. Texas A&M University Institutional Review Board (IRB) approved this study. A copy of the approval letter can be found in Appendix A.

Pilot Testing

A pilot test was conducted with respondents in all colleges of agriculture in Texas, California, and Florida (n=35). These states were chosen based on the increase in populations of color indicated by the literature (U. S. Bureau of the Census, 2004; Swail et al., 2003). Table 2 displays all the institutions used in the pilot test. This group was not included in the sample population. Participants were solicited to take the instrument given the nature of their position and relationship to retention of students of color within the college of agriculture. The pilot pre-notice (Appendix B) was sent on July 6, 2006 to each of the 35 participants providing the purpose of the study and advanced notice the instrument would be coming. The pre-notices were to proactively increase the response rate to the pilot instrument within a week prior to sending the pilot cover letter (Dillman, 2000).

The pilot cover letter (Appendix C) was sent on July 11, 2006 to participants with a link to the pilot instrument (Appendix D). Two pilot reminders (Appendix E) were sent, on July 17, 2006 and July 21, 2006, to participants who had not responded to the initial invitation. The pilot data collection ended July 25, 2006 with a total of 13 (37 %) completed surveys. Feedback from the pilot test was used to establish content validity of the instrument since it was not possible to get a good estimate of reliability with a low-response rate. Only 11 out of the 13 participants from the pilot test provided usable data. This number can be attributed to technical difficulties with the user identification links needed to access the online instrument. As a result, data from the population will be used to further refine the instrument.

Table 2*Pilot Test Institutions*

State	Institution
Texas	Abilene Christian University
	Angelo State University
	Sam Houston State University
	Stephen F. Austin State University
	Sul Ross State University
	Tarleton State University
	Texas A&M University
	Texas A&M University Commerce
	Texas A&M University Kingsville
	Texas State University
	Texas Tech University
California	California Polytechnic State University San Luis Obispo
	California Polytechnic State University Pomona
	California State University Chico
	California State University Channel Island
	California State University Dominguez Hills
	California State University East Bay
	California State University Fresno
	California State University Humboldt University
	California State University Monterey Bay
	San Jose State University
	University of California Davis
	University of California Berkeley
	University of California Riverside
	University of California Irvine
Florida	Florida State University
	University of Florida
	University of Florida Fort Lauderdale
	University of Miami
	University of South Florida St. Petersburg

Selection of Subjects

The target population for this study consisted of retention personnel in colleges of agriculture at all state and land-grant institutions that were members of one of three organizations: the National Association of State Universities and Land-Grant Colleges, the American Association of Schools and Colleges of Agriculture and Renewable Resources, or the National Association of University Forest Resource Programs (n=156). Retention positions were identified by a title search of the college of agriculture web pages of the member institutions. Assessing behaviors at each level can provide insight into behavior at other levels of administration across the college (Schmuck & Runkel, 1994). Organizational readiness literature also states in order affect change with administrators, they must be faced with issues in the system related to goals, structure and environmental influences (Schmuck & Runkel, 1994). Because the size of the population was small, a census of the entire population was conducted. This population was selected by the researcher given the low retention rates of students of color at predominantly white agricultural institutions (Chenoworth, 1999; Collison, 2000; Flowers, 1998; Landry, 2002; Rinn, 1995), and the nature and mission of state and land-grant institutions to provide quality education to the residents of their states.

State and land-grant colleges and universities are known for being public servants and are obligated to serve their state residents. Both state and land-grant institutions play pivotal roles in developing public education and opening doors to new educational and vocational opportunities for millions of students. Implicit in that obligation is providing quality access to post-secondary education, academic support

services for all students to keep the country's workforce competitive (Martin, 2005; McDowell, 2003). In addition, state and land-grant institutions must be stewards of public resources in order to provide quality education and academic support for all students. The issue of decreased enrollment and retention of students of color is particularly important for land-grant institutions considering the "land-grant principle" that encourages the agricultural developments (McDowell, 2003). State and land-grant institutions, as stewards of public resources must also be sure to minimize financial impacts to auxiliary and academic units by reducing attrition (Seidman, 2005).

The National Association of State Universities and Land-Grant Colleges was created to provide support in teaching, public service, and research for land-grant institutions (Kellogg Commission, 1999). In like fashion, the American Association of Schools and Colleges of Agriculture and Renewable Resources provide similar support institutions which are not land-grant institutions, but have significant agricultural programs (Kellogg Commission, 1999). Just as these two organizations were created to support agricultural programs, the academic deans of forestry programs felt a need for the same kind of support for university-based natural resource education centered on the preservation of forests (NAUFRP, n.d.); hence, the development of the National Association of University Forest Resource Programs. These organizations were selected as the best means of locating and reaching all state and land-grant institutions having colleges of agriculture.

NASULGC identifies 76 land-grant status institutions among their 214 members. However, only those created under the Morrill Act of 1862 (n = 54) will be of interest

for this study. University of Guam was also included in this study as it is a land-grant in the United States. Land-grant institutions in the Virgin Islands and the Massachusetts Institute of Technology were not included in this study because they lacked agricultural programs. The University of Puerto Rico was also not included in the study since it caters to mainly Puerto Ricans. Even though Puerto Ricans would be considered students of color in the United States, they would not be an underrepresented group at this institution; and thus, should be eliminated to avoid bias. Historically black and tribal colleges and universities were excluded to avoid the same bias as with the University of Puerto Rico. Considering there are only 75 institutions with 156 administrators connected to the retention of students, the researcher included all institutions in the sample, since it was feasible to survey the entire target population with the online survey.

AASCARR encompasses all state schools of agriculture and natural resources. Schools from the National Association of University Forest Resource Programs, representing 69 institutions in membership, were also included in the total population. Yale University, Michigan Tech University, Northern Arizona University, and Duke University were not members of either NASULGC or AASCARR. Yale University and Duke University were not considered for this study given that the lack of an agricultural program and they are neither state nor land-grant institutions (n = 156).

Instrumentation

The questionnaire used in this study was intended to assess the readiness of colleges of agriculture for engagement of retention activities. Questions and scales were

adapted from those in the Lehman et al. (2002) study and retained the five-point Likert-type scale used in their study (1=Strongly Disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly Agree). Supplemental questions were developed by the investigator based on standards, issues, and best practices presented in retention literature. All questions asked subjects to rate their perceptions of their institution's readiness on each scale. Specific sub-scales from the Lehman et al. study were selected based on relevance to higher education institutions. These sub-scales, illustrated in Table 3, were grouped into four categories and then adapted. A pilot test was conducted with campus retention personnel at 13 institutions in Texas, California, and Florida to ensure content reliability of the items in each scale. Cronbach's alpha was not calculated to determine instrument reliability due to a lack of sufficient responses from the pilot test (n=13).

The instrument comprised six sections and shown in Appendix F. The first section acquainted subjects with retention at their institution and with definitions of key terms used throughout the instrument. Identifying definitions of retention is beneficial because it provides a foundation of understanding what frameworks are used to guide policies and programs for improving retention rates and alleviating the attrition of students of color. Since these institutions have previously engaged in retention activities, describing readiness levels is valuable as it distinguishes areas needing improvement for the institution.

Table 3
Substitutions from Lehman et al. Readiness Categories

Categories	Lehman et al. (2002) Scales	Retention Adapted Scales	Reason for Change
Motivation	Program Needs for Improvement	Program Needs	
	Immediate Training Needs		Addressed in Staff Attributes
	Pressures for Change	Pressures for Change	
Resources	Offices	Offices	
	Staffing (Number of Members)	Staffing	
	Training		
	Computer Access		No Significant Impact Found in Literature
	E-communications		No Significant Impact Found in Literature
Staffing Attributes	Growth	Growth	
	Efficacy	Effectiveness	Focus group expressed confusion on definition of Efficacy
	Influence	Orientation	Focus group expressed confusion on definition of Influence
	Adaptability		Moved to Organizational Climate and Combined with "Change"
Organizational Climate	Mission	Mission	
	Cohesion		Combined with Cohesion
	Autonomy		Not Supported in Retention Literature
	Communication	Communication	
	Stress		Incorporated with change
	Change	Adaptability to Change	

The second section consisted of 21 questions regarding motivational readiness. Respondents used a five-point Likert-type scale where 1=Strongly Disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, and 5=Strongly Agree to describe compelling motives that influence behaviors within the college. Retention is not a “quick fix” challenge, since students take at least four to five years to matriculate; thus, a long-term organizational change will be required. Motivation drives successful change efforts. Without sufficient motivation stemming from ownership of the change as well as the awareness of a discrepancy between the existing state and desired outcome, organizations will not maintain efforts to achieve long-term change (Burke, 1994; Struckman & Yammarino, 2003). Motivational forces, pressures for change, and perceived need for change are complex but are necessary elements for successful change initiatives (Armenakis, Harris, & Mossholder, 1993; Backer, 1995; Lehman, Greener, & Simpson, 2002; Pond, Armenakis, & Green, 1984). Armenakis’ model for change and Lewin’s (1951) change process model outline the theoretical basis for this element in establishing readiness and beginning the change process.

The third section, institutional resources, contains 14 questions referencing issues around facilities, staffing, and training resources. Again, respondents used a five-point Likert-type scale where 1=Strongly Disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, and 5=Strongly Agree to describe college resources for change. Lehman et al. (2002) specify that these components are also important considerations for determining organizational behavior. Additionally, change theory states that without

proper support and sufficient institutional resources, change efforts cannot be effectively managed and could face immediate or delayed failure (Brown, 1997; Burrington, 1987; Jones & James, 1979).

Section four is designed to measure perceptions of staff attributes.

Organizational behavior models converge on similar dimensions of attitude and functioning that influence organizational change (Fishbein, 1995; Lehman et al., 2002). Research into those models has led to development of 22 questions regarding growth, efficacy, and orientation. Participants were asked to rate their perceptions of these areas on the same five-point Likert-type scale as used in previous scales.

The organizational climate where change is to take place is another important consideration. Lehman et al. (2002) identified several dimensions commonly associated with organizational change that is supported in the literature (Fox, Ellison, & Keith; 1988; Funham & Gunter, 1993; James & James, 1989; Porras & Robertson, 1992). For the purpose of this study, those dimensions included mission clarity, openness of communication, and adaptability to change. Given this context, these 19 questions were chosen as being most important to consider with regard to retention. Participants were asked to rate their perceptions of these areas on the same five-point Likert-type scale as used in previous scales.

The last section requests that subjects enter demographic information (gender, ethnicity, tenure at the institution, etc.). These questions were measured on a nominal scale. The instrument took approximately 15 to 20 minutes to complete. Once they

completed and submitted the questionnaire, subjects were no longer involved with the study.

Validity and Reliability

The instrument was reviewed for content and face validity by a panel of seven university administrators and faculty with expertise in retention and assessments of student services, curriculum, and programs (Appendix G). Panel members were specifically chosen within the college of agriculture because of their proficiency with diversity assessments, work with students of color, and knowledge of retention in higher education. Panelists were asked to examine each question for relevance and ability to measure readiness for retention as defined in the study (Czaja & Blair, 2005). Wording and order changes were made based on feedback from the panel of experts and comments from the pilot test.

Reliability of the instrument was determined by responses from agricultural colleges at state and land-grant universities. Cronbach's alpha, a coefficient used to calculate reliability, was used to determine the internal consistency of questions within the instrument (Fraenkel & Wallen, 2000). Reliability coefficients range from -1.00 to +1.00 and the rule of thumb for social sciences instruments is to have a reliability of .80 or higher (Downie, 1967; Fraenken & Wallen, 2000; Gall, Gall & Borg, 2007; Nunnally, Jr., 1970; Spatz, 2005). Researchers agree the closer reliability coefficients are to +1.00 the greater the relationship (Downie, 1967; Fraenken & Wallen, 2000; Spatz, 2005). Table 4 shows reliability of each item from motivation, resources, staff attributes, and organizational climate categories respectively. To increase the reliability of instrument

scales, specific questions were deleted. Table 5 displays the new reliability for each of the scales. Table 6 shows the questions deleted from each scale to improve reliability.

Table 4

Reliability of Readiness Scales (N = 70)

Readiness Scales	<i>r</i>
Motivation	.683
Resources	.798
Staff Attributes	.870
Organizational Climate	.817

Table 5

Recalculated Reliability of Readiness Scales (N=70)

Readiness Scales	<i>r</i>
Motivation	.733
Resources	.799
Staff Attributes	.886
Organizational Climate	.866

Table 6
Deleted Instrument Questions

Scale	Question
Motivation	<p>I do not feel pressure to change</p> <p>Our college needs guidance in creating policies and practices to support students of color</p> <p>My college needs a consistent plan of action regarding retention</p>
Resources	<p>A network of role models in agriculture have been identified</p>
Staff Attributes	<p>There is not specific model or theory guiding retention efforts</p>
Organizational Climate	<p>Mission and values of the college are transparent</p> <p>Students of color are well informed on available resources</p> <p>Open discussions regarding policy are needed in the college</p> <p>Small changes could influence student retention</p> <p>Adjusting procedures is easy to do</p>

Data Collection Methods

The study took place on August 8, 2006. Responses were kept confidential using coded replies and stored in a secured database. The investigator had no relationships with any of the subjects participating in the study. Data was collected using an online survey instrument adapted from another study by the researcher. Each question on the instrument came from issues and criterion represented in general retention literature and retention in agricultural fields. Scales used in this instrument are considered uni-dimensional and were adapted from a previous study (Lehman, Greener, & Simpson, 2002). Standardized definitions of key terms assisted the participants with understanding meanings associated with specific questions. Data was analyzed using Statistical Package for Social Sciences (SPSS). Participants were assured their responses were kept confidential and data would be aggregated based on administrative level, ethnicity, gender and institutional classification as state or land-grant.

Questionnaires were coded for ease of analysis. Pre-notices were sent to respondents on July 31, 2006 to alert them to the arrival of the instrument and to provide a positive impression of the study (Dillman, 2000). In accordance with Dillman's (2000) recommendations for online surveys, pre-notices (Appendix H) were at least sent two to three days prior to distributing the instrument. Emails were personalized with respondents' names and titles to encourage participation along with the pre-notices. Approximately one week later on August 8, 2006, personalized cover letter (Appendix I) with a link to the instrument (Appendix J) were sent to participants.

