IMPROVING THE PIPELINE FOR STUDENTS OF COLOR AT 1862 COLLEGES OF AGRICULTURE: A QUALITATIVE STUDY THAT EXAMINES ADMINISTRATORS' PERCEPTIONS OF DIVERSITY, BARRIERS, AND STRATEGIES FOR SUCCESS

M. Antonio Silas

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
In
Agricultural, Leadership, and Community Education

Eric K. Kaufman, Co-Chair
Hannah H. Scherer, Co-Chair
James C. Anderson, II
C. L. Bohannon

October 24, 2016
Blacksburg, VA

Keywords: Agriculture, Agricultural Education, 1862 Land-Grant Institutions, Path-Goal Theory of Leadership, Reasoned Action Theory, Students of Color, Underrepresented Students

IMPROVING THE PIPELINE FOR STUDENTS OF COLOR AT 1862 COLLEGES OF

AGRICULTURE: A QUALITATIVE STUDY THAT EXAMINES ADMINISTRATORS'

PERCEPTIONS OF DIVERSITY, BARRIERS, AND STRATEGIES FOR SUCCESS

M. Antonio Silas

ABSTRACT (Professional)

Due to an impending STEM shortage facing the United States, it is critically important

that students of color are recruited to scientific disciplines. This STEM shortage affects

agricultural fields, as many agricultural disciplines are scientifically based. There is currently a

lack of students of color within agricultural disciplines when compared to the increasingly

diverse make-up of the United States. This qualitative study utilizes the path-goal theory of

leadership (House, 1971) and reasoned action theory (Fishbein & Azjen, 2010) to examine the

perceptions of administrators regarding the barriers that students of color face within colleges of

agriculture at 1862 land-grant institutions. Another important purpose of this study is to identify

strategies that department heads, deans, and administrators within colleges of agriculture can use

to increase the recruitment and retention of students of color. The study utilized

phenomenology, as this method focuses on participants' subjective experiences and

interpretations of the world. Eighteen participants at 17 institutions were interviewed about their

perceptions of diversity, the barriers that students of color face within colleges of agriculture, and

strategies for success. The findings of this study reveal that (1) diversity is a multifaceted and

evolving concept that varies from individual-to-individual, (2) students of color face barriers to

access, (3) successful recruitment and retention strategies for students of color require

investments from administrators, and (4) data validates program success.

ABSTRACT (Public)

The United States is facing an impending shortage in the fields of science, technology, engineering, and math. There will not be enough professionals to fill various roles that impact society in a variety of important and meaningful ways. This STEM shortage affects agricultural fields, as many agricultural disciplines are scientifically based. Students of color are currently underrepresented in agricultural disciplines when examining the increasingly diverse make-up of the United States. It is essential that students of color are utilized to fill these vacancies, not only for the sake of representation and inclusion, but to ensure that the United States can remain competitive in a global market and address the various scientific challenges that the country will have to face. This study examines the perceptions of college administrators relating to recruitment and retention barriers that students of color face within colleges of agriculture. This study also examines the strategies that are used to assist students in circumventing these barriers. Eighteen participants at 17 institutions were interviewed about their perceptions of diversity, the barriers that students of color face within colleges of agriculture, and strategies for success. The findings of this study reveal that (1) diversity is a multifaceted and evolving concept that varies from individual-to-individual, (2) students of color face barriers to access, (3) successful recruitment and retention strategies for students of color require investments from administrators, and (4) data validates program success.

ACKNOWLEDGEMENTS

Undergoing the process of obtaining a doctorate truly helped me recognize the value of having people in your corner who support you and are invested in your success. When I arrived in Blacksburg in August 2013, it was a new start. While I did not know anyone when I arrived, I quickly became a part of a welcoming and caring community known as the Hokies. I met a lot of people who changed my life in significant ways. I genuinely feel blessed to have been afforded the opportunity to grow and learn at one of the world's greatest institutions.

I would like to thank my co-advisors, Drs. Hannah Scherer and Eric Kaufman. I thank God that I was fortunate enough to meet not one, but two phenomenal individuals that were not afraid to invest in my future. From the day I arrived at Virginia Tech, both of you have supported me and pushed me to be the best student and researcher that I could possibly be. The immense amount of knowledge that I have gained from our interactions will benefit me greatly in my life and professional career. From family dinners to summer barbeques, I will have fond memories of my time in Blacksburg due to your love and tutelage. From the bottom of my heart, thank you.

Dr. James Anderson, I'll never forget the night that you took Tinesha and I to eat during a campus tour and you got upset because I called the Hokie Bird a turkey. "HE IS NOT A TURKEY; HE IS A HOKIE!" Those words fill be etched into my mind for eternity. You are an incredible person. You really gave me some tough love, but I truly appreciate you for it. I appreciate you believing in me enough to reward me with the opportunity and responsibility of teaching several of your courses. It was those experiences that reassured me that I am cut out to be an educator. Thank you very much and I look forward to our future conversations.

To Dr. C. L. Bohannon, thank you so much for being a part of my committee. I am fortunate to have met you, another Southern gentleman from the Delta. You helped to make

qualitative methodology make sense. You were an invaluable resource to me during my data collection and analyzation. I look forward to collaborating with you on some interdisciplinary research. Thank you.

I would like to sincerely thank the faculty and staff of the Department of Agricultural, Leadership, and Community Education for their assistance and support during my time there. Dr. Rick Rudd, you have always been supportive of my endeavors and research. Thank you for helping to cultivate such a loving and caring environment. To Michelle Greaud, thank you for your diligent assistance and support over the years. Anytime I had an issue, I never worried because I knew that your technical wizardry would solve it. Mrs. Debbie Carroll, thank you very much for your assistance. I appreciate our pleasant conversations and your kind heart; you are a gem.

I would like to thank all of my fellow colleagues in ALCE, especially my cohort, which consists Adam Cletzer, Tinesha Woods-Wells, and Amy Vu. I formed meaningful relationships with each one of you. We struggled and prevailed together. Good luck and best wishes to your future endeavors. I would also like to thank Robert Bass for being such a great friend and supporter. You truly exemplify the principles of Brotherhood, Scholarship, and Service. Best wishes on the rest of your Ph.D. journey.

I would not have even thought about attending Virginia Tech had it not been for Dr. Keyana Reynolds. It was you that told me about our phenomenal department and subsequently got me to apply and take a leap of faith. Thank you so much.

Dr. Randy Grayson, thank you for the great work you do at Virginia Tech. Without your financial assistance, this would not have been possible.

Brian Armstrong, you are destined for great things. Thank you for your friendship and support. You are truly of the best people I had the pleasure of meeting in Blacksburg. Allison Randall, I love you. I feel like God placed you in my life. I appreciate all of the laughs and experiences that we've had. Never change. To the members of the Black Graduate Student Organization, thank you for providing thought-provoking conversations, learning experiences, and stress relief. You were my refuge during many challenging times at Tech. Continue to grow and do the work that needs to be done.

To William Rosser, I feel like when I met you, I met the little brother that I'd been missing my entire life. You are such a talented individual. Thank you for our numerous laughs and conversations about life. Best wishes on your futures endeavors; I know you will do well. To Jabari Byrd, you inspire me. Your kind heart and selflessness is admirable. Continue to challenge yourself and grow. Always remember, "If you gone do it, you might as well do it big." To Lawrence Caudle, you are like a brother to me. I feel so fortunate to still be friends with another person from my hometown of Pine Bluff, AR. I will always appreciate our friendship. Thank you.

To Johnathan Silas, Micheal Hart, José Arana**,** and Daniel Nolan, thank you for your friendship. You are my brothers. We've shared so many good times and laughs over the years. I feel fortunate to have crossed each of your paths. Based on our previous experiences, I excitely look forward to our future adventures. Each of you is talented and provides enrichment to society.

To the National Society of MANRRS, THANK YOU! I learned so much during my time as a national officer. I genuinely love serving the organization and accomplishing the mission of providing students of colors in agriculture with opportunities. A special thanks goes out to Ebony

Webber, Dr. Quentin Tyler, and Norman Barclift, thank you for your guidance during my year of service. To the 2015 National Officer Team, you are genuinely my family. I am blessed to have met every single one of you.

To the Mu Nu and Rho Zeta Chapters of Phi Beta Sigma Fraternity, Inc., thank you for allowing me to be your advisor. I grew as a mentor and leader because of the numerous experiences we've shared. Continue to do the good work of Sigma. Each and every one of you is talented and remarkable and I look forward to your future success.

Greta Poku-Adjei, you are my heart. You supported me throughout my time at Tech. Thank you for every word of encouragement, for every phone call, for every thumb wrestling battle, for every home-cooked meal, for everything. I love you and I am blessed to have you in my life. To Adusi and Magaretta Poku-Adjei, thank you for your love, prayers, and support.

I would like to sincerely thank my incredible mother, Phyllis Silas. There was a time in my life where I thought obtaining a Ph.D. was not something I could accomplish. You are the reason that I was able to find the strength to accomplish such an immense goal. Thank you for your prayers, support, and various kinds of assistance over the years. When I think of a leader, you are the first person that comes to mind. The various lessons that you instilled in me throughout my life helped to carry me through my program. Thank you and I love you so much.

Lee Silas, I think about you everyday. It truly hurts that you were not here to share this experience with me, but I know you're with me in spirit. Thank you for your unconditional love, your lessons, our laughs, and our memories. I miss you so much and I hope that you are proud of this accomplishment. Everything I do is in your memory. Thank you.

If I could, I would dedicate an entire chapter to everyone that has helped me accomplish this milestone. If we've crossed paths and you're taking the time to read this, THANK YOU!