Reminder emails with replacement links to the instrument are useful ways to encourage participation with respondents who may not remember to complete the instrument (Dillman, 2000). Non-respondents were reminded of voluntary participation in the study as to encourage a greater response from the sample. The first reminder (Appendix K) was a simple reminder to complete the instrument. The second reminder (Appendix L) provided a replacement link to the instrument for respondents to access in case of technical difficulties with the previous notice (Dillman, 2000). Data collection ended August 31, 2006. Of the invitations to participate 72 replied and 70 of those who replied were usable data points.

Not all subjects choose to participate in the study. Dillman (2000) describes this lack of response as *non-response error*. Non-responders are thought to differ greatly from those who responded (Lindner, Murphy, & Briers, 2001). To reduce the amount of error in the results collected, *non-response error* must be accounted for. If not addressed *non-response error* can pose a threat to external validity of the study (Lindner, Murphy, and Briers, 2001). Dillman (2000) describes multiple methods of reducing the chances of *non-response error* including avoiding double-barreled questions, double- or triple-banking questions, excess specificity, leading first questions, and token incentives to encourage participation.

Care has been taken through expert panel reviews to reduce the amount of error stemming from these areas. However, no financial or token incentives were offered to encourage participation. Lindner, Murphy, and Briers (2001) recommend comparing early to late responders, with a minimum of 30 late responders. This comparison can

account for differences or similarities in responses. Late responders will be labeled by the timing of their response in conjunction with the reminder sent to the participant (Lindner, Murphy, & Briers, 2001). Should an insignificant number of non-responders be present, the researcher chose to use days to respond as a regression variable recommended by Lindner, Murphy, and Briers (2001). To compare late responders, participants were separated by the week they responded. Respondents submitting surveys within the first two weeks were considered early responders. Respondents submitting surveys in the last two weeks of the study were considered late responders. In the event there are significant differences, timing of submitting the instrument will be considered an independent variable during data analysis.

Data Analysis

The following variables were measured with the use of the instrument developed and adapted by the researcher:

1. The independent variables of interest for this study were administration level, ethnicity, gender, and institution status
2. The dependent variables for the study were motivation, resources, staff attributes, and organizational climate experienced at the time of data collection for retention which will be determined by the institutions' score on each scale of the questionnaire developed by the investigator

One question was recoded due to the number of participants that fell into each category. Question 84 asked respondents to identify their ethnicity. This question was

recoded to reflect two groups (White/Caucasian and Other). Respondents who marked “Biracial” or “Multiracial” were classified as “Other.” Those who marked other were kept in the “Other” category unless they specified a designation. Collected data was analyzed using the Statistical Package for Social Sciences (SPSS). Alpha level for all statistical procedures was set *a priori* at .05.

Objective 1

Objective one was to develop an instrument to describe the level of organizational readiness for retention within colleges of agriculture. A refined instrument was to be developed based on responses from the pilot test. Since the pilot test yielded insufficient information to refine the instrument the data collection process will serve to establish the instrument’s reliability.

Objective 2

Objective two was to describe how administrators within colleges of agriculture define retention to support programs and services used to progress students. Qualitative analysis was performed to sort responses into categories or themes. Frequency counts were used to determine which definitions were prominently used.

Objective 3

The third objective was to describe how satisfied administrators within colleges of agriculture were with retention programs and services at their institutions. Central tendency and dispersion measures were used to define prominent answers. A t-test was used to highlight differences between state and land-grant institutions and gender as well.

Objective 4

The fourth objective was to describe the perception of administrators in the college of agriculture regarding motivational readiness for retention at state and land-grant institutions. Frequency counts were used to highlight sources of pressures, if any, for state and land-grant colleges of agriculture. A t-test was used to highlight the differences between scores of ethnicity, gender, or state and land-grant institutions. One-way analysis of variance was used to detect any significant differences between administrative levels on the motivational readiness scale.

Objective 5

The fifth objective was to describe administrators' perceptions of resource readiness for retention at state and land-grant colleges of agriculture (concerns about office facilities and sufficient numbers of staff). A t-test was used to highlight the differences between scores of ethnicity, gender, or state and land-grant institutions. Analysis of variance was used to detect differences on with regard to resource readiness among administrative levels.

Objective 6

The sixth objective was to describe the administrators' perceptions of staff attribute readiness for retention in colleges of agriculture at state and land-grant universities. Based on retention and organizational development literature, one-way analysis of variance was conducted to determine any difference between administration levels. A t-test was used to highlight the differences between scores of ethnicity, gender, or state and land-grant institutions on the staff attribute scale.

Objective 7

The seventh objective sought to describe administrators' perceptions of organizational climate readiness for retention at state and land-grant colleges of agriculture. An intercorrelational matrix was constructed to examine any overlap in questions for mission, communication, and adaptability to change areas. A t-test was used to highlight the differences between scores of ethnicity, gender, or state and land-grant institutions on this scale. Analysis of variance was used to examine differences, stated in the literature of professional organizations supporting state and land-grant colleges, between administrative levels.

CHAPTER IV

ANALYSIS OF DATA

This chapter presents the results of data analysis. A summary of the definitions of retention, a description of satisfaction level of administrators with retention efforts, and the findings related to each research objective.

This study was conducted to identify the readiness level of state and land-grant institutions for retention of students of color in colleges of agriculture. To understand how colleges of agriculture approach retention, administrators were asked to provide a definition that is used to support retention efforts and programs within their college. Respondents were then asked to state whether or not any organizational assessments were used prior to making changes or implementing new policies. Perceptions of administrators were used to examine the readiness for retention in four categories: motivation, resource, staff attributes, and organizational climate.

Population Response

The population consisted of 156 respondents. A census of the population was conducted considering the relatively small size ($n = 156$). Of the 72 responses to the survey, only 70 were usable which yielded a response rate of 44.9 %. Specific questions were selected from each scale for further analysis of respondent feedback. Questions were selected based on issues raised in retention literature. Figure 1 displays profiles of institutions by state or land-grant categories of the respondents. Of the individuals that

replied, 81.4 % were from land-grant institutions. A profile of administrative levels is provided in Table 7.

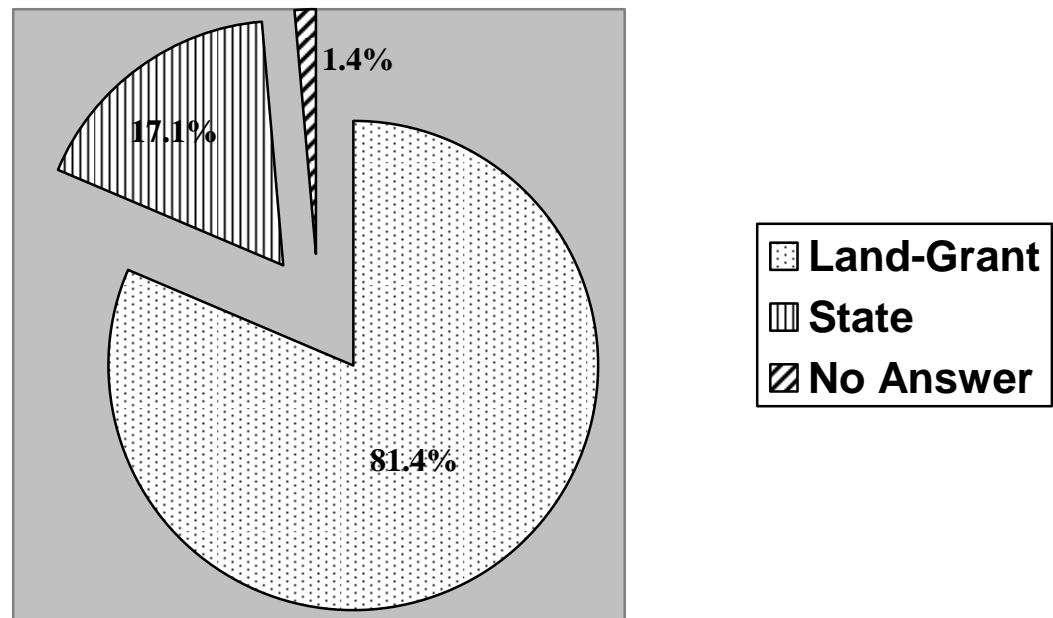


Figure 1. Profile of Respondents by Institution Type

Table 7*A Profile of Respondents by Level in Administration (N=70)*

Level	<i>n</i>	%
Senior Level (Dean, Associate, Assistant)	42	60
Department Head or Director	6	8.6
Retention/Recruitment Coordinator	12	17.1
Academic Advisor	7	10
Other	1	1.4
No Answer	2	2.9
Total	70	100

Sixty percent of respondents were in Senior Level Administration, more than 17 % were retention/recruitment coordinators, 10 % were classified as academic advisors and almost nine % were department heads or directors. The remaining 4.3 % indicated “Other” or did not answer the question. Breakdowns of ethnicity and gender at administrative levels are shown in Figures 2 and 3 respectively, and illustrate the diversity within administrations at the institutions who participated. Approximately 57.1 % were males and 40 % were females and 2.9 % did not answer the gender question. The majority of respondents (69.2 %) in decision-making positions (dean, associate dean, department head, etc.) were White males.

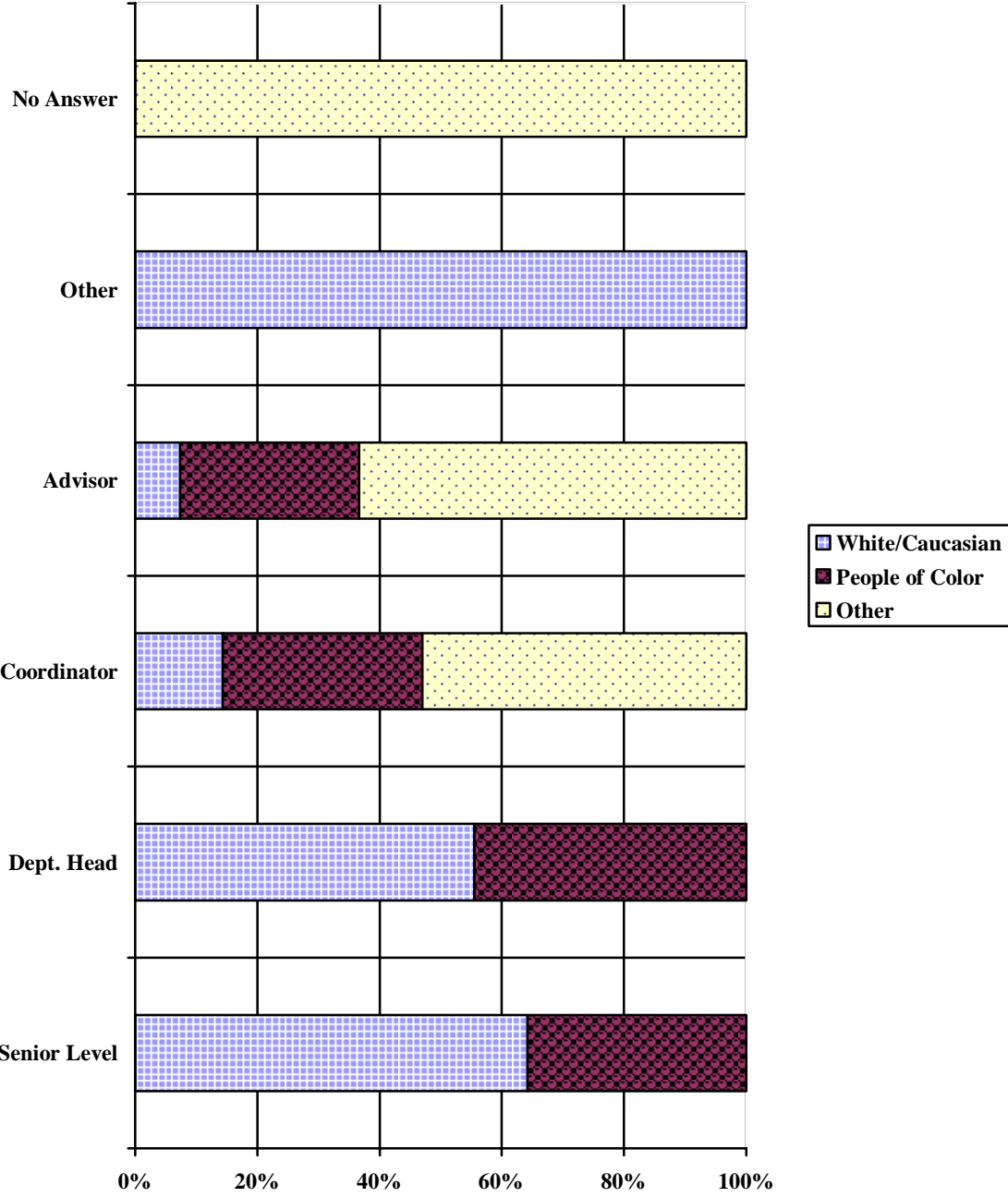


Figure 2. Profile of Respondents by Ethnicity and Administrative Levels

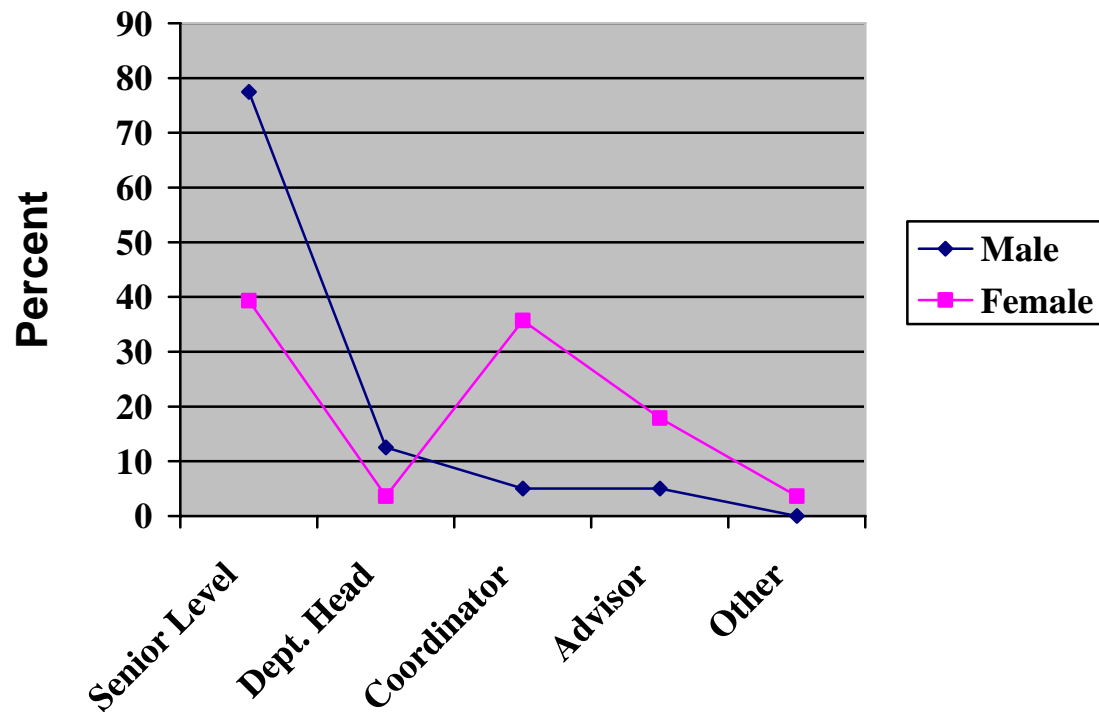


Figure 3. Profile of Respondents by Gender and Administrative Levels

Respondents were asked if they also had recruitment responsibilities as well since this may have implications for how resources and staffing are used for retention activities. Almost 83 % had recruitment responsibilities in addition to retention efforts within the college. As illustrated in Table 8, roughly 85.6 % of respondents were already or will be responsible for recruitment.

Table 8
Respondents Responsible for Recruitment

Recruitment	<i>n</i>	%
Yes	58	82.9
No	8	11.3
Will Be	2	2.9
No Answer	2	2.9
Total	70	100

An even distribution of respondents across responses shows the usage of organizational diagnostics to assess preparedness. Examples of the organizational diagnostics mentioned were climate assessments, program evaluations, course evaluations, focus groups, and exit interviews. Roughly one-third did perform some sort of organizational assessment, one-third did not, and one-third was not sure if an assessment was conducted prior to revising policies or creating new programs for students. Three respondents did not provide an answer for this question as illustrated in Table 9.

Table 10 exhibits the types of assessment themes that emerged from the responses. The majority of responses (10 %) indicated some form of program evaluation or assessment was done prior to making changes or implementing new programs. In

addition to these types, advising assessments, placement exams and competency exams were included as well.

Table 9

Academic Units Performing Organizational Diagnostic Assessment

Perform Assessments	<i>n</i>	%
Yes	22	31.4
No	21	30
Not Sure	24	34.3
No Answer	3	4.3
Total	70	100

With any type of assessment that was used, respondents did comment that faculty, staff, and students were included in the process. Only one respondent indicated a climate assessment; an instrument indicated in organizational development literature as a true organizational assessment assessing topics like organizational health, climate, leader effectiveness, or change readiness.

Table 10*Types of Organizational Diagnostic Assessments Used by Responding Institutions*

Organizational Diagnostic Categories	<i>n</i>	%
Done Outside of College	2	2.9
Specified Instruments	2	2.9
True Organizational Assessments	1	1.4
Evaluations (Program, Class, Faculty, etc.)	7	10
Exit Interviews	1	1.4
Focus Groups	1	1.4
Other	3	4.3
No Answer	53	75.7
Total	70	100

Comparison of Early versus Late Responders

A comparison of early versus late responders was conducted to detect any threats to the external validity of the instrument. Lindner, Murphy, and Briers (2001) recommend comparing early to late responders with a minimum of 30 late responders. Responses were received in two waves during the study. The first wave of responders (n=36) was received between August 8, 2006 and August 21, 2006 and considered early

responders. The second wave of responders ($n=34$) was received between August 22, 2006 and September 2, 2006 and were considered late responders.

Significance levels were set at *.05 a priori*. Significant differences were found between early and late responders. Insufficient number of responses prevented the researcher from locating the differences between early and late responders. However, there were characteristics that were able to be found about each group. A summary of these differences among characteristics of satisfaction, organizational assessments, and recruitment can be found in Table 11. A summary of demographic information for early and late responders can be found in Table 12.

Seventy-six percent of early responders were senior level (dean, associate or assistant) or department head/director level administration. Approximately 64 % of early responders were male and 77.8 % were White/Caucasian. Eighty-four % of early responders were also already or would be responsible for recruitment in addition to retention. The majority of early responders (91.7 %) were satisfied with their college's efforts to meet students' academic needs.

Late responders were similar in some characteristics compared to their early counterparts. Late responders were predominantly White/Caucasian (70.6 %), male (50 %), handles recruitment as well as retention (85.3 %) and satisfied with their colleges' efforts to meet students' academic needs (94.1 %). However, approximately eight % more later responders performed organizational assessments prior to creating new programs for students. Late responders also may have responded later due to advising of students during the first week of classes as almost 18 % of them were academic advisors.

Because there were differences present, results may not be generalized to the population and apply only to the sample.

Table 11
Characteristics of Early and Late Responders

Question	Early Respondent (%)	Late Respondent (%)
Satisfaction level to meet student needs		
<i>n</i>	33	34
Satisfied	41.2	41.2
Somewhat Satisfied	52.9	52.9
Dissatisfied	2.9	2.9
Conducts organizational assessments prior to creating new student programs		
<i>n</i>	33	34
Yes	27.8	35.3
No	33.3	26.5
Not Sure	33.3	35.3
Responsible for Recruitment		
<i>n</i>	36	32
Yes	83.3	82.4
Will Be	2.8	2.9
No	13.9	8.8

Table 12
Demographics of Early and Late Responders

Question	Early Respondent (%)	Late Respondent (%)
<i>n</i>	36	34
Senior (dean, associate, and assistant)	69.4	50
Department Head or Director	5.6	11.8
Coordinator	19.4	14.7
Academic Advisor	2.8	17.6
Other	2.8	0
Gender		
<i>n</i>	36	32
Male	63.9	50
Female	36.1	44.1
Ethnicity		
<i>n</i>	36	31
White/Caucasian	77.8	70.6
Other	22.2	20.6

Findings related to Objective One

After running scale reliabilities on each scale it was determined that ten questions should be eliminated to produce four more accurate and reliable scales to assess organizational readiness for retention. Content and face validity was satisfied through focus groups and constructs found in the literature review. Because limited responses were received during the pilot test, reliability could not be established. However, feedback from those respondents was used to further refine wording and order of

questions on the instrument. Given results from the other research objectives, further refining may need to take place in order to explain findings.

Findings Related to Objective Two

Objective one was to describe how administrators within colleges of agriculture define retention to support programs and services used to progress students. Upon entering the survey respondents were asked in to identify how their college defined retention. Table 13 displays the themes that emerged from retention definitions provided by the responses to the open-ended question. Important distinctions should be noticed with these definitions. Fifty-one (72.9 %) did not respond to this question as they may not have known the definition. Nineteen (27 %) of the respondents provided definitions that included a discussion of persistence of the student, completion of a degree, graduation, and/or making satisfactory progress towards meeting degree requirements.

Two respondents discussed retention in terms of specific elements their institution considered when defining retention for policies and programs. One of the two definitions offered these elements: freshman to sophomore, transfers, moving to another major, and four to six year graduation rates. The other respondent mentioned the “Institutional Research Office produces reports of all retention windows.”

Table 13*Definitions of Retention Used by Colleges of Agriculture Administrators (N=70)*

Retention Categories	<i>n</i>	%
Question Not Available	26	37.1
Persistence, Graduation, & Completion	13	18.6
No Definition or Didn't Know	6	8.6
Satisfactory Progress Towards Degree	6	8.6
No Answer	5	7.1
First Year to Completion	5	7.1
First Year to Second Year	3	4.3
Crossover Definitions	2	2.9
Four Year to Six Year Graduation Rates	2	2.9
Year to Year	1	1.4
Semester Basis	1	1.4
Total	70	100

Findings Related to Objective Three

Objective two sought to describe how satisfied administrators within colleges of agriculture were with retention programs and services at their institutions. The majority

(92.8 %) of all respondents were either Satisfied or Somewhat Satisfied with their institution's efforts in meeting the academic needs of students on campus. Only three respondents were Dissatisfied or Somewhat Dissatisfied with their institution's efforts in meeting academic needs of students. These results are shown in Table 14. Early and late responders had no differences on this question.

Table 14

Administrators Satisfaction with Efforts to Meet Students Academic Needs (N=70)

Satisfaction Level	<i>n</i>	%
Satisfied	29	41.4
Somewhat Satisfied	36	51.4
Neutral	0	0
Somewhat dissatisfied	3	4.3
Dissatisfied	0	0
No Answer	2	2.9
Total	70	100

Findings Related to Objective Four

Objective four sought to describe the perception of administrators in the college of agriculture regarding motivational readiness for retention at state and land-grant institutions. The motivation scale offered an opportunity for respondents to indicate

whether they felt pressure to create changes for retention, if program needs motivated them to make changes, or if other forces motivated them to make changes regarding policies and programs. Initial reliability for this scale was $r=.683$, and after deleting specific questions, rose to $r=.733$. No significant differences were found between state and land-grant institutions, with gender, and ethnicity. State institutions with a mean score of 3.89 were closer to agreeing on the motivational scale where land-grant institutions were at 3.64. Means for males were found in the neither agree nor disagree response category (3.77) but were closer to the agree response category. Women were closer to the middle of neither agree nor disagree at 3.56. People of color differed from whites in motivation to change. Significance was found at .033 when independent t-tests were performed. People of color were in the middle of neither agree nor disagree with a mean of 3.44 while White/Caucasian were closer towards the agree category with a mean of 3.76.

Significant differences at the .05 level were found when an analysis of variance (ANOVA) was performed with administrative level and the motivational readiness scale. Differences were detected between the senior level and department head/director as well as between department head/director and coordinators and advisors. Table 15 displays the central tendency measures and Table 16 displays the significance between groups with administrative level. Further exploration of this issue should be done to determine precisely where the difference lies.

Table 15*Central Tendency Measures for Motivational Readiness*

Administrative Level	<i>n</i>	Mean	SD	Std. Error
Senior	35	3.8	0.407	0.069
Dept. Head/Director	6	3.83	0.458	0.187
Coordinator	12	3.35	0.577	0.167
Academic Advisor	7	3.51	0.553	0.209
Other	1	3.91	.	.
Total	61	3.68	0.49	0.063

Table 16*Analysis of Variance (ANOVA) for Administration Level on Motivational Readiness*

Motivation Readiness Scale	Sum	Mean Square	F	Sig.*
Between Groups	2.227	0.557	2.559	0.048
Within Groups	12.18	0.218		
Total	14.407			

p<.05*Pressure for Change**

Sources of pressure become one focus of motivational readiness given the strength of disagreement from the institutions. With regard to responses for each of the

areas of pressure, Table 17 reveals the top three sources of pressure for all areas of pressure. Respondents also indicated feeling either no pressure (37.1 %) or pressure from students (30 %) to create greater linkages between campus services. Respondents felt students and parents (67.1 %) are pressuring them to create additional financial aid resources for students. This is in line with the rising costs of college tuition. However, 14.3 % of respondents did not feel any pressure to create any additional financial aid resources for students.

Nonetheless, 37.1 % of respondents felt no pressure to increase collaborations with community schools. Communities surrounding college campus, especially land-grant institutions, may exert more pressure than those for state schools since land-grant schools are connected to rural communities. Thirty percent of respondents felt pressure from communities to establish more or better collaborative relationships.

Responses for increasing outreach efforts to communities fell closer to an equal distribution across four areas: departments (27.1 %), no pressure at all (22.9 %), communities (21.4 %), and industry (17.1 %). Communities and industry may pressure colleges as a means of supporting business in the community as well as providing quality workers for jobs. Attrition affects everyone, not just the campus, but the community and businesses as well (Hagedorn, 2005; Seidman, 1996).

Table 17
Sources for Pressures for Change

Pressure	Source	<i>n</i>	%
Greater linkage to services	No Pressure	26	37.1
	Students	21	30
	Departments	17	24.3
Financial aid resources	Students	21	30
	Parents	26	37.1
	No Pressure	10	14.3
High academic expectations	Departments	31	44.3
	No Pressure	18	25.7
Instructional Support & Tutoring	Students	30	42.9
	No Pressure	17	24.3
	Departments	11	15.7
Faculty incentives for participation	Departments	36	51.4
	No Pressure	30	42.9
	Funding Agencies	2	2.9
Faculty/Staff mentoring participation	Departments	26	37.1
	No Pressure	21	30
	Students	14	20
Collaboration with community schools	No Pressure	26	37.1
	Community	21	30
	Departments	15	21.4
Increased outreach	Departments	19	27.1
	No Pressure	16	22.9
	Communities	15	21.4
	Industry	12	17.1

Respondents were asked questions about the college's awareness of its position in the marketplace, of expectations of students of color and their families, and any pressures to focus more on student learning. Early and late responders differed by .04 in their means for awareness of position in the marketplace. There was a .20 difference on feeling pressure to have a greater focus on student learning as well as being aware of expectations of students of color and their families for college. Both groups' mean score fell into the range of neither agree nor disagree on the five-point Likert-type scale. The neither agree nor disagree response category ranged from 3.03 to 3.86 for this scale. Table 18 lists the mean scores for pressure for change in the motivational readiness scale.

Program Needs

Upon closer examination, means for this content area were slightly higher than pressures for change. Early and Late responders both agreed colleges of agriculture use active and collaborative learning approaches and the curricular innovation of the college is driven by faculty. Responses for whether or not the college has measurable outcomes for student success were closer to agree at 3.88 and 3.83, respectively. In contrast, a number of respondents indicated that their colleges had measurable outcomes for student success (64.3 %) and adequately trained faculty and advising staff to participate in retention activities (44.3 %).