DEDICATION

"Education is the key to unlock the golden door of freedom." – George Washington Carver

For Lee Cottrice Silas

Table of Contents

x

List of Tables and Figures

CHAPTER ONE

INTRODUCTION

According to the National Academies (2011), the ability of the United States to meet the

challenges of a growing nation depends on the investment of talented individuals in STEM

disciplines. In comparison to the rest of the world, the United States is lagging behind in terms of

research and education. In order for America to remain competitive in STEM, investments must

be made in research and innovation and a specific emphasis should be placed on growing a

stronger workforce. Even though minorities in America are the largest growing segment of the

population, they are still highly underrepresented within STEM fields. To solve the issue of

sustaining the STEM workforce, underrepresented populations must be included in the efforts

(National Academies, 2011). As many disciplines within agriculture are scientific in nature, this

has a direct effect on the field. There is a significant lack of students of color within agricultural

disciplines. To address the needs of a growing nation and a declining STEM workforce, students

of color must be successfully recruited and retained in agriculturally-based college programs.

Despite the increasing percentage of minorities in the United States, this change has not

been reflected in agricultural fields. For example, when considering the demographic breakdown

of all of the farmers in the United States, out of roughly 3.2 million farming operations, 92.42

percent are run by white farming operators; 3.07 percent are run by Spanish, Hispanic, or Latino

farming operators; 2.22 percent are run by American Indians; 1.43 percent are run by African-

Americans; 0.74 percent are run by Asian-Americans; and 0.12 percent are run by Pacific

Islanders (Census of Agriculture, 2012). According to the United States Census (2010), out of

308,745,538 Americans, roughly 63.7 percent are white, 16.3 percent are Hispanic or Latino,

12.2 percent are African American, 4.7 percent are Asian, 0.7 percent are American Indian or Alaska Native, 0.2 percent are Native Hawaiian or Pacific Islander, 0.2 percent belong to an unidentified race, and 1.9 percent identified as belonging to more than one race. The two aforementioned statistics provide an example of the stark contrast between the demographics of both the United States as a whole and agriculture.

The lack of students of color within agricultural disciplines can be seen within the demographics of school-based national agricultural organizations. Lawrence, Rayfield, Moore, and Outley (2013) conducted a study examining the demographics of the National FFA Organization, an organization founded to prepare future generations for the challenges of feeding a growing population (National FFA Organization, 2016). Their study found the National FFA Organization chapters were 80.41 percent White, 12.51 percent Hispanic, 4.13 percent Black, 2.19 percent Native American, 0.63 percent Asian/Pacific Islander, and 0.14 percent Other. The aforementioned statistics point at a significant issue in terms of minority representation within agriculture. Despite on-going changes in the United States' demographics, these changes are not reflected within agriculture.

Due to an impending shortage of science, technology, engineering, and math (STEM) professionals, America has a need to increase the overall amount of students pursuing degrees related to these fields (Museus, Palmer, Davis, & Maramba, 2011); this impending shortage has an effect on agriculture as a scientifically-based field. According to Palmer, Maramba, and Dancy (2011), college access and success for students of color in STEM disciplines is important to the nation's economic competitiveness in the global economy and higher education equity agendas; these agendas require acknowledging the huge lack of students of color in STEM fields.

Despite some progress, underrepresented students continue to have issues accessing and remaining involved in higher education (Strayhorn, 2008); this trend is especially prevalent in STEM disciplines (Museus et al., 2011). According to Colby and Ortman (2015), by 2044, more than half of all Americans are projected to belong to a minority group, which the authors considered as any group besides non-Hispanic Whites. Colby and Ortman also note that by 2060, nearly one-fifth of the nation's total population is projected to be foreign born. Since there will be a large influx of these populations, it is important the United States place an emphasis on recruiting STEM professionals from these groups (Hurtado et al., 2008). With students of color not having due representation in STEM fields and a possible shortage of STEM professionals, it makes sense to pull from this population to assist in solving both issues.

This is an issue that is plaguing agriculture and other STEM disciplines. Despite the increasingly diverse make-up of the United States (U. S. Census Bureau, 2008), students of color are underrepresented in agricultural disciplines. According to the Food and Agricultural Education Information System (FAEIS, 2016), colleges of agriculture awarded 17, 492 degrees (84 percent) to white students in 2012; while Asian-American students received 1,319 (6 percent); Hispanic students received 1,066 (5 percent); African-American students received 4 percent; and American Indian or Alaskan Native students received 168 (1 percent). With a looming shortage of STEM professionals (Museus et al., 2011), this issue could have negative effects on agriculture and the United States as a whole. Strategies can be used to assist underrepresented students with the barriers they face as a minority in agriculture. However, we need to know the strategies that college of agriculture administrators use to assist students in circumventing barriers, so that they can effectively combat the lack of diversity within the

agricultural sciences. There is a particular need for insight on administrators' perceptions of their roles related to diversity within colleges of agriculture, which barriers administrators perceive to be the largest hindrances to the recruitment and retention of underrepresented students, which strategies administrators use to assist students in circumventing these barriers, and which methods have been most effective.

According to Strayhorn (2010), when compared to their white counterparts, underrepresented students tend to have more barriers, perceived or otherwise, that affect their decisions and ability to pursue agricultural careers. Barriers that can affect the likelihood of a student selecting a field include a lack of mentors of the same or similar ethnicity (Strayhorn, 2010), as well as finances, inadequate preparation, and lack of encouragement and support from culture or family (Perna & Titus, 2005). These barriers can contribute to a declining minority enrollment on the college level (Moss, 2011). There are also substantial achievement disparities between underrepresented students and white students. On average, in elementary, middle, and high schools, black students achieve at roughly the same level as the lowest performing white students (Strayhorn, 2010). These students' levels of preparation can have an effect on them doing well in college. Underrepresented students in colleges of agriculture are not immune to the aforementioned issues.

One barrier that underrepresented students face is the campus climate. Swail, Redd, and Perna (2003) note that campus climate is directly related to the academic and social experiences that students have. There is also a chance that underrepresented students will experience culture shock as a result of living in and interacting with new settings. A lack of diversity within the student population, faculty, staff, and curriculum can restrict the nature and quality of minority

students' experiences both inside and outside of the classroom. As a result, these factors can threaten their academic performance and social experiences, which are both incredibly important parts of any students' experiences while in college (Swail, Redd, & Perna, 2003). If students feel uncomfortable in an educational setting, not only will they have to worry about maintaining the rigor that is required of an academic degree, but they will also have to deal with things like feelings of inadequacy, finding mentors that can speak to their experiences on a predominantly white campus, and feelings of exclusion. According to Rankin and Reason (2005), a lack of peer relationships and role models can also be problematic to underrepresented students, both academically and socially. This can affect a student's commitment to their respective institution and educational goals. The stronger a student's commitment is to their school, the more likely that student is to graduate. Not being able to integrate into a university setting can lower the level of educational commitment that a student has (Rankin & Reason, 2005). These are only some of the issues that underrepresented students will have to contend with throughout their collegiate careers.

Ellis (2013) discusses how social and academic integration can make it difficult for underrepresented students to become socially engrained within the setting of a university. Becoming integrated into the fabric of a university is a process that continues through a student's senior year. Underrepresented students' ability to become socially and academically integrated within a college environment increases their likelihood of being successful with their academic endeavors. It is important that colleges and universities have a welcoming environment that allows all of their students to be successful. If a student does not feel that they are a part of their

university, they may not be motivated to do things like take part in academic opportunities and experiences or seek help when their classes become too difficult.

Alleviating Barriers for Students of Color

With underrepresented students facing so many barriers related to higher education, it is important to acknowledge interventions that can assist students in circumventing these barriers. Palmer, Maramba, and Dancy (2011) conducted a qualitative study to examine factors that positively impacted the retention and persistence of underrepresented students in STEM disciplines. The authors utilized in-depth interview methods to gather data on the experiences of six students of color that majored in STEM. Three main themes arose in the interviews: (a) group support, (b) involvement in STEM related activities, and (c) strong high school preparation. The factors most helpful for student success included positive influence from peers, specialized activities to guide understanding of STEM professions, and high expectations from teachers in strong high school science programs (Palmer, Maramba, & Dancy, 2011).

There are other examples of strategies that can assist students of color in being successful in STEM. For example, Cole and Espinoza (2008) found a link between supportive educational environments and the retention of students of color in STEM fields. This support can include advice from students of similar ethnic groups, role models of color, and support from staff and administration. Bonous-Hammarth (2000) notes that students of color who receive mentoring and tutelage in high school are more likely to succeed in STEM education in college.

By assisting students of color in circumventing barriers in higher education, universities will be able to inch closer to their goals of facilitating a student-centered experience for all. With students being the primary beneficiaries of institutions of higher education, it is important that

colleges and universities are providing quality services and education to all students, especially those that face difficult barriers. If there is a hope to increase the amount of underrepresented students in agricultural education programs, college administrators must develop ways to engage these populations. Research shows the campus climate at institutions and students' prior educational experiences have a direct correlation with the likelihood of them pursuing or staying in a major (Griffith, 2010).

Effective leadership from college administrators can also help alleviate barriers for students (Delender, 2013). It is not enough for administrators to simply provide funding for educational programming for underrepresented students; they should also create infrastructure to track the progress of these students. The American Council on Education (2005) recommends campus leaders "create ways to track and examine equitable outcomes for specific groups of students and make equality in results a core indicator of institutional accountability" (p. 18). Not only will such measures ensure underrepresented students are receiving the support they need, but these measures will also keep institutions accountable for their diversity efforts.

Theoretical Framework

This section will be used to introduce two theories that can be used to assist in solving the problem of diversity in agriculture: the path-goal theory of leadership (House, 1996) and the reasoned action approach (Fishbein & Ajzen, 2010).

Path-Goal Theory of Leadership

House (1971) developed the path-goal theory of leader effectiveness, which explores the effects of leader behavior on subordinate satisfaction, motivation, and performance. It also focused on specifying a leader's style or behavior that best fits employees and the environment

in which they work. House's (1996) reformulated theory specifies leader behaviors that enhance

subordinate empowerment and satisfaction. The theory states that the way a leader behaves has a

direct effect on the performance, satisfaction, and motivation of the people they are leading.

Within this theory, the leader's role is to successfully guide their followers to the completion of

their objectives. The leader should ideally focus on guiding their followers using the best paths to

reach the goals of the followers, the leaders, and the organization. The behavior that leaders

exhibit when motivating followers varies depending on what a particular situation requires.

Leaders are responsible for providing both direction and support to their followers (Figure 1-1).

The specific behavior that a leader displays can be seen as a motivator to followers.

Students of Color — Path to Success — Potential Barriers — Path to Success — Goals

Path-goal Leadership
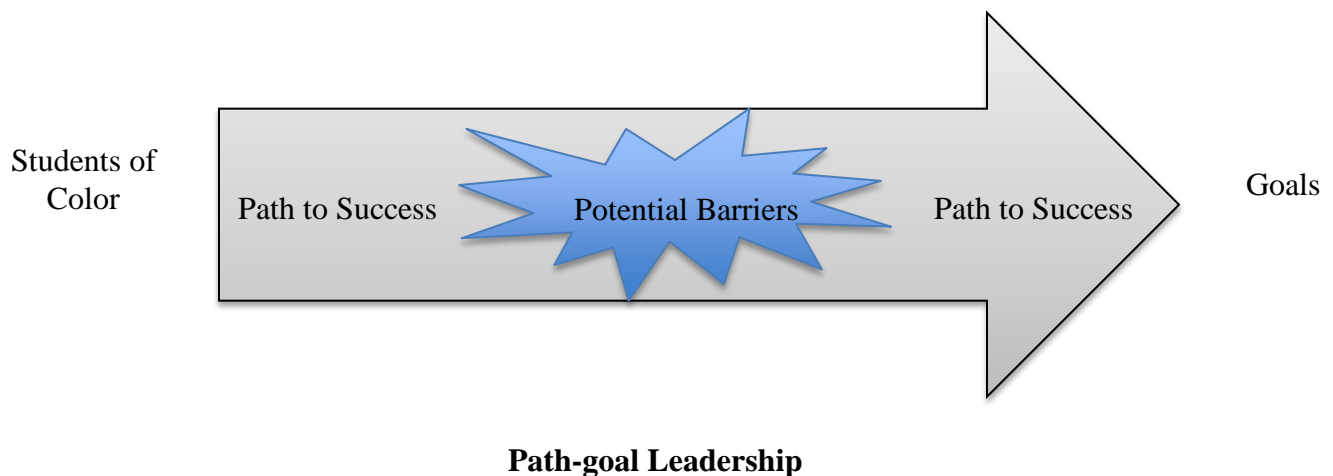
- Defines goals (Retention and graduation)
- Clarifies path
- Removes obstacles and provides support

Figure 1-1. A revision of path-goal theory of leadership for students of color in higher education.

Adapted from "A Path Goal Theory of Leader Effectiveness" by R. J. House, 1971,

Administrative Science Quarterly, pp. 323-352.

This dissertation applies the path-goal theory of leadership within an educational context. The theory will be utilized to examine how college leaders and administrators help students of color with the barriers that they face prior to and after entering colleges of agriculture at 1862 land grant institutions. As shown in Figure 1-1, the followers (students of color) are attempting to achieve their goals, but along the path to completion, obstacles have the potential to derail progress. Within path-goal leadership theory, leaders are responsible for helping to define goals, clarifying the path that will be taken to achieve those goals, removing the obstacles that prevent followers from following the path, and providing support. With barriers sometimes preventing underrepresented students from entering agricultural education programs (Strayhorn, 2010), the theory was utilized within the context of this issue to learn about the different ways administrators remove barriers for students of color attempting to enter or remain successful in agricultural college programs.

Reasoned Action Approach

According to the reasoned action approach (Fishbein & Ajzen, 2010), the beliefs and perceptions an individual has regarding a particular behavior affect the likelihood of the behavior actually being performed. These beliefs are formed from a variety of different sources, including personal experiences, formal education, various news sources, experiences with family and friends, and other traits. Regardless of how the beliefs are obtained, they have an effect on the likelihood of the behavior being performed. Attitudes, perceived norms, and perceived behavioral control all play a role in forming a belief. Three types of beliefs are usually formed regarding a behavior:

1. People hold positive or negative expectations regarding the consequences they might have to face if the action is performed.

2. People form beliefs that important people in their lives would approve or disapprove of the behavior being performed.

3. People form beliefs about personal and environmental factors that could help or impede the likelihood of the behavior occurring.

When attitudes, perceived norms, and perceived behavioral control have been formed regarding a construct, all of these factors have an effect on the likelihood of a behavior being practiced. Attitudes are defined as a person's disposition to respond either favorably or unfavorably as it pertains to a psychological object. Perceived norms are constructs that an individual feels pressured to adopt due to society. Perceived behavioral control is an individual's perception of their control over a behavior. The more favorable the perceived norm and behavioral control are, the more likely an individual is to perform the action (Fishbein & Ajzen, 2010).

Ramayah, Yeap, and Ignatius (2013) used the reasoned action approach to examine how knowledge is shared at institutions of higher learning in Malaysia. The researchers sought to understand how knowledge was being shared by academics through various sources, which included publications and interactions with staff or other members of the university community. The authors of this study noted various aspects of the participants in this study, including the individuals' perceived control over the behavior in question, their behavioral beliefs, and factors that shaped their beliefs. At the end of the study, the authors noted specific factors that influenced how knowledge was shared: extrinsic rewards, anticipated reciprocal relationship, and

sense of self-worth. The study recommended various measures to increase knowledge sharing at the university (Ramayah, Yeap, & Ignatius, 2013). While new research may not utilize the theory in the same manner as the aforementioned study, it can look at participants' behavioral beliefs, what shaped these beliefs, and how they perceive their ability to operate within these beliefs.

The reasoned action approach can be used to obtain a better understanding of the beliefs behind administrators' willingness to assist in the recruitment and retention of underrepresented students. The researcher plans to use this theory to learn about administrators' attitudes regarding diversity issues and the barriers that underrepresented students face, how they perceive the issue, and how much control administrators feel that they have pertaining to potentially solving the issue. By better understanding the motivations behind the strategies that administrators use to circumvent the barriers that underrepresented students face, the researcher plans to develop potential strategies to assist in solving the problem at hand.

Problem Statement

There is a significant shortage of students of color within colleges of agriculture. When examining enrollment at 1862 land grant institutions, the shortage is apparent (FAEIS, 2016). Despite the fact the United States is becoming progressively more diverse, the amount of underrepresented students enrolled in colleges of agriculture is not an accurate representation of the country's population. According to Strayhorn (2010), underrepresented students face more barriers than their white counterparts. These barriers include a lack of resources, inadequate financial support, and a lack of support from family and friends. Although administrators within colleges of agriculture are positioned to address these barriers, there is little research on the administrators' perceptions of the barriers students of color face. With America facing an

impending STEM shortage (Museus et al., 2011) that will ultimately affect agriculture, it is important to have more insight into the barriers students of color face and the individuals that have the ability to help circumvent those barriers.

Purpose Statement and Research Questions

The purpose of this study was to obtain a better understanding of the perceptions of administrators regarding diversity in agriculture and the strategies they use to successfully recruit and retain underrepresented undergraduate students within post-secondary institutions, which will assist in improving the amount of underrepresented students involved in the field. This study sought to address gaps in the literature by answering the following questions related to perceptions of success for underrepresented students in colleges of agriculture at 1862 land grant institutions:

1.) How do administrators perceive their role within the scope of recruiting and retaining students?

2.) What barriers most significantly impede the success of students entering and matriculating through college?

3.) What strategies do administrators use to recruit and retain students? Which methods have proven to be most effective?

Significance of Study

The findings of this study assist colleges of agriculture at 1862 land grant institutions by providing research findings related to (a) how administrators' perspectives of the issue at hand affects how and if they seek to make change in the status quo of diversity in the agricultural sciences, (b) effective methods to utilize and ineffective methods to avoid when recruiting and

12

retaining students of color, and (c) effective methods for administrators to assist with the academic barriers that these students face. The study should ultimately be used as a tool to address the long-standing issue related to the lack of students of color in colleges of agriculture. This can increase the amount of students of color successfully entering and matriculating through colleges of agriculture, which in turn will combat the potential shortage of STEM professionals (Strayhorn, 2010), thereby ensuring that the agricultural industry in the United States is prepared to feed an ever-growing population.

This research begins a dialogue regarding diversity in higher education, particularly within the field of agriculture. It is no secret that students of color are poorly represented within STEM and agricultural education programs or careers (Korpela, Suryanarayana, & Anderson, 2008). Even though there have been efforts to increase the representation of students of color within agriculture, this has not translated to sustainable success. Literature related to this topic notes that underrepresented students encounter many more barriers than white students do (Bauman, Bustillos, & Bensimon, 2005). It is important for administrators and leadership within colleges of agriculture to assist underrepresented students in removing these barriers to entry, if there is ever any hope of changing the status quo. This research can be a first step in better assisting administrators with recruiting more underrepresented students into programs that prepare them for agricultural careers.

According to Cohen, Garcia, Purdie-Vaughns, Apfel, and Brzustoski (2009), the achievement gap has been a persistent issue for underrepresented communities within the United States for over 50 years. While there is not one definitive cause that contributes to the gap, a lack of resources, socioeconomic status, and other issues all play a part. The achievement gap is likely

to blame for some of the difficulties that underrepresented students face at institutions of higher learning.

By conducting this study, the researcher hopes to begin conversations with 1862 land-grant institutions to combat educational inequalities for underrepresented students before and after they arrive on college campuses. This could take the form of educational initiatives or policies that aid in preventing some of the barriers that are prevalent with underrepresented populations.

Operational Definitions

This section includes definitions that will be periodically utilized throughout this dissertation.

- <u>1862 land-grant institutions</u> are schools that were a part of the 1862 Morrill Land-Grant Act, which provided grants of land to states to finance the establishment of colleges for agriculture and the mechanical arts.