Table 18
Central Tendency Measures for Pressure for Change

	Submitted	<i>n</i>	Mean	Std. Deviation
Marketplace position	≥ 2	33	3.85	0.870
	< 2	36	3.89	1.008
Pressure to change to focus on student learning	≥ 2	33	3.21	0.927
	< 2	34	3.41	0.925
Aware of expectations of students of color	≥ 2	33	3.55	0.754
	< 2	36	3.36	1.175
Aware of issues in retaining students of color	≥ 2	33	3.70	0.847
	< 2	35	3.86	0.810
Marked clear routes for student success	≥ 2	33	3.85	0.939
	< 2	36	3.53	0.910
Retention rates affect funding	≥ 2	32	3.59	0.911
	< 2	35	3.51	0.919

Findings Related to Objective Five

Objective five sought to describe administrators' perceptions of resource readiness for retention at state and land-grant institutions. This included looking at sufficient facilities, budget, and number of staff members. No significant differences

were found between state and land-grant institutions, ethnicity, or administrative levels. Males differed significantly from women when asked about resources ($p=.024$).

Offices

The Kuh et al. (2005) study pointed to specific resources that are necessary for effective retention programs and higher than average retention rates. Those were evident in all the questions, but emphasized in mainly three questions. Those questions asked about: (1) integrating resources from surrounding communities, (2) sufficient funding for retention, and (3) sufficient funding for agricultural academic units to support retention initiatives.

Respondents disagreed that sufficient funding was given to retention initiative with a mean response at 2.59. Respondents also indicated that funding is not allocated specifically for retention of underrepresented groups in colleges of agriculture. Lastly, respondents pointed to insufficient funding existing in agricultural academic units to support retention initiatives with a mean score of 2.56. However, respondents did indicate that advising services are easily accessible to students within the college with a mean score of 4.06.

Staffing

Although the mean response for all the questions in this content area fell in the neither agree nor disagree response category, 44.3 % said they agreed that sufficient coordination of retention efforts exists between the college and student affairs to influence retention. Agreement was also found among respondents, at 55.7 %, with regard to the skills background of departmental advising staff reflecting the needs of

student success in the college. It should also be noted that a split of responses came when examining the issue of senior administration in the college creating shared responsibility for retention of students of color within the college. Thirty percent neither agreed nor disagreed, 44.3 % agreed while 24.3 disagreed. Further examination should be done to explore this issue further to discern where and why the discrepancy occurred.

Findings Related to Objective Six

The sixth objective sought to describe the administrators' perceptions of staff attribute readiness for retention at state and land-grant institutions. Respondents were asked to discuss their perceptions of the influence over decisions, professional growth opportunities within the college, efficacy, and direction of the college. No significant differences were found between state and land-grant institutions or administrative levels. Significant differences were found with both gender ($p=.044$) and ethnicity ($p=.019$). Further exploration should be done with growth, effectiveness and orientation to see where males, females and ethnic groups differ.

Growth

The empowerment of faculty, the clear articulation of individual roles for student success, and the continual identification of improvement areas are of particular concern for this scale. Respondents felt that faculty within the college were sufficiently empowered (77.1 %) to take a role in retaining students.

Respondents agreed or strongly agreed (58.5 %) that clear articulation of individual roles for student success by senior administration occurred in the college.

Respondents also agreed or strongly agreed (72.9 % and 62.9 % respectively) that the college is aware of areas necessary to improve retention of students of color and continually seeks out areas of improvement regarding student success. If this is done, the previous gap between individual roles and routes to success should be apparent during the assessments of program, policy or service areas.

Effectiveness

The roles faculty and staff play as they interact with students can leave a lasting impression. How students of color perceive their importance in the college could be a direct reflection of how faculty and staff interact with them. Questions regarding this concern were scrutinized to see if any further information could explain what specifically respondents did or did not agree with regarding the college's efficacy.

A divide in responses was noticed when looking at the breakdown of answers regarding the perception students of color have of the college's commitment to their matriculation. The split occurred between neither agree nor disagree (42.9 %) and agree/strongly agree (44.2 %). Rewording this question or asking similar questions along this line may clarify this split.

If respondents agree the college is perceived as committed to students of color matriculating that may support the college in empowering faculty. When asked if incentives were provided to faculty by the college to participate in retention activities, respondents indicated that did not happen; 45.7 % disagreed with this statement. However, 42.9 % agreed the college did place appropriate emphasis on the retention of

students of color. No significant differences between ethnic groups were found with this question.

Orientation

Four questions regarding benchmarking best practices, use of data on developmental theories for students of color, the awareness of needs of students of color and the socialization activities reflecting the colleges expectations were targeted given their significance to retention. Respondents were split on whether their institutions used best practices from benchmarked schools for retention to guide their efforts. Thirty percent neither agreed nor disagreed, while 32.9 % disagreed and 32.9 % agreed. Further exploration of this area should be done to determine where specifically this split is occurring.

Developmental theories can help guide practices in conjunction with benchmarked best practices. Once a successful program or policy has been located it can be tailored to the needs of an institution's target population with the use of developmental theories. Again, another split occurs with 37.2 % disagree and 38.6 neither agree nor disagree that developmental theories are used to guide retention efforts. Twenty percent say that developmental theories are used to guide their retention efforts. Perhaps, that 20 % may be the benchmarked institutions for some colleges and universities.

An interesting split occurred with regard to the college's awareness of the needs of students of color. Twenty-three percent of respondents disagreed, 38.6 % neither agreed nor disagreed and 34.3 % agreed they were aware. However, respondents agreed

(64.3 %) that socialization activities in the college do reflect the college's expectations for success and that leadership is committed to improving retention of students.

Findings Related to Objective Seven

The seventh objective sought to describe administrators' perceptions of organizational climate readiness for retention at state and land-grant universities. The goal of this scale was to ascertain if mission, communication, and adaptability to change elements were sufficient enough to sustain any changes needed for effective retention policies. No significant differences were found between state and land-grant institutions as well as between administrative levels. Significant differences were found with gender ($p=.014$) and ethnicity ($p=.006$). An inter-correlational matrix was generated to determine if there was any overlap by questions within the organizational climate scale. Correlations between questions did not exceed $r=.555$ and the lowest was $r=-.014$. Correlations between twelve questions were primarily found between two content areas, Mission and Communication.

Communicating values and priorities is part of any climate and has to take place for members to know what behaviors are appropriate. The mean response for diversity being a core value of the college was 4.07 on a five-point scale. Respondents agreed (50 %) that retention of students of color has been identified as a priority within the college. This is consistent with the agreement with continually identifying areas of improvement for student success and senior administration creating a sense of shared responsibility within the organization.

A spread across responses occurred when respondents consider whether a comprehensive plan of programs and services for retention had been communicated within the college of agriculture. A majority (45.7 %) said a comprehensive plan had been communicated where 24.3 % disagreed. Twenty-six percent neither agreed nor disagreed with a plan being communicated across their college. This could indicate an uncertainty on whether it has or not.

In order for collaborations with student affairs and coordination across the college to support retention to work, all partners must understand what their role is in retention and how they can contribute to resolving any issues. Again, a split occurred when respondents consider whether agricultural departments understood their role in retaining students of color. Forty-one % agreed that agricultural departments understood their role where 37.2 % disagreed and another 28.6 % neither agreed nor disagreed. Further exploration of this issue should be explored to see what causes this split among response categories. In contrast, 60 % felt changes affecting services to students were communicated effectively throughout the college.

Changes made within the college should also reflect what is happening in industry so the college and the students stay competitive in the marketplace. Respondents felt the college of agriculture was efficient (42.8 %) in responding to changes in industry. However, 20 % disagreed with that statement and 32.9 % neither agreed nor disagreed. This demonstrates further exploration of this issue as well. It may be some departments reflect this and others do not.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The study objectives, summary of methodology, summary of key findings for each objective, implications and recommendations, and recommendations for further studies are shared in this chapter.

Objectives of the Study

The purpose of this study was to identify the readiness level of state and land-grant colleges of agriculture for retention of students in color. In order to ascertain this information seven objectives were used:

1. Develop an instrument to describe the level of organizational readiness for retention within colleges of agriculture
2. Determine how college of agriculture administration define retention to support programs and/or services
3. Determine how satisfied college of agriculture administrators are with retention programs and/or services
4. Assess college of agriculture administrators' perceptions of motivational readiness for retention at state and land-grant colleges of agriculture
5. Assess college of agriculture administrators' perceptions of resource readiness for retention at state and land-grant colleges of agriculture

6. Assess college of agriculture administrators' perceptions of staff attribute readiness for retention at state and land-grant colleges of agriculture
7. Assess college of agriculture administrators' perceptions of organizational climate readiness for retention at state and land-grant colleges of agriculture

For the purpose of this study, readiness was defined as the beliefs, attitudes, and intentions regarding changes needed for high retention rates and the institution's capacity to make necessary changes.

Summary of Methodology

Type of Research

The design of this study was descriptive and correlational in nature. A mixture of quantitative and qualitative approaches was used to obtain descriptive information regarding the subject. The study was designed to describe the retention definitions and satisfaction levels with retention efforts in colleges of agriculture at state and land-grant universities, as well as describing their readiness level to retain students of color. The theoretical base supporting the study stemmed from: (1) Lewin's (1951) change model for organizations; (2) Armenakis' et al. (1993) model of organizational readiness; (3) Models of student retention (Tinto, 1993; Bean and Eaton, 2000); (4) Astin's (1977, 1985) model of student retention; and (5) systems theory.

The study used ten dependent variables, classified into four categories of readiness: motivational, resource, staff attributes, and organizational climate.

Motivational readiness includes identifying any pressures to change and program needs

that would impact decisions. Resource readiness included the amount and usage of facilities, staff, and funding. Staff attribute readiness contained variables describing opportunities, administrative efficacy, and orientation of the academic unit.

Organizational climate readiness reviewed areas describing clarity of mission, openness of communication and ability to adapt to change. Since state and land-grant institutions have previously engaged in strategies to alleviate attrition and maintain funding levels for enrolled students, *ex post facto* research is the appropriate research method to apply.

For comparison on the variable of interest, institutions that participated in the Documenting Effective Educational Practice (DEEP) study conducted by Kuh, Kinzie, Schuh, and Whitt (2005), were surveyed and used as examples of high readiness for retention. Considering these schools have infrastructure and resources that resulted in effective retention of students of color, they illustrate the trait of readiness for retention. Consequently, they served as the reference group for the study. The Texas A&M University Institutional Review Board (IRB) approved this study.

Pilot Testing

A pilot test was conducted with respondents in the colleges of agriculture in Texas, California, and Florida. These states were chosen based on the increase in populations of color indicated by the literature (Swail et al., 2003; U. S. Bureau of the Census, 2004). A census of the entire population was conducted given its size (n=156). Participants were solicited to take the instrument given the nature of their position and relationship to retention of students of color within the college of agriculture. The pilot cover letter was sent on July 11, 2006 to participants with a link to the pilot instrument.

Two reminders were sent on July 17, 2006 and July 21, 2006 to participants who had not responded to the initial invitation. Pilot data collection ended July 25, 2006 with a total of 13 (37 %) completed surveys. Feedback from the pilot test was used to establish content validity of the instrument since it was not possible to get a good estimate of reliability with a low-response rate. A low response rate was attributed to technical difficulties with user identification links needed to access the instrument. As a result, data from the population was used to further refine the instrument.

Selection of Subjects

The target population for this study consisted of retention personnel in colleges of agriculture at all state and land-grant institutions that were members of one of three organizations: the National Association of State Universities and Land-Grant Colleges, the American Association of Schools and Colleges of Agriculture and Renewable Resources, or the National Association of University Forest Resource Programs (n=156). Retention positions were identified by a title search of the college of agriculture web pages.

This population was selected by the researcher given the low retention rates of students of color at predominantly white agricultural institutions (Chenoworth, 1999; Collison, 2000; Flowers, 1998; Landry, 2002; Rinn, 1995), and the nature and mission of state and land-grant institutions to provide quality education to the residents of their states. State and land-grant institutions, as stewards of public resources must also be sure to minimize financial impacts to auxiliary and academic units by reducing attrition

(Seidman, 2005). These organizations were selected as the best means of locating and reaching all state and land-grant institutions having colleges of agriculture.

Land-grant institutions created by the Morrill Act of 1862 (n = 54) and state institutions with agricultural academic units were the focus of this study. Considering there are only 75 institutions with 156 administrators connected to the retention of students, the researcher included all institutions in the sample, since it was feasible to survey the entire target population with the online survey.

Instrumentation

The questionnaire used in this study intended to assess the readiness of colleges of agriculture for engaging in retention activities. Questions were adapted from those in the Lehman et al. (2002) study and retained the five-point Likert-type scale used in their study (1=Strongly Disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly Agree). Organizational development literature supports using a multi-rater assessment since individuals and small groups were the target of the questionnaire (Rothwell & Sullivan, 2005). Supplemental questions were developed by the investigator based on standards and issues presented in retention literature. All questions asked subjects to rate their perceptions of their institution's readiness on each scale. Cronbach's alpha was not calculated to determine instrument reliability due to a lack of sufficient responses from the pilot test.

The instrument comprised six sections. The first section acquainted subjects with retention at their institution and with definitions of key terms used throughout the instrument. The second section consisted of 21 questions regarding

motivational readiness. Respondents used a five-point Likert-type scale where 1=Strongly Disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, and 5=Strongly Agree to describe compelling motives that influence behaviors within the college. The third section, college resources, contains 14 questions referencing issues around facilities, staffing, and training resources. Again, respondents used the same five-point Likert-type scale to describe institutional resources for change. Section four is designed to measure perceptions of staff attributes. Organizational behavior models converge on similar dimensions of attitude and functioning that influence organizational change (Fishbein, 1995; Lehman et al., 2002). Research into those models has led to development of 22 questions regarding growth, efficacy, and orientation. Participants were asked to rate their perceptions of these areas on the same five-point Likert-type scale. The last section requests that subjects enter demographic information (gender, ethnicity, tenure at the institution, etc.). These questions were measured on a nominal scale considering the content of the questions asked. The instrument took approximately 15 to 20 minutes to complete. Once they completed and submitted the questionnaire, subjects were no longer involved with the study.

Validity and Reliability

The instrument was reviewed for content and face validity by a panel of seven university administrators and faculty with expertise in retention and assessments of student services, curriculum, and programs. Panelists were asked to examine each question for relevance and ability to measure readiness for retention as defined in the

study (Czaja & Blair, 2005). Wording and order changes were made based on feedback from the panel of experts and comments from the pilot test.