- <u>Administrators within colleges of agriculture</u> denote any individual at a university that works to ensure that students are recruited and retained in a college of agriculture. They assist students in reaching their academic goals and provide support that students need to be successful.

- <u>Diversity</u> is the inclusion of individuals that represent a variety of demographics, including national origin, religion, color, socioeconomic status, sexual orientation, etc.

- <u>Historically black colleges and universities (HBCUs)</u> are post-secondary educational institutions that were founded with the intent of serving the African-American community.

- Leadership is the position or role of an individual in charge of guiding or directing a group.

- Path-goal theory of leadership examines the role that a leader's style or behavior has on followers as it pertains to assisting them in achieving a goal.

- Predominantly white institutions (PWIs) are colleges and universities where the student enrollment is comprised primarily of Caucasian students.

- Reasoned action theory examines the role that attitudes and subjective norms have on the likelihood of someone performing an action.

- Socioeconomic status is an individual or group's place in society based on factors including occupation, income, education, and where they reside.

- Students of color, within the context of this research, denotes any person that is considered a minority, including African-Americans, Hispanic Americans, Asian Americans, Native Americans, and any other ethnicity that is not commonly represented within the field of agriculture in the US.

Overview of Research Methods

The researcher used qualitative methodology to learn more about the perceptions of college administrators regarding the barriers that underrepresented students face. This was accomplished by conducting in-depth interviews with administrators in colleges of agriculture at 1862 land grant institutions. The research process included audio recording, memoing, transcription, and coding to identify trends within the data. The researcher the used path-goal theory of leadership (House, 1971) and reasoned action theory (Fishbein & Azjen, 2010) to guide the study and interpreting findings.

15

Limitations of the Study

The study includes a subset of 1862 land-grant institutions; 30 percent of the 56 institutions were included in this study. This study is not generalizable to all colleges of agriculture at 1862 land grant institutions. Also, because enrollment data available from the USDA (2016) reflects information from 2012, this data does not provide the most up-to-date demographics of the universities selected for this study. The researcher also acknowledges his potential bias and perspective as an African-American male that has experienced many of the barriers that are represented in this study.

Summary

The purpose of this research was to understand the perceptions of leaders and administrators within colleges of agricultures as they pertain to the barriers that underrepresented students face when applying to and attending universities to study agricultural disciplines. This chapter provided a description of the research, the problem, the purpose of the research, research questions, and operational definitions.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews relevant aspects of the researcher's topic. First, leadership is discussed, particularly the different ways that leadership is viewed, relevant theory, and why leadership is important to diversity. The researcher then discusses some of the prevalent barriers that underrepresented students must contend with, including socioeconomic status, the achievement gap, agricultural literacy, and perceived barriers. Lastly, the recruitment and retention of underrepresented students is examined. The researcher discusses why administrators should care about recruitment and retention, the importance of inclusivity in higher education, and how diversity impacts students.

Leadership

There is a lack of consensus as it pertains to how leadership should be defined. Stogdill (1974) concluded that for as many people that have attempted to define the construct, there is roughly the same amount of definitions for the term. Leadership is a topic that has been studied for hundreds of years, as early as Greek philosophers Plato and Socrates. It is an ever-changing construct that continues to retain relevancy and importance in this day and age.

In its current iteration, leadership encompasses years of thought and practices. Leadership is a mixture of beliefs, attitudes, perceptions, and realities. It also seems that leadership does not maintain a moral compass; Northouse (2004) uses examples of both Adolf Hitler and Saddam Hussein as leaders. The practice of leadership is considered a cultural activity. Jackson and Parry (2011) note that leadership is suffused with values, beliefs, language, rituals, and artifacts. As a result, leadership maintains an immeasurable depth and variability. Depending on different

cultural aspects of leadership, people are able to utilize the discipline as they see fit. This could potentially contribute to leadership's consistently changing nature.

According to Grint (1997), there are four problems facing leadership that would make the likelihood of a consistent definition of the construct difficult. First, there is an argument regarding whether leadership is a reflection of the traits of a leader or whether leadership is more of a process. There are different schools of thought regarding how leadership is perceived within organizational settings. Secondly, there is a question of whether or not the leader is directly in-charge of an organization or process, or simply the person that is leading the charge towards reaching a goal, similar to that of a representative for a cause. Third, there is a question of whether or not a leader acts intentionally (meaning that there is a direct, causal influence on the behavior of the followers) or if the leader handles things on a case-by-case basis (meaning that the situation dictates the approach) (Grint, 1997).

Northouse (2004) has identified four common themes regarding the way leadership is viewed: leadership is a process, leadership typically involves influence, leadership occurs in a group context, and leadership involves goal attainment. Northouse goes on to define leadership as "a process whereby an individual influences a group of individuals to achieve a common goal" (p. 5). Northouse's definition of leadership points to the individual as the source of leadership rather than the process coming about in other ways. Yukl (2002) maintains that most definitions of leadership reflect the assumption that it involves a social influence process whereby intentional influence is exerted by one person [or group] over other people [or groups] to structure the activities and relationships in a group or organization. While there are a variety

18

of different thoughts regarding what specifically encompasses leadership, literature and experience shows that it usually involves utilizing influence to accomplish a goal or end.

Path-Goal Theory of Leadership

The path-goal theory of leadership is a theory that revolves around supervision, specifically the relationships between formally appointed superiors and followers during their day-to-day interaction (House, 1996). It is concerned with how these supervisors affect the motivation and satisfaction of followers. When it was initially introduced, the theory asserted that "the motivational function of the leader consists of increasing personal payoffs to followers for work-goal attainment and making the path to these payoffs easier to travel by clarifying it, reducing roadblocks and pitfalls, and increasing the opportunities for personal satisfaction" (House, 1971, p. 4). The essential notion of path-goal theory is that individuals in positions of authority will be effective to the extent by which they compliment the working environment of their employees by ensuring they can reach their personal goals. If obstacles stand in the way of the employee, the supervisor ensures these obstacles are removed so the employee's goals are not impeded. The path-goal theory of leadership has been used in various contexts, including developing teacher leaders (Crowther, Ferguson, & Hann, 2009), managing conflict in organizations (Rahim, 2015), and organizational psychology (Levy, 2009).

Within the context of this study, the path-goal theory of leadership is being used to assist underrepresented students (followers) with circumventing the barriers that impede them from achieving their goal (entrance to and success in agricultural disciplines in college). The leaders that are guiding students along this path are college administrators that have the agency and

19

ability to enact change as it pertains to the barriers underrepresented students face in terms of agricultural college programs.

Reasoned Action Approach

Fishbein and Ajzen's (2010) reasoned action approach is a framework that involves predicting and changing social behaviors in humans. This framework operates under the assumption that the behaviors, perceived norms, and perceived behavioral control determine people's intentions; these intentions in-turn predict the behaviors that these people will adopt.

According to Fishbein and Ajzen (2010), the reasoned action approach requires the researcher to identify a behavior that he or she wishes to change. The theory assumes that human social behavior follows the information or belief that people have regarding the behavior that is under construction. The beliefs that people have can come from a variety of different sources, including personal experiences, television, newspapers, magazines, the Internet, and personal experiences. Individual differences, such as personality and demographic characteristics, can influence the experiences people have, the information they are exposed to, and how they choose to interpret and remember this information (Fishbein & Ajzen, 2010). Using this framework within the context of the phenomenon being researched, the social behavior that is being examined in administrators within colleges of agriculture would be the different methods that they use (or don't use) as it pertains to the recruitment and retention of underrepresented students.

The reasoned action approach has been used within the context of leadership before. Branzei, Ursacki-Bryant, Vertinsky, and Zhang (2004) utilized the theory to explain how leaders' cognitions shaped the formation of the responses related to corporate greening, which is

20

a general term for growing environmental awareness pertaining to a company's environmental impacts. The authors were able to use various aspects of the theory to give a holistic look on how perspectives affect motivations pertaining to their subject matter. The researcher seeks to do the same with leaders within colleges of agriculture and learning more about their motivations behind recruitment and retention strategies of underrepresented students.

Bommer, Rubin, and Baldwin (2014) utilized reasoned action theory in their study, which examined transformational leadership behavior and its role in facilitating organizational transformation through peer leadership. The authors examined cynicism about organizational change (CAOC) and how it affects transformational leadership behavior; the authors heavily utilized reasoned action theory to examine the effect that perceptions and behaviors have when facilitating change within an organization.

Within the scope of this research, the reasoned action approach will be used as a theoretical framework to examine a behavior within administrators in colleges of agriculture, which involves the action taken by these individuals to recruit and retain underrepresented students at predominately white institutions.

Leadership's Role in Diversity in Higher Education

According to Hopewell, McNeely, Kuiler, and Hahm (2009), academia's goal is to nurture, develop, and aid in the creation of knowledge, ideas, and analytical thinking. Academic leaders have the unique and likely stressful responsibility of making statements on a variety of issues they may or may not fully believe in. Leaders must continually face both internal and external challenges when serving in their positions; these challenges have the potential to lead to institutional agendas. Agendas can subsequently cater to the interests of various factions within

higher education. It is also the role and responsibility of leadership to set the tone for their university by aligning with values and goals that both they and the broader academic community believe should be areas of emphasis. In order for there to be an improvement in representation for students of color, leaders and administrators within higher education must make recruitment and retention of underrepresented students a goal and they must set plans into action (Hopewell, McNeely, Kuiler, & Hahm, 2009). Hopewell and colleagues' (2009) study focused on the frequency in which leaders at various predominantly white institutions used specific keywords related to women and minorities involved in STEM. Issues such as gender and race equality have been progressively more present in the public arena; as a result, university officials reference these topics more during their speeches. At the very least, universities are aware that diversity is an issue. According to Hurtado (2007) however, addressing and solving inequality in America has been absent in higher education and in the nation's agenda. If there is a desire to see more underrepresented populations in agricultural fields, this has to be a goal of the administration and leaders at various universities. If there is a desire for change in terms of diversity on college campuses, the goal of an inclusive educational setting must be a priority of college administrators.

There have been a variety of measures set in place by predominately white institutions in the United States, including the creation of offices and positions for chief diversity officers. Diversity has been identified as an issue of importance within higher education, but there are still diversity issues prevalent in various disciplines, including agriculture. According to Amey (2006), the decisions that leaders in higher education make are connected to who they are as people. According to reasoned action theory (Fishbein & Azjen, 2010), the beliefs and

perceptions that people have toward a particular action will affect the likelihood of it being performed. Utilizing reasoned action theory can provide a view of the rationale behind the decisions that these people make pertaining to diversity within colleges of agriculture.

Torres, Howard-Hamilton, and Cooper (2003) discuss the importance of handling implicit bias that faculty may display towards students. With the increasing amount of diverse students entering more college campuses, it is important that everyone is held accountable for increasing his or her level of cultural competence and diversity towards other groups. The practices of universities have not always been in sync with the continually changing demographics on college campuses. In order to hear and care about students of color in predominantly white environments, faculty must challenge their preconceived ideas, prejudices, and biases regarding how they teach, practice, and interact with students from diverse backgrounds. It is important that leaders within colleges of agriculture are proactive in dealing with implicit bias and cultivating a comfortable environment for students of color.

While there are studies revolving around diversity issues within agriculture, acknowledging the lack of underrepresented students within agricultural programs will not do anything to solve the issue; those administrators with agency and resources must be proactive in providing suggestions and implementing change if there is a hope to change the current status quo. It is important for education to advance its civic mission of assisting with the end of racial indifference in society. According to Hurtado (2007), it is higher education's responsibility to advance social progress. Education is not only important to assist with the scientific advances of tomorrow, but also to educate future generations of students that will have the ability to enact

positive social change. The goal of truly advancing social progress relating to diversity in education must take precedence if there is ever any hope of it improving.

Qualitative Research Methods

Within the scope of qualitative research, there are a variety of different methods that can be utilized. According to Creswell (1998), there are five primary methods that qualitative researchers use: ethnography, narrative, phenomenological, grounded theory, and case studies. Each of the aforementioned methods tend to use the same data collection techniques, such as reviewing text, observations, and interviews. The purpose of the study may necessitate a specific method.

Ethnography

For this method, the researcher immerses his or herself in the participants' environment to better understand the goals, challenges, themes, motivations, and cultures present within. Ethnography has roots in cultural anthropology, which is when researchers surround themselves within a culture (Creswell, 1998). Data is typically gathered through direct observation and interactions with the participants. The analysis consists of the researcher describing the characteristics of a culture (UMSL, 2016).

Narrative

Narratives weave together a sequence of events, typically from one or two individuals, to compose a story. According to Sauro (2015), this method utilizes in-depth interviews, reading documents, and discovering themes. The researcher seeks to illustrate the influences that create a story through listing to an individual's story. Though the interviews are typically conducted over

weeks, months, or years, the narrative does not have to be in chronological order. The research is typically presented as a story or narrative organized by themes (Sauro, 2015).

Phenomenology

According to Tochim (2006), phenomenology is sometimes considered a philosophical approach as well as an approach to qualitative methodology. Phenomenology has a long history in several social science disciplines, including psychology, social work, and sociology. This research method emphasizes a focus on participants' subjective experiences and personal interpretations of the world. The phenomenologist seeks to understand how the world appears to his or her participants (Tochim, 2006).

Grounded Theory

Grounded theory is a qualitative research approach that was originally developed by Glaser and Strauss (1967). According to Trochim (2006), the purpose of this methodology is to develop a theory about a phenomena of interest that is grounded or rooted in observation. Grounded theory begins with the researcher asking questions that help to guide the research but are not meant to be confining. The researcher identified theoretical concepts through the gathering of data. Linkages are then developed between the data and the core concepts of the study. Grounded theory tends to lean toward one central category that emerged from the data. The researcher eventually approaches a conceptually dense theory as he or she continues to observe, gather data, and make revisions to the theory. The core concept or category is identified and fleshed out in more detail. Bearing in mind that this methodology resolves around the refinement of the theory, it has the potential to be never-ending. The research decides when the theory is at a point where he or she can comfortably stop (Trochim, 2006).

Case Study

Case studies describe the in-depth experience of one person, family, group, community, or institution (UMSL, 2016). The researcher accomplishes this through direct observation and interaction with the subject. Other data collection methods are utilized as well, such as interviews, documents, reports, and observations. Through the synthesis of the data and experience, the researcher provides an in-depth description (Sauro, 2015).

Barriers Affecting the Recruitment and Retention of Students of Color

This section discuses some of the most prevalent barriers facing underrepresented students that are attempting to enter or matriculate through college degree programs. The barriers that are discussed include how the achievement gap and socioeconomic status can potentially impede student success, perceived barriers, and agricultural literacy.

According to Strayhorn (2010), one reason underrepresented students are not enrolled in the agricultural sciences at predominately white institutions is because they tend to have more barriers when compared to their white counterparts, perceived or otherwise, that affect their decisions and ability to pursue agricultural careers. These barriers include a lack of mentors of the same or similar ethnicity (Strayhorn, 2010), finances, inadequate preparation, and lack of encouragement and support from culture or family (Perna & Titus, 2005). These barriers can contribute to less minority enrollment in undergraduate and graduate courses (Moss, 2011), There are also substantial achievement disparities between black and white students. This achievement gap is a potential barrier for black students to obtain an education.Underrepresented students have many barriers in education that can be detrimental to both their collegiate experience and future success.

26

The Relationship Between the Achievement Gap and Socioeconomic Status

Valencia (2015) lists the achievement gap as a significant challenge that has been facing underrepresented students for a number of years. The achievement gap is an educational disparity that exists between different groups of students, notably on the basis of race, socioeconomic status, and gender. It appears as early as daycare and exists most notably between black and white students. Second and third grade test scores reveal that Latino/a and African-American populations are trailing behind their white and Asian counterparts. The primary subject areas where this is the most prevalent are reading and math (Valencia, 2015). The achievement gap is a substantial problem within underrepresented communities that has continued to gain prominence over time. There are a variety of factors that contribute to its existence. It is difficult to provide a definitive solution, as this issue is incredibly multifaceted in nature.

Berliner (2009) notes that the achievement gap exists primarily between low-income underrepresented students and middle-income Caucasian students. While it is difficult to pinpoint specifically how long the achievement gap has existed, it was first discussed in a 1966 report published by the United States Department of Education. The "Equality of Educational Opportunity" report made a number of suggestions as it pertained to the cause of the achievement gap, namely in-school and community factors directly impacting the levels of achievement in underrepresented students. Influences from students' communities and homes are weighted more heavily, as students spend much more time at these locations when compared to schools. Underrepresented students are affected more negatively by out-of-school factors than Caucasian students (Berliner, 2009). Berliner noted that underrepresented students must face

factors within their communities that contribute to this narrative. The achievement gap is a harrowing issue due to the multitude of factors that contribute to it.

According to Valencia (2015), researchers have not agreed upon a definitive cause of the achievement gap. There are a variety of factors at play that are both cultural and structural in nature. One belief maintains that underrepresented students are predisposed to perform less effectively in school due to their race and socioeconomic status. Another perspective is that a family's income can have a direct effect on the resources that are available to students, including technology, tutoring, and after-school programs. A family's socioeconomic status can also have an effect on the school district that children attend. More affluent school districts tend to have more resources available to them because they have more capital than middle and lower-classed school districts (Valencia, 2015). Aside from educational resources, being raised in a lower-income family can also mean fewer resources in terms of nutrition and health care. Resources are one of many issues that contribute to the achievement gap (Roscigno, Tomaskovic-Devey, & Crowley, 2006). Students' nutrition and health have a direct correlation to their success in school. By not having the proper nutritional or health resources, students can have adverse health effect which in-turn can affect their educational progress (Hanion, Thatcher, & Cline, 1999). The achievement gap is a vicious cycle due to the fact that there is little relief for the communities that students are raised in. If the educational resources are not provided to these students, they will likely be unsuccessful. When they go on to have children, they will likely be in the same situation as a result. These factors strongly impact the likelihood of a student even having the competencies necessary to select agriculture as a possible discipline or career. In

various facets, systematic inequality is a driving force within the narrative of the achievement gap. All of the aforementioned issues collectively contribute to it.

How Socioeconomic Status Contributes to the Achievement Gap

According to Sirin (2005), socioeconomic status is directly linked to academic achievement through a variety of different systems, including students' racial and ethnic background, grade level, and school/neighborhood location. The author provides the example of how students' socioeconomic status can determine the location of their neighborhoods and schools. This in turn has an effect on both the resources that student may receive and "social capital," which consists of the relationships among structural forces and individuals. An example of this is a collaborative organization between students' parents and the school. If such measures do not exist, it can be detrimental for a student, as these relationships are necessary for student success (Sirin, 2005).

Socioeconomic status has an effect on the likelihood of a student being accepted into college (Allen-Ramdial & Campbell, 2014), and an example of this hindrance can be seen in students that live in socioeconomically deprived neighborhoods. Underrepresented students often come from economically deprived areas when compared to their white counterparts. Students that come from these areas are at a disadvantage in terms of mentorship, positive examples of individuals from their communities, and other factors.

How Socioeconomic Status Impedes Underrepresented Student Success in STEM Fields

Minority students have historically been underrepresented within STEM careers due to several factors, including societal expectations for different ethnic groups, historical laws and regulations that barred the entry of minorities into education and employment, and

discriminatory policies and practices (Tsui, 2007). If schools are inadequately prepared to ensure their students' success in these areas, the pipeline to STEM disciplines will not improve.