Reliability of the instrument was determined by responses from agricultural colleges at state and land-grant universities. Cronbach's alpha, a coefficient used to calculate reliability, was used to determine the internal consistency of questions within the instrument (Fraenkel & Wallen, 2000; Gall, Gall, & Borg, 2007; Spatz, 2005). Both motivation and resources had lowest reliabilities of the four scales with motivation being .733 and resources being .799. Staff attributes and organizational climate were slightly higher at .886 and .866 respectively.

Data Collection Methods

The study took place on August 8, 2006. Responses were kept confidential using coded replies and stored in a secured database. Data was collected using an online survey instrument adapted from another study by the researcher. Each question on the instrument came from issues and criterion represented in general retention literature and retention in agricultural fields. Standardized definitions of key terms assisted the participants with understanding meanings associated with specific questions.

Questionnaires were coded for ease of analysis. Emails were personalized with respondents' names and titles to encourage participation along with the pre-notices. Reminder emails with replacement links to the instrument are useful ways to encourage participation with respondents who may not remember to complete the instrument (Dillman, 2000). Non-respondents were reminded of voluntary participation in the study as to encourage a greater response from the sample. Data collection ended August 31,

2006. Of the invitations to participate 72 replied and 70 of those who replied were usable data points.

To reduce the amount of error in the results collected, *non-response error* must be accounted for. Late responders were labeled by the timing of their responses in conjunction with the reminder sent to the participant (Lindner, Murphy, & Briers, 2001). Responders were separated by the week they responded. Respondents submitting surveys within the first two weeks were considered early responders. Respondents submitting surveys in the last two weeks of the study were considered late responders.

Data Analysis

Data was analyzed using Statistical Package for Social Sciences (SPSS). Alpha level for all statistical procedures was set *a priori* at .05. A t-test was used on all objectives to detect any differences between state and land-grant institutions. However, question 84 was recoded in order to reflect “White/Caucasian” and “Other” in order to run t-tests and get maximum benefit with the number of responses.

Differences appeared between early and late responders. This may be because of the timing of instrument distribution combined with the starting of fall semester. All respondents work in administration within the college and interact with students on a regular basis. Additionally, a large portion of both early and late responders indicated dual roles with retention and recruitment (82.9 % overall). This detail could explain the differences detected and should be considered a limitation of the study. Insufficient response numbers prevented the researcher from locating where the differences fell,

however details on both late and early respondents were able to be obtained. Further examination may explain the timing of the study as a function of these results.

Early responders exhibited characteristics like holding senior or department head/director level positions in administration, male, White/Caucasian and satisfied with their college's effort to meet students' academic needs. Late responders were similar in some characteristics (White/Caucasian, male, and satisfied with the college meeting the academic needs of students). However, more late responders (eight percent) performed organizational assessments prior to creating new programs for students. Because there were differences present, results may not be generalized to the population and apply only to the sample.

The first objective used qualitative analysis to sort responses into categories or themes. Frequency counts were used to determine which definitions were prominently used. Five main categories emerged from the responses: first year to second year, first year to completion, persistence and graduation, general completion, and satisfactory progress towards degree. Six respondents indicated they were not aware of any college level definition of retention or there was no formal definition used in their academic unit.

For the second objective, used frequency counts and qualitative analysis to sort responses provided by those who said they performed organizational assessments. The majority (92.8 %) of all respondents were either Satisfied or Somewhat Satisfied with their institution's efforts in meeting the academic needs of students on campus. Only three respondents were Dissatisfied or Somewhat Dissatisfied with their institution's efforts in meeting academic needs of students.

In objective three, t-tests and frequency measures were used to describe dispersion of scores and highlight significant sources of pressure that motivate change. Analysis of variance was used to detect differences between administrative levels. A t-test was used to highlight differences between state and land-grant institutions, gender and ethnicity.

A t-test was used in objective four to illustrate the differences state and land-grant institutions, gender and ethnicity. Analysis of variance demonstrated any differences on office facilities and staffing with regard to administrative levels.

One way analysis of variance was used again to determine differences between administrative levels based on retention and organizational development literature for objective five.

Objective five employed t-tests as well to describe differences among state and land-grant institutions, gender and ethnic groups on staff attributes. Analysis of variance was used to detect differences among administrative levels.

Objective six required an inter-correlational matrix to examine overlaps amongst the subscales. Analysis of variance found differences between administrative levels and ethnicity highlighted in documents from noted professional organizations supporting state and land-grant colleges of agriculture. A t-test was used to describe differences among state and land-grant institutions, gender and ethnic groups on organizational climate.

Summary of Key Findings/Conclusions for Objectives

Objective One: Key Findings

The first objective was to develop a reliable instrument to assess organizational readiness for retention among colleges of agriculture at state and land-grant institutions. The reliabilities for each scale indicate the questions produce internal consistency with regard to each content area. Greater clarification on areas like the interaction between department and explanation of specific roles related to retention may ease confusion experienced by some respondents. Further testing should be done to determine if additional questions could be added, removed, or refined to improve reliability among this population. By shortening the instrument it may encourage more respondents to complete it. Consideration should also be given to redefining the intended population of this instrument as some groups, like advisors and coordinators, were not privy to budget and decision-making processes asked parts of each scale. Further iterations are needed to produce an instrument that will accurately measure the readiness level of colleges of agriculture.

Objective Two: Key Findings

The second objective was to describe how administration within colleges of agriculture, defined retention to support programs and services used to progress students. Frequency counts were used to determine which definitions were prominently used. Five main categories emerged from the responses: first year to second year, first year to completion, persistence and graduation, general completion, and satisfactory progress

towards degree. Six respondents indicated they were not aware of any college level definition of retention or there was no formal definition used in their academic unit.

Nineteen (27 %) of the respondents provided definitions that included a discussion of persistence of the student, completion of a degree, graduation, and/or making satisfactory progress towards meeting degree requirements.

Objective Two: Conclusions

Many institutions and academic units have various ways of defining retention. Measuring college student retention is so complicated and context dependent that many higher education researchers will likely not reach consensus on the “best” or “correct” way to define it (Hagedorn, 2005). Tinto (2005b) discusses differences between using “persistence” and “retention” as referencing the focus on student versus actions and responsibilities of the institution, respectively. However, by using definitions that focus on students rather than definitions that focus on institutional actions, policies and programs can be mislead unintentionally from the beginning.

Kuh et al. (2005) states that clear definitions of retention are needed when writing effective policies and designing programs. Seidman (2005) confers definitions should be clear and discuss the type of student development to take place in order to achieve maximum student satisfaction and ultimately degree completion. If the college has no clear and communicated definition of retention, it may be difficult to ascertain how successful the academic unit is in retaining students. Additionally, definitions should be clear and place some parameters around the intended population in order to maximize the benefits of retention to institutions (Caison, 2004).

Only sixteen institutions had definitions that clearly specified a population and a window for tracking the student. Nineteen institutions had definitions that included an indication of satisfactory progress or completion towards a degree and/or graduation and exiting of the system. This indicates a greater need for colleges of agriculture to define what is meant by retention as well as whom the intended population is that is to utilize retention services and programming. Without this type of clarity programs and services could experience failure because they may be based on a population that is bound to leave the institution or not use the services because they do not fit their needs (Caison, 2004). Since most colleges indicated that retention is dictated by the institution as a whole, that perhaps, greater focus should be in what state and land grant institutions are defining for retention and who their intended population will be for such services and programs.

The National Center for Educational Statistics differentiates the terms persistence and retention by using retention as an institutional measure and persistence as a student measure (Hagedorn, 2005). This is significant when discussing retention rates with stakeholder groups, especially funding agencies and communities, so that a clear and accurate picture is portrayed of the institution. Clearer definitions also better define the approach to retaining students (Caison, 2004). Some units rely on entities outside the college to define those rates considering the access to maintained databases. By relying on outside research entities, like one respondent indicated, it can be inferred that linkages across campuses are occurring and colleges are using valid data to refine policies and programs for students.

According to qualitative feedback from three participants, from qualitative feedback, some retention decisions are directed at the university level rather than at the college level. Therefore, how colleges define retention may not be within the control of the college but at the institutional level. This may indicate a greater systemic problem. If academic units are unclear of the institution's direction with regard to retention of students of color, more clarity must be found in order for academic units to be successful with retention.

Objective Third: Key Findings

The third objective described how satisfied administrators within colleges of agriculture were with retention programs and services at their institutions. The majority (92.8 %) of respondents were either Satisfied or Somewhat Satisfied with their institution's efforts in meeting the academic needs of students on campus. Some respondents (4.3 %) were not satisfied with their college's efforts to meet the academic needs of their students.

Objective Third: Conclusions

In order for academic units to meet the academic needs of their students they must know what those needs are and match those needs with current services that are provided. Caison (2004) states it is key for enrollment professionals to have efficient means of evaluating enrollment trends like retention so adjustments can be made in time to prevent student departure from the institution.

With the majority (92.8 %) of respondents being satisfied, this implies that services and programs available in the college are sufficient, based on the

administration's awareness, to meet student needs. Those services could include Supplemental Instruction, peer advising, academic advising, and research opportunities. Those who were not satisfied may feel more programs should be added to meet those needs or that the academic advising is not sufficient for student populations. Further investigation could be done to determine what the needs are compared to the perceived needs of students within the college. Not being up-to-date with current needs of students may create a false satisfaction with existing programs and services.

Objective Four: Key Findings

Objective four was to assess the perceptions of motivational readiness among administrators in colleges of agriculture for readiness for retention. Frequency counts were used to determine which sources of pressure were prevalent among respondents for each area. Analysis of variance was used to find differences between administrative groups with regard to pressure for change and program needs for change. Significant findings for this objective were:

1. Significant difference ($p=.033$) was found between People of Color and White/Caucasian with regards to motivational needs.
2. Significant differences were found between all administrative levels on motivational readiness.
3. 51.4 % of respondents felt pressure from departments to provide rewards or incentives for faculty participation in retention efforts.
4. 44 % of respondents felt pressure from departments to consistently communicate high academic expectations from the first year till senior year.

5. 43 % of respondents felt pressure from students for greater instructional support for courses in the college.
6. 37 % of respondents felt pressure by departments to increase faculty and staff mentoring participation, and felt pressured by parents for information about financial aid resources.
7. 64 % of respondents indicated their colleges have measurable outcomes for student success.
8. 44.3 % of respondents indicated that faculty and advising staff are adequately train to participate in retention activities.

Objective Four: Conclusions

Differences found between early and late responders may indicate that late responders may feel more pressure than early responders due to the amount of organizational assessments they perform. If early responders are not performing the same type or any at all prior to creating new programs and/or services, they may not be aware of the interest or needs of students. Administrative levels may experience awareness issues as well. Varying levels of administration may feel pressures differently due to closeness to stakeholder groups and everyday interactions with students and programs. Further examination should be done to determine where, specifically, administrative levels differ on motivational readiness.

Rewards for faculty to participate in retention activities along with building greater awareness of retention issues for students of color are among the biggest concerns communicated by this sample. Two respondents felt pressure from their

funding agencies to provide incentives to faculty. However, when it came to involving faculty and staff in mentoring, a lower number of respondents (37 %) felt pressured by the same departments. Examining the responses for ethnicity and gender also supports the contention that more role models for students of color in agricultural fields are needed as well (Talbert, Larke, & Jones, 1999).

Agreement was also found among respondents with regard to a network of mentors. The majority of respondents felt a network of role models for students of color was lacking (58.6 %) as supported in the literature. This may be due to the lack of faculty of color at the institutions. Kuh et al. (2005) mentions that getting faculty involved as mentors for students is often a crucial element in retention and if faculty are reluctant to participate because of time constraints, then maybe incentives should be offered. Further study on this factor would yield more insight into the impact of funding agencies on budgetary decisions and the types of incentives or rewards that could be given to faculty for their participation.

Links between higher and secondary education have been discussed as an opportunity to build academic preparedness of college-bound students. Retention literature notes the lack of academic preparedness as one factor in high attrition rates. This is especially true for students of color (AASCU/NASULGC, 2002; Pascarella & Terenzini, 1991; Swail et al., 2003) and may be why differences appeared between ethnic groups. It is those collaborative relationships that can benefit and support students. Retention literature also supports connecting students of color with resources

both on campus and in the community to provide a more cohesive net for retaining them (Landry, 2002).

The motivational readiness scale had a mean of 3.69 on a five-point Likert scale which fell into the Neither Agree or Disagree response category. The model indicates that more responses fell into the Agree response category. Because of the discrepancy between the mean and the mode, an examination of specific questions should clarify where respondents fall with regard to the needs of the program within the college. This may indicate that colleges also need more specific guidance in creating complementary policies and practices as well as how to integrate community resources to support the matriculation of students of color. This supports the element of faculty incentives for participation in mentoring programs.

If measurable student outcomes for success are present and advising staff is adequately trained as indicated by respondents, perhaps the issue with increasing retention rates lies in communicating what the marked route for success is to students. Cloaked routes may hinder students' awareness of where to go and what questions to ask before falling through the cracks. As part of the academic units' commitment to student matriculation, communication of such items functions as an organizational influence on retention and could make significant differences.

Objective Five: Key Findings

Objective five assessed administrators' perceptions of resource readiness for retention at state and land-grant institutions. The specific question means gave more insight into how respondents saw office and staffing resources for retention than the

overall scale mean. The resource scale mean was 3.28, on a five-point Likert scale, which fell into the Neither Agree or Disagree response category. The mode (3.15) fell into the same category. Analysis of variance was used to detect differences between administrative levels. Significant findings in this objective were:

1. Males significantly differed from females ($p=.024$) on the resources for change scale.
2. The mean score (2.59) indicates respondents disagree that retention initiatives (in the college and institutionally) receive sufficient funding and with funding is allocated specifically for underrepresented groups.
3. The mean score (4.06) indicates advising services are easily accessible for students within the college and 56 % agree advisor skill background matches the needs of students in the college.
4. 44 % of respondents said sufficient coordination between the college and student affairs exists.
5. A three-way split was found on the view of shared responsibility (30 % neither agree nor disagree, 44 % agreed while 24 % disagreed).