Some people may not consider agriculture as a part of STEM, despite the fact that agriculture encompasses various scientific fields. The National Science Foundation's stance regarding what disciplines are considered STEM includes areas such as informational technology, economics, sociology, psychology, engineering, geosciences, life sciences, and astronomy (Gonzalez & Kuenzi, 2012). Regardless of whether or not these fields can be considered synonymous, both have many of the same issues related to diversity.

Even though the United States has made some strides towards diversifying the STEM workplace, there is still a disproportionate amount of students of color within the pipeline. According to Allen-Ramdial and Campbell (2014), negative socioeconomic factors account for disproportionately lower numbers of underrepresented students in the science, technology, engineering, and mathematics training pipeline and scientific workforce. These students have a significantly lower likelihood of going to college and pursuing agriculture or other STEM fields. Tsui (2007) notes that one of the greatest indicators of a student's likelihood of pursuing STEM disciplines is their entry-level mathematical and academic competency.

Socioeconomic status (SES) has a direct correlation with levels of education and success. Sirin (2005) notes that SES has an effect on the educational resources accessible to a student. If a student comes from an economically-deprived area, this can have implications on the type of educational resources that are available. With schools receiving revenue from property taxes, students that come from homes below the poverty line may not have all of the benefits or resources of schools in more wealthy areas (Sackett, Kuncel, Arneson, Cooper, & Waters, 2009).

The more affluent schools have the monetary resources to help ensure their students' success. Without the proper resources, such as up-to-date textbooks and technology and afterschool programming, students from a lower socioeconomic status will likely be unprepared for the academic demands that await them. Income and education are closely related (Sirin, 2005). The relationship between the achievement gap and socioeconomic status is evident. If underrepresented students do not have adequate instruction or educational resources available to them, they will likely have issues being successful in STEM-related disciplines.

Perceived Barriers and Agricultural Literacy

This section examines how perceived barriers affect a student's likelihood of pursuing an educational field. Agricultural literacy and its subsequent effect on the likelihood of a student becoming involved in agriculture is also discussed.

Research shows that if a minority perceives a field as being inaccessible because of their race, they are less likely to pursue it (McWhirther, 1997). Regardless of whether or not a barrier is real, it has an effect on a student's educational aspirations (Ojeda & Flores, 2008). For example, parental support and the amount of perceived barriers are directly related to the likelihood of Mexican-American girls' selecting a particular field (Flores & O'Brien, 2002). An example of this can be seen within the demographics of agriculture. Agriculture is a field that has historically been dominated by Caucasian males. Despite the fact that the demographics of the United States are continually changing, within colleges of agriculture, there is still a severe lack of representation as it pertains to students of color. For an underrepresented student, they may view this circumstance as an indication of agriculture not being a welcoming field to diversity.

As a result, they will choose another field and the diversity gap within agriculture will continue to widen.

Agricultural literacy, which is the level of knowledge that an individual has regarding agriculture, has a large impact regarding the likelihood of a student pursuing agriculture as a career. Over the last few decades, there has been a significant decline in the number of students involved in agricultural education (Mallory & Sommer, 1986; Scott & Lavergne, 2004; Torres & Wildman, 2001). Despite the fact that agricultural careers are continually opening (Goecker, Smith, & Goetz, 2010), students are not pursuing them. Goecker and colleagues (2010) also note that the amount of students pursuing agriculture is continually shrinking, especially within minority populations. As compared to several decades ago, a significantly smaller portion of the population resides in rural areas (Gibbs, 2005). Families are more likely to live in larger, more urbanized areas than in farm communities. As a result, students are less likely to have meaningful interactions with agriculture. Considering the aforementioned information, a lack of agricultural experiences and education can potentially decrease the likelihood of a student becoming involved in the field. Torres and Wildman (2001) found in their study that meaningful experiences in agriculture increase the likelihood of students enrolling in agricultural courses. If students have a perception of the field that is not accurate, this could push students away from the field rather than attract them to it. If students have higher levels of knowledge and positive experiences regarding agriculture, they may be more interested in pursuing a career in the field (Cannon, Broyles, Seibel, & Anderson, 2009).

If a student perceives a field as being inaccessible, they are less likely to consider it as an option (Amaro, Abriam-Yago, & Yoder, 2006). When underrepresented students do not see

people that belong to their ethnicity, they may assume that it means the field is not welcoming to individuals from diverse ethnic backgrounds. If a career is not well-represented among minority populations, it is difficult to attract new talent from that background (Gloria, Castellanos, & Orozco, 2005). Within STEM fields, there is not a large population of professionals from minority backgrounds. From a student's perspective, this can mean that STEM isn't a desirable option for them (Anderson & Kim, 2009). Career choice is governed by what individuals value and their perceptions of the realities that exist in that given field (Overbay & Broyles, 2008). The United States Department of Agriculture estimated that between 2010 and 2015, there would be roughly 54,500 jobs available to students in agricultural and STEM fields (Goecker et al., 2010). If students of color are unaware of these opportunities or uneducated about the opportunities that are available in agriculture, these jobs will remain unclaimed and there will continue to be a lack of diversity in agriculture.

It is important to note the relationship between perceived barriers and the gap between occupational attainment and ability for people of color. Burlew and Johnson (1992) provide an example of African-American women in professional careers. They identified racial and gender discrimination, limited opportunities to grow in their field, and difficulty finding mentors that could relate to their challenges. As opposed to white women, African-American women also listed financial issues and chance-related issues as barriers that could potentially impede their success. Participants also viewed race and socioeconomic status as potential issues (Burlew & Johnson, 1992).

According to Perna and Titus (2005), there are a variety of variables that can affect the likelihood of a student attending college. Parental involvement is directly related to the odds of a

student enrolling in a 2-year or 4-year college program. The odds increase with the frequency that parents discuss education-related topics with students. The plans that a student's friends have related to educational aspirations can also impact the likelihood of a student attending college. The likelihood of a student enrolling in college also depends on the educational resources that are available through a student's school and social network (Perna & Titus, 2005).

While underrepresented students are becoming more prevalent in institutions of higher education, there are still significantly fewer students graduating with bachelor degrees when compared to their white counterparts. St. John, Carter, Chung, and Musoba (2006) conducted a study that compared the educational success of White, Black, and Hispanic college students. The study revealed that the similarities between the three groups of students heavily outweighed the differences. The differences between these three groups related to persistence patterns in higher education. If white students had parents that did not pursue higher education, the students themselves were much less likely to attain academic success in college. Being from a white family with higher income greatly improved the odds of students going to college. For Hispanic and African-American students, coming from a family that had higher income was a positive factor, but a parent having a college education was not as significant. Between all three of the groups, there was a strong relationship between socioeconomic status and student presence in college. For the African-American and Hispanic students, having a support system and assistance were factors that allowed students to circumvent the barriers related to their socioeconomic backgrounds and prior experiences (St. John, Carter, Chung, & Musoba, 2006). Though these are one study's findings, it echoes the issues that underrepresented students must face prior to

pursuing a college education. In this instance, socioeconomic status is still present as one of the main barriers that underrepresented students must face.

The aforementioned example provides a context for what some students must contend with when pursuing higher education. According to Seidman (2005), factors including socioeconomic background, familial influences, campus climate, and the ability to cope with a campus environment all affect the likelihood of a student successfully matriculating through college. Though the percentage of students of color in college is increasing, in comparison to white students, underrepresented students do not make up a large portion of college demographics. According to the United States Department of Education (2015), between 2002 and 2012, the percentage of Hispanic students rose from 4 percent to 15 percent, the percentage of Asian/Pacific Islander students rose from 2 percent to 6 percent, the percentage of Black students rose from 10 percent to 15 percent, and the percentage of American Indian/Alaska Native students rose from 0.7 to 0.9 percent. During the same period, the percentage of White students fell from 84 percent to 60 percent.

According to Wells (2008), students that come from more affluent families are more likely to attain the benefits gained by obtaining a college education. This is in contrast to individuals who come from backgrounds where educational attainment may not be viewed as a necessity; these students are less likely to pursue a college education because they may not see the value in it. These individuals also may not have the capital needed to attend or be successful in a college, meaning that minorities start their journey on an uneven playing field in comparison to the majority (Wells, 2008).

While it is great that more students from underrepresented backgrounds are entering college campuses and diversifying the cultural tapestry of the collegiate experience, it is not enough just to get students to the schools. The important and likely difficult part is ensuring that they successfully matriculate through their educational programs. The retention of these students is an area where America's institutions of higher education could drastically improve. This is much easier said than done, as there are systematic factors at play that could potentially contribute to the inability of underrepresented students to consistently and successfully complete their undergraduate programs.

In summary, perceived barriers to entry into educational programs or careers are detrimental to underrepresented populations, regardless of whether or not they physically exist. Perceived barriers contribute to a cycle of a self-defeating mentality for people of color. In the United States, agriculture is not a field that many people of color readily identify with. Some cultural stereotypes or imagery related to agriculture paint it as strictly farming and physical labor. This could further detract people of color from agriculture. A lack of people of color within agriculture could potentially make students think they do not belong in the field. Parents and friends have a large effect on the likelihood of students attending college. Underrepresented students are more likely to identify perceived barriers than their white counterparts, most likely due to disparities within careers and education.

Diversity within the Scope of 1862 Land-grant Institutions

This section provides rationale for why administrators should care about recruitment and retention, the history of 1862 land grant universities and their role, and the importance of diversity and inclusivity in higher education.

Benefits of Diversity on College Campuses

Students from diverse backgrounds are an asset that administration should be diligently trying to recruit and retain. Not only is it a matter of equity to the general public, but there are benefits associated with having diversity on college campuses. According to a study conducted by Sidanius (2008), there is a definitive benefit associated with exposing students of all backgrounds to diversity on their college campuses. The author's study examined the experiences of 2,000 on a college campus. The students were given a survey about their racial attitudes before they arrived on campus and after their first year of classes. The rooms that the students live in are randomly assigned at the university. The students that had a roommate of a different ethnicity had improved perceptions of other races, regardless of their attitudes before arriving on-campus (Sidanius, 2008). The aforementioned study shows that students having extended periods of interaction with students of different backgrounds improved their perception of someone from a different background. With the United States gradually becoming more diverse, it would behoove colleges to invest in improving diversity to better prepare their students.

Other studies have linked diversity with positives effects in several outcomes, including increased interactions with people of different backgrounds (Bowman, 2012), increases in social and political activism (Pascarella, Salisbury, Martin, & Blaich, 2012), and increases in intercultural effectiveness (Bowman, 2013; Salisbury & Goodman, 2009). The benefits associated with diversity are well-worth colleges and universities' investment.

The University of Maryland (2013) examined the effects of experiences with students of different racial and socioeconomic backgrounds. The study asserted that socioeconomic diversity

matters not only because colleges should be more accessible, but because it better equips institutions to support racial diversity due to a broader mix of students having interactions. The study examined questionnaires that were completed by more than 15,000 students at 102 colleges in the United States. The researchers found that students that reported more interactions with others from different socioeconomic backgrounds also experienced a higher degree of interactions with those of different ethnicities. The study stated that socioeconomic status allowed students to find common ground, regardless of their differences (University of Maryland, 2013). Colleges of agriculture should put more infrastructure into supporting students of different socioeconomic backgrounds, thereby improving diversity.

If students can't afford to attend school, there is not much hope in improving inclusivity or diversity within colleges of agriculture. The benefits of having a diverse array of individuals within agriculture will also not be realized. The Association of Public Land-grant Universities (2016) note that the original mission of land-grants was to provide education in the areas or agriculture, military tactics, the mechanical arts, and classical studies to the working class. If such an education is not available to the working class, which is inclusive of students from a variety of different backgrounds, these institutions are not accomplishing their mission.

The Importance of Recruitment and Retention

Recruitment and retention of students should be a priority of colleges, regardless of whether or not a student is a minority. There are substantial earning differences between individuals with a college degree versus those who do not have one (Pascarella & Terenzini, 2005). As a result, education is widely considered a vehicle by which individuals can increase their social and socioeconomic status, regardless of previous experiences, current standing in

society, or life circumstances (Bowen, Kurzweil, & Tobin, 2005). Universities are providing this opportunity for students to better themselves; if a college education is an opportunity for equality, all students should have an opportunity to improve the standing in society, regardless or ethnicity or financial standing. Based on the aforementioned research, if universities are truly promoting equality and providing an opportunity to improve one's standing in society, they should be invested in offering opportunities for students to be successful, regardless of ethnicity.

If universities are meant to be a means for students to improve themselves and society, a college education should not be the cause of inequality. According to Stephens, Fryberg, Markus, Johnson, and Covarrubias (2012), the American system of higher education plays an important role in social reproduction, which is constructing, maintaining, and recreating inequalities between groups. Sociologists claim that institutions of higher education produce inequalities between students because they are built and organized according to middle and upper-class norms, rather than those that would benefit all of society (Bernstein, 1974; Bourdieu & Passeron, 1990; Bourdieu & Wacquant, 1992). If colleges and universities hope to increase the amount of students of color, they should benefit all students equally rather than showing preference to one group over others.

History of 1862 and 1890 Morrill Land-Grant Acts and the Changing Demographics of Higher Education

This section explains the historical significance of the 1862 Morrill Land-Grant grant act as it pertains to the education and preparation of all students, including those that come from underrepresented backgrounds. The section also provides insight into the history of students of color at these institutions.

According to Duemer (2007), the Morrill Land-Grant Act of 1862 was enacted due to the desire for an increased understanding of agricultural practices and to assist in efforts to successfully start the United States Department of Agriculture. Justin S. Morrill, one of the longest-serving members of Congress, believed that public lands could be better utilized, farming methods of his era were wasteful and inefficient, and that the then-current state of educational institutions were inadequate in terms of responding to the need of mechanical arts. According to Duemer, Morill drafted the Morrill Act with the desire to "open college doors to farmers' sons and others who lacked the means to attend colleges then existing." The Morrill Act provided 30,000 acres of land for the establishment of public institutions dedicated to the agricultural sciences (Duemer, 2007).

Harper, Patton, and Wooden (2009) state that the Morrill Act was extended in 1890, which is when it provided funding for historically black colleges and universities (HBCUs), beginning with Alcorn College in Mississippi. These institutions produced 90 percent of African-American degree holders in the 1940s. Before desegregation in 1954, African-Americans comprised less than one percent of the first-year students entering predominantly white institutions (PWIs) (Harper, Patton, and Wooden, 2009). Though times have changed significantly and 1862 land-grant institutions bolster a higher amount of students of color, there is still a significant disparity when examining the demographics of the students that attend these institutions.

PWIs in the United States, including the institutions that were founded as a result of the Morrill Act of 1862, do not have a history of high enrollment of students of color. Segregation in the United States was prevalent until the Civil Rights Act of 1964, which outlawed

discrimination based on race, color, religion, sex, or national origin. The lack of underrepresented students in the agricultural sciences is still an issue that 1862 land-grant institutions face. According to the United States Department of Agriculture (2016), 2012 boasted the following numbers of students graduating agricultural degree programs in the United States: 42,355 white students (83.6 percent), 1,670 African-American students (3.3 percent), 1,797 Asian students (3.5 percent), 4,417 Hispanic students (8.7 percent), and 419 Native American students (.9 percent). There is a noticeable disparity between white students and students of color.

According to the United States Department of Education (2012), the demographics of college students in the United States as of 2012 is as follows: 60 percent white students, 15 percent Hispanic students, 6 percent Asian/Hispanic Islander students, 15 percent African-American students, and 0.9 percent American Indian students. Despite the fact that the amount of students entering college has been steadily increasing since 1976, the demographics of students in colleges of agriculture are not experiencing the same change. According to Warren and Alston (2007), the amount of diversity within agriculture is steadily shrinking even though the amount of careers is increasing. The aforementioned statistic related to the enrollment of students of color in colleges of agriculture (USDA, 2016) can grant a clear indication of diversity within the field.

Due to shifting demographics, more people from a variety of different backgrounds will be entering higher education, either as a student or as an employee. With changing demographics within the landscape of higher education, more interactions will occur between these populations and individuals that have not had interactions with underrepresented backgrounds. This has the

potential to cause issues in both the classroom and the campus community as a whole (Torres, Howard-Hamilton, & Cooper, 2003). Based on the aforementioned literature, it is important for teachers to be prepared to deal with the cultural differences that diversity brings. The researcher believes and acknowledges that diversity is not only limited to race or ethnicity; it can include a different perceptions and perspectives. It is important for educators to know how to handle diversity within the context of higher education.

According to Hurtado and Ruiz (2012), changes in demographics area good thing, as low representation among ethnic groups can create a detrimental effect on campus climate. More diversity on campuses means less instances of discrimination. Current college survey data indicates that discrimination and stereotyping were higher at institutions with highly skewed ratios of underrepresented students. Hurtado and Ruiz also note that college is an ideal environment for students to encounter racial and ethnic difference, build appreciation of difference, and learn how to treat one another as equal citizens (Hurtado and Ruiz, 2012).

According to Hoare (1994), "there is a strong correlation between the extent to which we understand our own conscious and unconscious biases and our abilities to unimposingly hear and care about those who do not share our culturally-grounded views" (p. 37-38). This quote reflects an issue that has the potential to plague higher education today, even as schools attempt to make campuses more culturally inclusive. According to Torress, Howard-Hamilton, and Cooper (2003), even though demographics have changed greatly on college campuses, the practices of institutions and educators have not done the same. It is important that educators are aware of their prejudices and biases regarding how they teach and interact with students on these campuses. In order for teachers to remain effective educators in an ever-changing landscape,

cultural competence is incredibly important. It is also important for educators to know that they have learners from a variety of different backgrounds in their classrooms. Assignments should be inclusive of everyone in the classroom and should allow for differences of opinion and perspective. When instructors are designing assignments, syllabi, or class materials, it is important for them to consider whether or not all students will be included. It is also important for campus environments to be inclusive for increasingly diverse populations of students. Policies, goals, and mission statements should reflect institutions' desire to accommodate students from different backgrounds. If students feel more comfortable in a space, they are more likely to do well academically (Torres, Howard-Hamilton, & Cooper, 2003). Diversity is an aspect of education that will never go away. In a rapidly changing environment, educators have to be culturally competent to speak to the experiences of students from a variety of different backgrounds. Students from different underrepresented backgrounds may have different perspectives that could impact how they perceive or understand information that is presented to them. In an environment where they are the minority, underrepresented students should feel included in their academic process, especially in the classroom.

How Diversity Benefits Students

According to Orfield (2009), most students live in racially homogeneous communities prior to their time in college, and they attend similarly homogeneous high schools. Because of this, college often plays the role of exposing students to new ideas and perspectives as a result of them interacting in a more racially-diverse student body (Gurin, Dey, Gurin, & Hurtado, 2004). According to Sorofman (1986), diversity is a difficult concept to define. Different people have different interpretations of what composes diversity. Definitions of diversity typically include

socioeconomic status, geographic origin, migratory status, race, language, religion, and political and social interests. Diversity within colleges and universities could possibly weaken racist perspectives that are prevalent in society; college may be a student's first time engaging individuals from different racial and ethnic backgrounds (Saenz, 2010). Universities have invested in resources that promote positive messages related to diversity (Engberg, 2004). The belief behind these initiatives is that bringing a diverse class to a university is not enough; universities should also promote engagement across racial and ethnic lines to provide students with the benefits that are related with diversity (Clayton-Pedersen & Allen, 1998; Hurtado, Milem, Clayton-Pedersen & Allen, 1998; Milem, Chang, & Antonio, 2005). These benefits include improvement in leadership skills, bias reduction, a higher potential for interracial friendship, and a higher commitment to civic engagement (Park, 2012; Bowman, 2011; Denson, 2009; Jayakumar, 2008). Based on the aforementioned literature, it would be in a university's best interest to recruit and retain students from a variety of different backgrounds.