Objective Five: Conclusions

Respondents indicated that more funding for retention initiatives is needed in order for programs and services to continue. This is an interesting fact considering males significantly differed with females on this scale. Upon closer examination of the population profile, more males are in leadership positions within the college. Further examination should be done to determine where they differ with regard to resources for

changes with retention. Respondents did feel agricultural academic units needed additional funding from the college if they were to support retention initiatives. This indicates that more funding may be needed for retention as a whole but also for agricultural programs in particular. In addition, respondents may feel retention programs in agriculture need better financial and staffing support. Further assessments should consider determining if the funding should be used for additional positions or to provide better monetary compensation for existing positions.

Respondents indicated the skills background of current advisors matched the needs of the college. However, it is unclear if the same advisors would be able to meet the needs of the college if the demographics of the college changed to reflect greater diversity. This is another area where further assessment would be useful. Because students of color have different needs, as discussed in the literature review, it would be reasonable to expect advising needs would change with a larger, more diverse population.

Overall, there seems to be agreement that sufficient coordination between the college and student affairs is present in colleges of agriculture. When asked about organizational assessments, respondents indicated program and course evaluations are done to determine potential success and improvements. Respondents noted this was done to alleviate any undue costs, to accommodate the number of students participating in the program, and to identify and/or target courses and students who are struggling in order to intervene with tutoring or other support services. These assessments may be

done preemptively to use facilities that could be crowded and to use staff resources effectively.

However, if state and land-grant institutions are interested in making systemic changes to accommodate a more diverse student population, conducting additional organizational assessments (readiness instruments, organizational health assessments, climate assessments, etc.) may be needed to convince internal constituencies and generate the need for change (Beckhard & Harris, 1977; Burke, 1994). Using these types of assessments can keep momentum going within an organization to continue making the systemic changes AASCU and NASULGC have discussed in their reports.

Significant differences were found between ethnic groups on shared responsibility for retention in the college. This difference may be attributed to a large portion of people of color were in lower positions and White/Caucasians were in higher leadership positions. Position more so than ethnicity may have a lot to do with how this question was viewed. Further exploration should be done to understand how this phenomenon exists in the general population.

Objective Six: Key Findings

Objective six assessed administrator's perceptions of staff attribute readiness for retention in colleges of agriculture at state and land-grant institutions. Analysis of variance was used to determine if differences existed between administrative levels; no significant differences were found at the .05 confidence level. No significant differences were found from conducting independent t-tests with state and land-grant institutions. Significant findings in this objective are:

1. Significant differences were found between males and females ($p=.044$).
Differences were also found between White/Caucasians and people of color on the ethnicity variable ($p=.019$) and on the staff attributes scale.
2. 77 % agreed that faculty within the college were sufficiently empowered to take an active role in retaining students.
3. 59 % of respondents agreed that clear articulation of individual roles for student success by senior administration occurred in the college.
4. Majority of respondents (73 % and 63 % respectively) agreed the college is aware of areas of improvement to increase retention of students of color and for student success.
5. A split occurred when asked about the perceptions students of color have about the college's commitment to their success among neither agree nor disagree (43 %) and agree (44 %).
6. Respondents were split (30 % neither agreed nor disagreed, 33 % disagreed and 33 % agreed) on whether colleges of agriculture used benchmarked best practices and developmental theories (37 % disagree and 39 % neither agree nor disagree) to guide retention efforts for underrepresented groups.

Objective Six: Conclusions

Males were significantly higher ($t=.024$) than females regarding staff attributes for readiness. This may be due to a gender being a function of administrative level as more women are “Coordinator” and “Academic Advisor” level and more males are at “Senior” and “Department Head/Director” level. Ethnicity follows the same pattern

given more males fall in the White/Caucasian category. People of color may feel differently about staffing attributes needed for retention programs because the needs of students of color differ compared to majority students. Further exploration may explain the differences. Perhaps if the ethnic categories were broken down and a larger sample was taken, it may explain the spread. It is possible the spread is due to ethnic group, but without further exploration it will remain unclear.

The empowerment of faculty, the clear articulation of individual roles for student success, and the continual identification of improvement areas are of particular concern for this scale. Respondents felt that faculty within the college were sufficiently empowered (77 %) to take a role in retaining students. This is an interesting development considering respondents also indicated they felt pressure by departments to provide incentives for faculty to have greater participation in retention programs. Further exploration of this should be considered.

When asked if incentives were provided to faculty by the college to participate in retention activities, respondents indicated that did not happen; 45 % disagreed with this statement. This supports an earlier contention that funding for retention initiatives may be an issue. Money is often used as an incentive and may not be since funding is scarce. Scarce funding may be an indication that the appropriate emphasis may not be placed on retention of students of color.

Respondents agreed or strongly agreed (59 %) that clear articulation of individual roles for student success by senior administration occurred in the college. Further exploration of this finding in comparison to the pressure felt to create clearer routes for

student success in the college is needed. If individual roles are understood, perhaps a connection should be made, by senior administration, between the individual roles and the markers or routes to student success.

Clear individual roles, identified by senior administration, should also be supported by norms that institutionalize new behaviors (Burke, 1994). If assessment is one of the normalized behaviors then it supports the agreement respondents have with the colleges being aware of areas of improvement to increase student success and retention of students of color. A gap is still present, though with between the individual roles and entities within the college. Further investigation should be done to see how normalized behaviors within the college affect those entities to see if the reflects the respondents indication of awareness of improvement areas.

Confusion on unit roles regarding student success may contribute to the mix of responses on how students of color perceive the college of agriculture's commitment to their success and matriculation. Swail et al. (2003) and Tinto (1993) both agree if the student perceives the college as being committed their success, the higher the likelihood the student will stay at the institution and matriculate. Institutional commitment has been found to be an influencing factor with student persistence and retention (Braxton & Hirschy, 2005). If respondents are unsure, this may indicate an area where colleges of agriculture need to improve. Braxton & Hirschy (2005) also state the greater a student's perception of institutional commitment to student welfare, the higher the probability of retaining the student. More questions should be asked to ascertain if this area is discussed on any of the assessments done when identifying areas of improvement.

Swail et al. (2003) identified nine essential elements of successful and established retention programs. Three factors mentioned were reliance on proven research, knowledge of dynamics with the change process, and having the support of a comprehensive student monitoring system to support institutional research. If colleges of agriculture are not making use of already proven theories and models for retention along with developmental theories to guide practices, then questions should be raised on the validity of statements on: (1) awareness of needs of students of color, (2) improvement areas to increase student success and retention of students of color, and (3) appropriate skills background for the student population within the college. Knowledge of research done in retention and student development should be the foundation of programs and services of institutions committed to being student-centered (Kuh et al. 2005). Additionally, with success with retention as an expectation, colleges of agriculture should be aware of developments in these areas. Further exploration of this issue should be done to understand the awareness level of such theories and models in colleges of agriculture.

Objective Seven: Key Findings

Objective seven assessed administrator's perceptions of organizational climate readiness for retention in colleges of agriculture at state and land-grant institutions. Analysis of variance was used to determine any differences between administrative levels and no differences were found. Significant differences were found after conducting independent t-tests on the variables gender and ethnicity. An inter-correlational matrix was generated to determine if any overlap was present among any

questions. Ten questions had as much as 55 % overlap. Six questions overlapped in just the Mission content area and between Mission and Communication content area. Two questions overlapped in the Adaptability to Change content area and only one questions from Communication overlapped with Adaptability to Change content area .Significant findings in this objective are:

1. Significant differences were found between males and females ($t=.014$) with males being higher.
2. 50 % of respondents indicated that retention of students of color has been identified as a priority within the college.
3. The mean (4.07) on a five-point scale indicates diversity as a core value.
4. 46 % of respondents agreed a comprehensive plan to retain students of color had been communicated across the college where 24 % disagreed and 26 % neither agreed nor disagreed.
5. Although 41 % agreed, the remaining respondents were split (37 % disagreed and 29 % neither agreed nor disagreed) on whether or not agricultural departments understand their role with retaining students of color.
6. 43 % of respondents agreed the college of agriculture was responsive to changes in the agricultural industry, while 20 % disagreed and 33 % neither agreed nor disagreed.

Objective Seven: Conclusions

Rewording some questions within this scale may reduce the amount of overlap, however, the overlap is not on all questions. Other questions from the initial instrument could be considered to replace those who do have 50 to 55 % overlap.

Only half of respondents indicated that retention had been identified as a priority in their colleges. This may explain some of the splits in respondent answers on questions regarding how students of color perceive the college of agriculture's commitment to their success, the use of benchmarked best practices and developmental theories to guide retention efforts. It also may explain the split in responses on having a comprehensive plan communicated across the college to retain students of color. Retention efforts for students of color may be secondary compared to other items that have been communicated in the college if retention of students of color has not identified as a priority. This is a unique finding considering the mean response said diversity was considered a core value of the college. However, the term "diversity" was not defined for respondents.

If retaining students of color is not a priority for some colleges it may be difficult for departments to understand or see the relevance in clarifying their role in retaining students of color. Retention must be viewed as a priority by leadership if it is to be successful and to create an atmosphere of shared responsibility (Kuh et al., 2005; Swail et al., 2003). Organizational development literature supports the contention that priorities set by the organization and communicated by leadership dictate how members respond (Burke, 2002, 1994; Rothewell & Sullivan, 2005; Schmuck & Runkel, 1994). How

colleges are to balance all priorities and still emphasize the importance of retaining students is an issue outside the scope of this study, but could also be pursued at some later date.

Split responses on responding to changes in industry also reflect the conflict of priorities within colleges of agriculture. The agricultural industry has changed from a focus on traditional images like ranching and farming to transgenic plants and animals, heightened environmental concerns, and new land ethics (Handelsman & Cherry, 1992). Demographic shifts with increasing diverse populations indicate a need to for companies to be diverse in order to meet their needs. If colleges of agriculture are not producing a diverse and technically qualified workforce, it will be difficult for the agricultural industry to continue meeting the needs of rural and urban areas in extension and other areas. If colleges of agriculture are not responding to the needs of the new face of agriculture, the agricultural industry will be inclined to find workers from a new source.

Additional Implications and Recommendations

Conclusions

Given the differences raised by questions on each of the scales and lack of clearly defined terms for retention, it may be worthwhile for colleges of agriculture to re-examine existing visions and missions driving their efforts to recruit, educate, retain and graduate students. Diverse populations are on the rise and if their needs are not addressed, the students will gravitate towards other disciplines and a valuable source of professionals will be lost.

In order to make the systemic changes universities are advocating readiness must be assessed and/or increased to achieve a successful implementation (Hanpachern, Morgan, & Griego, 1998). One of the most-often-cited barriers to change was employee resistance and dysfunctional culture (Stewart, 1994). When administration is “ready” the change process and the organization benefits from their participation and commitment to decisions (Sashkin, 1984). Perhaps, if colleges of agriculture are interested in improving retention, administrators will better coordinate with the university and be more attentive to the interaction between changes in institutional personnel or the way personnel do their jobs and the composition of the student body (Bean, 2005). Systems theory in organizational development supports this notion by asserting if changes in some components of the system are made that changing the entire system should be considered.

Recommendations for Improving the Instrument

1. Timing of the study should be changed to be more sensitive to “peak times” during the academic year for advising, start-up at the beginning of each semester as well as closing out, and recruiting schedules.
2. Reconfiguring response categories to shorten response time and to obtain clarity in answers is needed. Pressures for change could allow additional categories to include university, court mandates, and state specific mandates. Also consider allowing participants to select multiple sources of pressure.

3. Follow up on questions regarding motivational readiness to determine where differences in administrative levels exists this scale.
4. Refine questions within each scale to be more specific on university or academic unit level (college and/or department) to gain greater clarity in identifying intent with motivation and organizational climate especially.
5. Questions may need to be separated into retention of students done on an institutional level and then ask specific questions regarding how the college of agriculture supports the university efforts. Respondents indicated in their qualitative feedback that retention efforts were more dictated by the institution than determined at the college level.
6. Further analysis is needed on questions where a large %age of respondents fell into the neither agree nor disagree category rather a spread across answer categories. This indicates something is unclear about the question.
7. Thought should be given as to how academic advisors and faculty advisors are sampled for this type of questionnaire as some institutions may have advising models where it is one or the other and not both.
8. Consideration should also be given to what levels of administration should be included. Qualitative data indicates some coordinators and advisors were not knowledgeable on issues of budget, decision-making processes, and coordination between areas as it was not part of their job descriptions.

Recommendations for Action

The following are recommendations for what colleges of agriculture can do based on the current findings of this instrument:

1. Determine which definition or set of definitions of retention needs to be used to support all retention programs and services
2. Conduct assessments to determine how satisfied students are with programs and services used to meet their academic needs. Comparisons between White/Caucasian students and students of color provide insights into any differences in needs for these students.
3. Determine what markers are present within the college that point to success for students. Publicize to students, advisors, and faculty what those markers are and where information can be found to help clarify any questions related to those markers.
4. Senior level of administration (deans, associate deans, and assistant deans) may need to clarify roles associated with improving retention to alleviate confusion on how and where departments and individuals fit.
5. Senior level of administration (deans, associate deans, and assistant deans) may need to consider creating a retention position to coordinate retention efforts within the college or reaching out to an institutional resource to monitor interactions between changes in personnel, policy and student body composition through assessment and programming.

Recommendations for Further Study

Further investigation can be done in the following areas raised by results of this study:

1. Students perceived academic needs compared with that of administration of the college
2. The connection between recruitment and retention in the college of agriculture
3. The impact funding agencies have on retention decisions made within the college of agriculture
4. Explore differences between males and females in senior level administration on resources for retention
5. Skills background of advisors needed to meet the academic needs for all students compared to the needs of students of color in colleges of agriculture
6. Defining shared responsibility in colleges of agriculture for retention between departments and the college administration.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

TEXAS A&M UNIVERSITY
VICE PRESIDENT FOR RESEARCH - OFFICE OF RESEARCH COMPLIANCE

1188 TAMU
 College Station, TX 77843-1186
 1500 Research Parkway, Suite B-150

979.458.1467
 FAX 979.962.3176
<http://www.tamu.edu/research-compliance>

Institutional Biosafety Committee

Institutional Animal Care and Use Committee

Institutional Review Board

DATE: June 1, 2006

MEMORANDUM

TO: Darielle A. Harris
 ALEC MS 2116

FROM: Ms. Angelia M. Raines
 Director of Research Compliance

SUBJECT: Initial Review

Protocol Number: 2006 -0336

Title: Change Readiness - A Look at Retention in Colleges of Agriculture

Review Category: Exempt from IRB Review

The Institutional Review Board (IRB) has determined that the referenced protocol application meets the criteria for exemption and no further review is required. However, any amendment or modification to the protocol must be reported to the IRB and reviewed before being implemented to ensure the protocol still meets the criteria for exemption.

This determination was based on the following Code of Federal Regulations:
<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm>

45 CFR 46.101(b)(2) - Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior, unless: (a) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects financial standing, employability, or reputation.

Provisions:

APPENDIX B
PRE-NOTICE TO RESPONDENTS

Dear <Participant>:

In a few days a survey will be emailed asking you to discuss your perceptions of your academic unit's preparedness to retain students of color in agriculturally related fields (i.e.: forestry majors, natural resources majors, agricultural education, entomology, etc.). Your participation in this study is being requested in order to gain an understanding of the preparedness of agricultural degree programs for retention of underrepresented student populations. You have been selected to participate in this study based on your position's relationship with student success and retention.

Please take the time to complete the online survey as it will provide needed information to administrators, faculty, advisors and industry professionals on how these students are being retained and graduated to become part of the agricultural industry. We appreciate your response as it helps in updating these service providers on current practices and perceptions related to the retention of a growing population of students.

If you are not the person that handles the retention of students for your academic unit, it is our hope that you will forward this information on to that person. Please feel free to contact the researchers so they may send correspondence to the correct individual.

We look forward to receiving your response and thank you in advance for your assistance with our research.

Sincerely,

Barry Boyd, Ph.D.
Associate Professor

Danielle A. Harris, M.S.
Graduate Research Assistant

APPENDIX C
PILOT COVER LETTER

Dear <Participant>:

A few days ago you received an email asking you to participate in a study discussing your perceptions of your academic unit's infrastructure to retain students of color in agriculturally related fields (i.e.: forestry majors, natural resources majors, agricultural education, entomology, etc.).

Please take the time to complete the online survey by August 28th. The responses of administrators who manage the infrastructure supporting retention efforts at the college level provides needed information on how prepared the academic units within state and land-grant institutions are to retain students of color in agricultural programs.

We appreciate your response as it helps in informing administrators, faculty and industry professionals on current practices used to develop this population of students.

We look forward to receiving your response and thank you in advance for your assistance with our research.

Sincerely,

Barry Boyd, Ph.D.
Associate Professor

Danielle A. Harris, M.S.
Graduate Research Assistant

http://esurvey.tamu.edu/MARS/DanielleReadiness/august_readiness.htm

APPENDIX D
PILOT INSTRUMENT

Assessment of Organizational Readiness for Retention of Students of Color

The information being collected within this questionnaire will be completely confidential. None of the answers provided will be connected to you in anyway or reported to your institution. Your participation in this study is being requested in order to gain an understanding of the preparedness of colleges of agriculture for retention of underrepresented student populations.

Please indicate your selections for the following statements:

1. How does your college define retention?
(*Open-ended question for respondents*)

2. How satisfied are you with your college's efforts to meet students' academic needs (e.g.: advising, Supplemental Instruction, tutoring, study skill development, etc)?
 - Satisfied
 - Somewhat satisfied
 - Neutral
 - Somewhat dissatisfied
 - Dissatisfied

3. Does your college conduct any organizational diagnostic assessments prior to revising policies or creating new programs for students?
 - Yes (Please list types: _____)
 - No
 - Not sure

The questionnaire is divided into four main areas: *motivational readiness, resources for change, staff attributes and organizational climate for change*. For clarity during this survey, please consider the following descriptions before completing the questionnaire:

- "Students of Color" refers to ethnic or racial student groups
- "Retention" refers to the institution's ability to allocate resources and services to integrate students into the culture of the institution from first year until graduation within a six year time period; otherwise known as persistence rates (Kuh et al. 2005)
- "Student Success" refers to the effective usage of services, programs, and other resources available through the institution to attain a degree (Kuh et al. 2005)

Motivational Readiness: Questions in this section refer to **compelling motives** that influence behaviors within the college of agriculture to reach desired retention outcomes. Areas of focus include sources of press for change (internal and external) and program need(s) for improvement.

Administrators often feel pressure from a variety of sources (e.g. students, parents, industry, etc.) to make changes in policies or programs. For each statement listed below please indicate the source of pressure if any. Mark all that apply. If no pressure is present then select "No Pressure."

	No Pressure	Students	Parents	Departments	Communities	Industry	Funding Agencies
4. Greater linkage between campus services							
5. Create additional financial aid resources to students							
6. Consistent high academic expectations from first to senior year							
7. Increased instructional support and tutoring services							
8. Faculty reward system for participation in retention efforts							
9. Increased faculty/staff mentoring participation							
10. Collaboration with community schools to increase academic preparedness							
11. Increase outreach efforts to communities of color							

For each of the following statements, please rate the level of your agreement with the statement in reference to the retention of those individuals, from:

1 = Strongly Disagree 2 = Disagree 3 = Neither Agree or Disagree 4 = Agree 5 = Strongly Agree

	SD	D	N	A	SA
12. I do not feel pressure to change to improve retention rates	1	2	3	4	5
13. The college is aware of its position in the marketplace for students with competing institutions	1	2	3	4	5
14. The college feels pressure to change administrative practices to focus more on student learning	1	2	3	4	5
15. The college is aware of the expectations of students of color and their families for college (mentoring, financial assistance, academic support services, etc.)	1	2	3	4	5
16. The college is aware of current issues in retaining students of color	1	2	3	4	5
17. Senior administration has marked clear routes for student success (capstone courses, orientation, support services, etc.) within the college	1	2	3	4	5
18. Retention rates impact funding	1	2	3	4	5
	SD	D	N	A	SA
19. Our college needs guidance in creating complementary policies and practices to support students of color academically and socially	1	2	3	4	5
20. Retention practices are benchmarked with competing institutions for effectiveness	1	2	3	4	5
21. My college needs a consistent plan of action regarding retention initiatives	1	2	3	4	5
22. Departments within the college use active and collaborative learning approaches (internships, learning communities, community-based activities, etc.)	1	2	3	4	5
23. Our college has curricular innovation driven by faculty	1	2	3	4	5
24. Our college has measurable outcomes (grades, graduation rates, career placement, etc.) for student success in all of our academic program(s)	1	2	3	4	5
25. Our current faculty and advising personnel are adequately trained to participate in retention activities	1	2	3	4	5

Resources for Change: Questions in this section refer to resources (e.g. adequacy of facilities, funding, staffing levels etc.) within the college that assist in achieving program goals for retention.

	SD	D	N	A	SA
26. Facilities are adequate for advising students	1	2	3	4	5
27. We are located in close proximity to student resources on campus	1	2	3	4	5
28. My college integrates resources in the surrounding communities into its culture and student support network	1	2	3	4	5
29. Advising services are easily accessible to our students	1	2	3	4	5
30. Sufficient funding exists for retention initiatives	1	2	3	4	5
31. Funding is allocated specifically for retention of underrepresented groups	1	2	3	4	5
32. Sufficient funding exists for academic units to support retention initiatives	1	2	3	4	5
	SD	D	N	A	SA
33. Sufficient coordination of retention efforts exists between the college and student affairs to influence retention	1	2	3	4	5
34. Faculty in each department are encouraged to participate in retention initiatives	1	2	3	4	5
35. Sufficient time for advising exist for advisors and faculty	1	2	3	4	5
37. The skills background of departmental advising staff reflects the needs for student success in the college	1	2	3	4	5
38. A network of role models have been identified for students of color in the college	1	2	3	4	5
39. My college has initiated community outreach efforts to populations of color	1	2	3	4	5
40. Senior administration in the college have created shared responsibility for retention of students of color	1	2	3	4	5

Staff Attributes: Questions in this section refer to staff attributes (e.g. professional growth, efficacy or confidence in abilities, funding, influence over decisions, orientation or direction of the department, etc.) within the college of agriculture that assist in achieving program goals for retention.

	SD	D	N	A	SA
41. Professional development opportunities for advisors are available to keep advising skills with students of color up to date	1	2	3	4	5
42. Professional development opportunities are available for all personnel to become aware of retention efforts on our campus	1	2	3	4	5
43. Faculty and advisors are empowered to take a role in retaining students in their departments	1	2	3	4	5
44. Senior administration in the college demonstrate positive attitudes and a collaborative spirit regarding retention and student success	1	2	3	4	5
45. Senior administration in the college clearly articulates individual roles for student success in the college	1	2	3	4	5
46. College leadership is aware of areas of necessary improvements to increase retention of students of color	1	2	3	4	5
47. My college continually identifies areas for improvement regarding student success	1	2	3	4	5
	SD	D	N	A	SA
48. An inclusive curricula reflecting diverse views is part of the college's core values	1	2	3	4	5
49. The college is perceived by students of color as being committed to their matriculation and graduation	1	2	3	4	5
50. The college offers incentives to faculty and advisors to participate in retention activities	1	2	3	4	5
51. Senior administration in the college are modeling the way to increase retention of students of color	1	2	3	4	5
52. Personnel within the college are supported when they participate in retention activities	1	2	3	4	5
53. The college has placed appropriate emphasis on retention of students of students of color	1	2	3	4	5
54. Faculty and advisors express interest in participating in retention initiatives	1	2	3	4	5
55. Departments are encouraged by the college to make decisions affecting retention	1	2	3	4	5

	SD	D	N	A	SA
56. Best practices from benchmarked schools for retention programs are used to guide retention efforts at my institution	1	2	3	4	5
57. Data and current information on developmental theories for students of color guide retention efforts for these groups	1	2	3	4	5
58. There is not a specific model or theory that guides retention efforts in the college of agriculture	1	2	3	4	5
59. The administration of the college is aware of the needs of students of color based on the research literature	1	2	3	4	5
60. Socialization activities (orientation, transition programs, traditions, etc.) reflect the college's expectations for student success	1	2	3	4	5
61. Leadership within each department is committed to improving retention of students of color	1	2	3	4	5
62. Resources and infrastructure of the college are aligned with its mission, curricular offerings and student abilities	1	2	3	4	5

Organizational Climate for Change: Questions in this section refer to the climate for acceptance of changes regarding retention within the college of agriculture (e.g. clarity of mission, autonomy with decisions, openness of communication, adaptability to change etc.).

	SD	D	N	A	SA
63. Diversity is a core value of the college	1	2	3	4	5
64. The mission and values of the college are transparent	1	2	3	4	5
65. Budgetary decisions within the college support retention initiatives	1	2	3	4	5
66. Retention of students of color have been identified as a priority	1	2	3	4	5
67. The college has policies that communicate increasing student retention as part of its mission	1	2	3	4	5
68. A comprehensive plan of programs and services for retention has been communicated across the college	1	2	3	4	5
69. Retention of students of color is clearly related to the values of the college	1	2	3	4	5
70. Departments within the college understand their role in retaining students of color	1	2	3	4	5

	SD	D	N	A	SA
71. Advisors are included in decisions made regarding student retention	1	2	3	4	5
72. Students of color are well informed on resources available to them	1	2	3	4	5
73. Open discussions regarding policy or program changes are needed in the college	1	2	3	4	5
74. The college has open lines of communication with the departments to support retention initiatives	1	2	3	4	5
75. Changes affecting services to students are communicated effectively throughout the college	1	2	3	4	5
	SD	D	N	A	SA
76. Innovative programs and ideas regarding retention are encouraged	1	2	3	4	5
77. Small changes within the college could influence student retention	1	2	3	4	5
78. Adjusting procedures is easy to do within the college	1	2	3	4	5
79. Service or program changes are easily implemented in the college	1	2	3	4	5
80. Departments are efficient in responding to changing needs of our students	1	2	3	4	5
81. The college is efficient in responding to changes in industry	1	2	3	4	5

Demographic Section:

Please provide us with the following demographic information for data purposes:

82. Please indicate the level within administration you hold:

- Senior level administration (Dean, Associate, Assistant)
- Outreach Coordinator
- Retention/Recruitment Coordinator
- Retention Specialist
- Academic Advisor
- Other: _____

83. Are you responsible for recruitment as well?

- Yes
- No
- Will be

84. Gender:

- Male
- Female

85. Please indicate your ethnicity:

- White/Caucasian
- African-American/Black
- Hispanic/ Chicano/Latin origin (Mexican, Puerto Rican, Other Latino)
- Asian or Pacific Islander
- American Indian or Alaskan Native
- Other: _____

86. Please indicate any questions you found confusing

(open ended question)

87. Please explain why you found that question(s) you found confusing.

(open ended question)

APPENDIX E
PILOT REMINDER

Dear <Participant>:

A few days ago you received an email asking you to participate in a study discussing your perceptions of your academic unit's infrastructure to retain students of color in agriculturally related fields (i.e.: forestry majors, natural resources majors, agricultural education, entomology, etc.). If you have already completed the survey, please disregard this email.

If you have not taken the survey, please take the time to complete the online survey by July 25th. The responses of administrators who manage the infrastructure supporting retention efforts at the college level provides needed information on how prepared the academic units within state and land-grant institutions are to retain students of color in agricultural programs. We appreciate your response as it helps in informing administrators, faculty and industry professionals on current practices used to develop this population of students.

http://esurvey.tamu.edu/MARS/DanielleReadiness/august_readiness.htm

We look forward to receiving your response and thank you in advance for your assistance with our research.

Sincerely,

Barry Boyd, Ph.D.
Associate Professor

Danielle A. Harris, M.S.
Graduate Research Assistant

APPENDIX F
STUDY INSTRUMENT

Assessment of Organizational Readiness for Retention of Students of Color

The information being collected within this questionnaire will be completely confidential. None of the answers provided will be connected to you in anyway or reported to your institution. Your participation in this study is being requested in order to gain an understanding of the preparedness of agricultural degree programs for retention of underrepresented student populations.

Please indicate your selections for the following statements:

1. How does your college define retention?
(*Open-ended question for respondents*)

2. How satisfied are you with your college's efforts to meet students' academic needs (e.g.: advising, Supplemental Instruction, tutoring, study skill development, etc)?
 - Satisfied
 - Somewhat satisfied
 - Neutral
 - Somewhat dissatisfied
 - Dissatisfied

3. Does your college conduct any organizational diagnostic assessments prior to revising policies or creating new programs for students?
 - Yes (Please list types: _____)
 - No
 - Not sure

The questionnaire is divided into four main areas: *motivational readiness, resources for change, staff attributes and organizational climate for change*. For clarity during this survey, please consider the following descriptions before completing the questionnaire:

- "Students of Color" refers to ethnic or racial student groups
- "Retention" refers to the institution's ability to allocate resources and services to integrate students into the culture of the institution from first year until graduation within a six year time period; otherwise known as persistence rates (Kuh et al. 2005)
- "Student Success" refers to the effective usage of services, programs, and other resources available through the institution to attain a degree (Kuh et al. 2005)

Motivational Readiness: Questions in this section refer to **compelling motives** that influence behaviors within your college to reach desired retention outcomes. Areas of focus include sources of press for change (internal and external) and program need(s) for improvement.

Administrators often feel pressure from a variety of sources (e.g. students, parents, industry, etc.) to make changes in policies or programs. For each statement listed below please indicate the source of pressure if any. Mark all that apply. If no pressure is present then select "No Pressure."

	No Pressure	Students	Parents	Departments	Communities	Industry	Funding Agencies
4. Greater linkage between campus services							
5. Create additional financial aid resources to students							
6. Consistent high academic expectations from first to senior year							
7. Increased instructional support and tutoring services							
8. Faculty reward system for participation in retention efforts							
9. Increased faculty/staff mentoring participation							
10. Collaboration with community schools to increase academic preparedness							
11. Increase outreach efforts to communities of color							

For each of the following statements, please rate the level of your agreement with the statement in reference to the retention of those individuals, from:

1 = Strongly Disagree 2 = Disagree 3 = Neither Agree or Disagree 4 = Agree 5 = Strongly Agree

	SD	D	N	A	SA
12. The college is aware of its position in the marketplace for students with competing institutions	1	2	3	4	5
13. The college feels pressure to change administrative practices to focus more on student learning	1	2	3	4	5
14. The college is aware of the expectations of students of color and their families for college (mentoring,	1	2	3	4	5
15. The college is aware of current issues in retaining students of color	1	2	3	4	5
16. Senior administration within our college has marked clear routes for student success (capstone courses,	1	2	3	4	5
17. Retention rates impact funding	1	2	3	4	5
	SD	D	N	A	SA
18. Retention practices are benchmarked with competing institutions for effectiveness	1	2	3	4	5
19. Departments within the college use active and collaborative learning approaches (internships,	1	2	3	4	5
20. Our college has curricular innovation driven by faculty	1	2	3	4	5
21. Our college has measurable outcomes (grades, graduation rates, career placement, etc.) for student	1	2	3	4	5
22. Our current faculty and advising personnel are adequately trained to participate in retention	1	2	3	4	5

Resources for Change: Questions in this section refer to resources (e.g. adequacy of facilities, funding, staffing levels etc.) within the college that assist in achieving program goals for retention.

	SD	D	N	A	SA
23. Facilities are adequate for advising students	1	2	3	4	5
24. We are located in close proximity to student resources on campus	1	2	3	4	5
25. My college integrates resources in the surrounding communities into its culture and student support network	1	2	3	4	5
26. Advising services are easily accessible to our students	1	2	3	4	5
27. Sufficient funding exists for retention initiatives	1	2	3	4	5
28. Funding is allocated specifically for retention of underrepresented groups	1	2	3	4	5
29. Sufficient funding exists for agricultural academic units to support retention initiatives	1	2	3	4	5
	SD	D	N	A	SA
30. Sufficient coordination of retention efforts exists between the college and student affairs to influence retention	1	2	3	4	5
31. Faculty in each department are encouraged to participate in retention initiatives	1	2	3	4	5
32. Sufficient time for advising exist for advisors and faculty	1	2	3	4	5
33. The skills background of departmental advising staff reflects the needs for student success in the college	1	2	3	4	5
34. My college has initiated community outreach efforts to populations of color	1	2	3	4	5
35. Senior administration in the college have created shared responsibility for retention of students of color	1	2	3	4	5

Staff Attributes: Questions in this section refer to staff attributes (e.g. professional growth, efficacy or confidence in abilities, funding, influence over decisions, orientation or direction of the department, etc.) within the college of agriculture that assist in achieving program goals for retention.

	SD	D	N	A	SA
36. Professional development opportunities for advisors are available to keep advising skills with students of color up to date	1	2	3	4	5
37. Professional development opportunities are available for all personnel to become aware of retention efforts on our campus	1	2	3	4	5
38. Faculty are empowered to take a role in retaining students in agricultural departments	1	2	3	4	5
39. Senior administration in the college demonstrate positive attitudes and a collaborative spirit regarding retention and student success	1	2	3	4	5
40. Senior administration in the college clearly articulates individual roles for student success in the college	1	2	3	4	5
41. College leadership is aware of areas of necessary improvements to increase retention of students of color	1	2	3	4	5
42. My college continually identifies areas for improvement regarding student success	1	2	3	4	5

	SD	D	N	A	SA
43. An inclusive curricula reflecting diverse views is part of the college's core values	1	2	3	4	5
44. The college is perceived by students of color as being committed to their matriculation and graduation	1	2	3	4	5
45. The college offers incentives to faculty and advisors to participate in retention activities	1	2	3	4	5
46. Senior administration in the college are modeling the way to increase retention of students of color	1	2	3	4	5
47. Personnel within the college are supported when they participate in retention activities	1	2	3	4	5
48. The college has placed appropriate emphasis on retention of students of students of color	1	2	3	4	5
49. Faculty and advisors express interest in participating in retention initiatives	1	2	3	4	5
50. Departments are encouraged by the college to make decisions affecting retention	1	2	3	4	5
	SD	D	N	A	SA
51. Best practices from benchmarked schools for retention programs are used to guide retention efforts at my institution	1	2	3	4	5
52. Data and current information on developmental theories for students of color guide retention efforts for these groups	1	2	3	4	5
53. There is not a specific model or theory that guides retention efforts in my college	1	2	3	4	5
54. The administration of the college is aware of the needs of students of color based on the research literature	1	2	3	4	5
55. Socialization activities (orientation, transition programs, traditions, etc.) reflect the college's expectations for student success	1	2	3	4	5
56. Leadership within agricultural departments are committed to improving retention of students of color	1	2	3	4	5
57. Resources and infrastructure of the college are aligned with its mission, curricular offerings and student abilities	1	2	3	4	5

Organizational Climate for Change: Questions in this section refer to the climate for acceptance of changes regarding retention within the college of agriculture (e.g. clarity of mission, autonomy with decisions, openness of communication, adaptability to change etc.).

	SD	D	N	A	SA
58. Diversity is a core value of the college	1	2	3	4	5
59. Budgetary decisions within the college support retention initiatives	1	2	3	4	5
60. Retention of students of color have been identified as a priority	1	2	3	4	5
61. The college has policies that communicate increasing student retention as part of its mission	1	2	3	4	5
62. A comprehensive plan of programs and services for retention has been communicated across the college	1	2	3	4	5
63. Retention of students of color is clearly related to the values of the college	1	2	3	4	5
64. Agricultural departments within the college understand their role in retaining students of color	1	2	3	4	5
	SD	D	N	A	SA
65. Advisors are included in decisions made regarding student retention	1	2	3	4	5
66. The college has open lines of communication with the departments to support retention initiatives	1	2	3	4	5
67. Changes affecting services to students are communicated effectively throughout the college	1	2	3	4	5
	SD	D	N	A	SA
68. Innovative programs and ideas regarding retention are encouraged	1	2	3	4	5
69. Service or program changes are easily implemented in the college	1	2	3	4	5
70. Departments are efficient in responding to changing needs of our students	1	2	3	4	5
71. The college is efficient in responding to changes in industry	1	2	3	4	5

Demographic Section:

Please provide us with the following demographic information for data purposes:

72. Please indicate the level within administration you hold:

- Senior level administration (Dean, Associate, Assistant)
- Department Head or Director
- Student Retention/Recruitment Coordinator or Program Coordinator
- Academic Advisor
- Other: _____

73. Are you responsible for recruitment as well?

- Yes
- No
- Will be

74. Gender:

- Male
- Female

75. Please indicate your ethnicity:

- White/Caucasian
- African-American/Black
- Hispanic/ Chicano/Latin origin (Mexican, Puerto Rican, Other Latino)
- Asian or Pacific Islander
- American Indian or Alaskan Native
- Other: _____

76. Please indicate the status of your institution:

- State
- Land-grant

77. Please provide any feedback or questions you may have regarding this study:

(Open-ended question for respondents)

78. Please enter your email address : _____

APPENDIX G
STUDY PRE-NOTICE

Dear <Participant>,

In a few days a survey will be emailed asking you to discuss your perceptions of your academic unit's preparedness to retain students of color in agriculturally related fields (i.e.: forestry majors, natural resources majors, agricultural education, entomology, etc.). Your participation in this study is being requested in order to gain an understanding of the preparedness of agricultural degree programs for retention of underrepresented student populations. You have been selected to participate in this study based on your position's relationship with student success and retention.

Please take the time to complete the online survey as it will provide needed information to administrators, faculty, advisors and industry professionals on how these students are being retained and graduated to become part of the agricultural industry. We appreciate your response as it helps in updating these service providers on current practices and perceptions related to the retention of a growing population of students.

If you are not the person that handles the retention of students for your academic unit, it is our hope that you will forward this information on to that person. Please feel free to contact the researchers so they may send correspondence to the correct individual.

We look forward to receiving your response and thank you in advance for your assistance with our research.

Sincerely,

Barry Boyd, Ph.D.
Associate Professor

Danielle A. Harris, M.S.
Graduate Research Assistant

APPENDIX H
STUDY INVITATION

Dear <Participant>,

A few days ago you received an email asking you to participate in a study discussing your perceptions of your academic unit's infrastructure to retain students of color in agriculturally related fields (i.e.: forestry majors, natural resources majors, agricultural education, entomology, etc.).

Please take the time to complete the online survey by August 28th. The responses of administrators who manage the infrastructure supporting retention efforts at the college level provides needed information on how prepared the academic units within state and land-grant institutions are to retain students of color in agricultural programs. We appreciate your response as it helps in informing administrators, faculty and industry professionals on current practices used to develop this population of students.

http://esurvey.tamu.edu/MARS/DanielleReadiness/august_readiness.htm

We look forward to receiving your response and thank you in advance for your assistance with our research.

Sincerely,

Barry Boyd, Ph.D.
Associate Professor

Danielle A. Harris, M.S.
Graduate Research Assistant

APPENDIX I
STUDY REMINDERS

Dear <Participant>,

We still need your input on the Survey on Readiness to Retain Students of Color.

If you have already completed the survey, please accept our gratitude and ignore this message. If you have not completed the survey, won't you please do so by August 28th? Your responses are very important to the success of this research.

To take the survey, please click on this link:

http://esurvey.tamu.edu/MARS/DanielleReadiness/august_readiness.htm

The responses of administrators who manage the infrastructure supporting retention efforts at the college level provides needed information on how prepared the academic units within state and land-grant institutions are to retain students of color in agricultural programs.

We look forward to receiving your response and thank you in advance for your assistance with our research.

Sincerely,

Barry Boyd, Ph.D.
Associate Professor

Danielle A. Harris, M.S.
Graduate Research Assistant

Dear <Participant>,

The Survey on Readiness to Retain Students of Color is still open.

If you have already completed the survey, please accept our gratitude and ignore this message. If you have not completed the survey, please do so by August 28th.

To take the survey, please click on this link:

http://esurvey.tamu.edu/MARS/DanielleReadiness/august_readiness.htm

The responses of administrators who manage the infrastructure supporting retention efforts at the college level provides needed information on how prepared the academic units within state and land grant institutions are to retain students of color in agricultural programs. We appreciate your response as it helps in informing administrators, faculty and industry professionals on current practices used to develop this population of students.

We look forward to receiving your response and thank you in advance for your assistance with our research.

Sincerely,

Barry Boyd, Ph.D.
Associate Professor

Danielle A. Harris, M.S.
Graduate Research Assistant

Dear <Participant>,

We know you are very busy at this time of the year. However, we hope that you can find the time to take the Survey on Readiness to Retain Students of Color. However, the deadline is fast approaching. The survey will close on September 4 and we still need your responses.

If you have already completed the survey, please accept our gratitude and ignore this message. If you have not completed the survey, won't you please do so by September 4th? Your responses are very important to the success of this research.

To take the survey, please click on this link:
http://esurvey.tamu.edu/MARS/DanielleReadiness/august_readiness.htm

We would like to get as high a response rate as possible to improve the reliability of the results. Please take the survey at your earliest convenience if you have not already done so.

We look forward to receiving your response and thank you in advance for your assistance with our research.

Sincerely,

Barry Boyd, Ph.D.
Associate Professor

Danielle A. Harris, M.S.
Graduate Research Assistant

VITA

Danielle Alexander Harris

14502 Moss Valley Dr.

Houston, Texas 77429

EDUCATION*Doctor of Philosophy, Agricultural Education*

Texas A&M University, College Station, Texas

December 2006

Master of Science, Student Affairs Administration in Higher Education

Texas A&M University, College Station, Texas

May 2000

Bachelor of Arts with Honors, Journalism and Mass Communication

The University of Iowa, Iowa City, Iowa

December 1997

PROFESSIONAL EXPERIENCE**TEXAS A&M UNIVERSITY**, College Station, Texas

2004 – Present

Research & Teaching Assistant (Department of Agricultural Leadership)

- Develop & assess student performance in Professional Leadership Development course
- Conduct research & establish partnerships with academic departments & Texas Cooperative Extension
- Devise retention plans for undergraduate and graduate populations for departments within College of Agriculture

TEXAS A&M UNIVERSITY, College Station, Texas

2002 - 2004

Assistant Lecturer (Center for Academic Enhancement)

- Facilitated learning theory and transition skill development for students
- Initiated research and curriculum development for FYE Leadership course
- Supervised implementation of university risk management policies

ACCENTURE, Houston, Texas

2000 – 2001

Human Performance Analyst

- Directed client training engagement for software reporting functionality
- Coordinated and facilitated classroom training sessions for 50-75 people using new software system
- Marketed and developed online training programs for new users