Summary

There are gaps in the literature related to administrators' involvement in increasing diversity within colleges of agriculture. Leadership is a central part of this narrative that has not been explored in-depth. As individuals that play an important role in facilitating the educational experiences of students, it is important to obtain their understanding of the issues that plague underrepresented students. A wide range of obstacles, notably the achievement gap, socioeconomic status, and perceived barriers, have the potential to prevent underrepresented students from entering agricultural disciplines. If there is any hope to increase diversity within

the agricultural sciences, gaps in the literature must be addressed and meaningful plans of action

must be enacted on a variety of levels.

CHAPTER THREE

METHODOLOGY

The methodology chapter presents the strategies that the researcher utilized to address the problem statement of this study, which revolves around the lack of diversity within 1862 land grant institutions. The purpose of this study is to obtain a better understanding of the perceptions that administrators have regarding student diversity in 1862 land grant institutions, the barriers that significantly impede the recruitment and retention of students of color, and the strategies that are utilized to increase representation among these populations in the agricultural sciences.

Introduction

According to the reasoned action approach (Fishbein & Ajzen, 2010), the beliefs and perceptions that an individual has regarding a particular behavior will affect the likelihood of it actually being performed. This study sought to understand the perceptions that administrators have regarding their ability to act as it pertains to recruiting and retaining underrepresented students. By learning about these individuals' perceptions, the researcher sought to better understand their rationale behind their recruitment and retention efforts. The researcher also wished to assess administrators' perceptions of what methods have been the most and least effective across the population. The goal of this study was to add to the body of knowledge related to mitigating barriers for underrepresented populations and provide meaningful dialogue regarding steps that can be taken to assist in addressing this issue.

Data Collection

For the purpose of this study, the researcher utilized in-depth interviews. Interviewing is a tool that is commonly used within qualitative research. According to Charmaz (2014),

interviewing gives the researcher an opportunity to sit with a participant and ask them a variety of questions that are related to the phenomenon being investigated. In-depth interviews require researchers to prepare their questions in advance. Once the interview has been conducted, researchers analyze trends from interview transcripts and report the results. These interviews allowed the researcher the opportunity to generate insights and concepts without generalizing them. They also assisted in expanding understanding of the phenomenon being studied. Interviewing administrators within colleges of agriculture allowed the researcher to obtain information regarding the phenomenon being examined (Charmaz, 2014).

Research Approach

The researcher sought to understand the perceptions of leaders in colleges of agriculture regarding the barriers that underrepresented students face. This responsibility can potentially fall on a number of different individuals depending on the organizational make-up of each school. Some schools may have dedicated positions that are meant to achieve this purpose while others may not.

This study is phenomenological in nature, meaning that it describes the lived experiences of individuals about a concept (Creswell, 1998). Moustakas' (1994) phenomenological method was utilized to analyze the transcripts of the study participants. In this method, there are six steps that the researcher follows: (1) describe the personal experience with the phenomenon under study; (2) develop a list of significant statements; (3) take the statements and group into larger units of information called themes; (4) written description of what the participants experienced with the phenomenon; (5) written description of how the experience happened; and (6) written composite description of the phenomenon incorporating steps 4 and 5. The researcher

followed these steps as he was analyzing his data.

By understanding the perceptions of college administrators, the researcher was able to better ascertain the thoughts that formed the motivations of these individuals, which in turn could have an effect on the recruitment and retention strategies being utilized. Within this tradition, researchers search for the central underlying meaning of the experience being examined. Phenomenological data analysis focuses on analyzing specific statements and themes, focusing on all possible meanings. Figure 3-1, located at the end of the chapter, provides a holistic view of the research design.

Pilot Study

The researcher conducted a pilot study at a large university in the South. The pilot study consisted of qualitative interviews using questions. The initial participant pool consisted of four individuals that worked for a college of agriculture at a predominantly white institution. The researcher asked the participants about their perceptions regarding the barriers that underrepresented students face during the application process and after they become students at the school.

During analysis, the researcher used both axial and general coding (Table 3-1). The subthemes that emerged in this study were (1) importance of financial resources, (2) importance of financial resources, (3) students' perceptions of agriculture, (4) educational resources, (5) campus integration, and (6) educational literacy. The pilot study allowed the researcher to acclimate himself to qualitative methodology through the use of in-depth interviews.

The questions that the researcher utilized in this research study were based on those that were asked during the pilot study. After noticing that participants were not providing the type of

information he desired, the researcher made improvements to the interview questions by aligning them more closely to the research questions. Appropriate changes were made in terms of the clarity and amount of questions asked and their effectiveness in measuring the desired constructs of the study, such as perception and the strategies utilized to reach a desired outcome.

Table 3-1

Coding Scheme for Pilot Study

Themes (Axial Codes)	Associated Codes
Importance of financial resources	"no financial aid", "scholarships", "lack of funds for programming", "importance of finances", "money helped in changing program", "reallocation of funding"
Students' perceptions of agriculture	"negative perceptions of the field", "lack of agricultural literacy", "lack of desire to pursue agricultural majors", "perception affects participation"
Educational resources	"faculty assistance", "no summer programming for students of color, "program that assists SOC on-campus"
Campus integration	"issues adjusting", "sense of loneliness", "difficulty adjusting in uncomfortable settings", "changing culture of college"
Educational literacy	"lack of knowledge regarding application process", "understanding requirements for college entry"

Study Population

The population for this study was 18 individuals within 17 colleges of agriculture at 1862 land-grant universities. The rationale behind the selection of these schools goes back to the land-grant mission, which originally was to teach agriculture, military tactics, and the mechanic arts

as well as classical studies to the working class (Association of Public and Land-grant Universities, 2016). The schools contained in the population for this study were randomly selected from each Census-defined region of the United States: Northeast, Midwest, South, and West (United States Census, 2016). Each state has at least one land-grant university; some states in the South have multiple schools. This allowed the researcher to study the barriers and strategies of schools in various geographic locales and the similarities and differences contained within. The schools selected for this population had to have colleges of agriculture, as all land-grant institutions do not.

After the researcher identified the universities that met the criteria for inclusion in this study, he visited each institution's college of agriculture's website in search of potential participants to interview. The individuals that were targeted are those with the responsibility of maintaining diversity and recruiting and retaining undergraduate students within colleges of agriculture at 1862 land-grant institutions. This included, but was not limited to, programming assistants, administrators, department heads, and other leaders within these colleges of agriculture. The administrative structure at different institutions vary. As a result, the nature of the position of the individuals being interviewed differed between respondents. Despite this fact, out of 18 participants, only 12 of them had specific diversity-related responsibilities or initiatives within the scope of their position within their respective colleges of agriculture. Detailed information about the positions of the administrators at their respective universities and other demographic information can be found in Appendix I.

After these individuals were identified, the researcher contacted each college of agriculture (Appendix A) to ensure that the participant met the criteria for the study. He then

emailed each of the participants to solicit their participation (Appendix B). If they accepted, he then scheduled a time for a telephone interview and sent the participant consent forms and a brief synopsis of the study.

Interviews

After the participants were selected, consented to the interview, and were made aware of what the study would cover, the researcher interviewed each participant. These interviews took place over the phone and ranged anywhere from 15 minutes to an hour (indicated in Table 3-2). The researcher conducted semi-structured interviews in a conversational tone. Though there are questions and guidelines that were used for each of the interviews, the researcher allowed flexibility within the interviews so that the participants could talk about other aspects of the subject matter that may not have initially been considered. Utilizing this strategy of conducting interviews assisted in increasing the richness of the data (Corbin & Strauss, 2008) and allowed the researcher to ask participants more questions about their views regarding the recruitment and retention of underrepresented students. The researcher utilized an interview guide (Appendix G), an informed consent form (Appendix F), and interview questions (Appendix H).

Ensuring Trustworthiness

There are a variety of different strategies that can be utilized to ensure trustworthiness in qualitative research projects. To ensure that standards of rigor were utilized by the researcher while utilizing qualitative research methods, issues of trustworthiness were based on four criteria: credibility, transferability, dependability, and conformability (Guba & Lincoln, 1989). These standards of trustworthiness were used to ensure that the researcher's methodology was sound:

- Credibility of this research was addressed by the use of investigator triangulation. The researcher's academic advisors as well as a member of the researcher's committee took part in the interpretation of the data; they were included on the IRB application and process. These multiple viewpoints within the scope of this study allowed for greater accuracy. Theoretical triangulation was also used by way of path-goal theory of leadership (House, 1996) and reasoned action theory (Fishbein & Ajzen, 2010).
- Even though the researcher utilized only a portion of all 1862 land grant institutions for this study, transferability was addressed by including a high depth of detail with regard to the participants and the interviews themselves. Doing this provides context for the reader, which will allow them to consider the merits of this study being extrapolated to other institutions.
- The researcher ensured dependability of the study by creating an audit trail related to this study. This was accomplished through the use of memos and any reports generated for the study. This allowed the opportunity to ensure that credibility and transferability standards were followed.
- Lastly, the researcher employed reflexivity related to the personal opinions and perceptions pertaining to the barriers that students of color face when entering and matriculating through colleges of agriculture at 1862 land grant institutions. Later in this chapter, researcher bias and the importance of maintaining conformability is discussed.

Reflexivity and Research Considerations

The researcher's personal experiences and education background largely influenced the study. The researcher is a member of an underrepresented population that is represented in this

study; this could have potentially had an effect on the perspective that he provides in his analysis of the qualitative data. As an African-American male that has been involved in agriculture in both his academic endeavors and professional career for more than 10 years, the researcher acknowledges his own biases as a minority in higher education. In an attempt to reduce bias, the researcher constructed reflexive memos upon the completion of each the interviews and throughout the research process. Bracketing was also utilized throughout the research study, which is a method that is designed to reduce any potential bias. The researcher did his best to remain neutral during the data collection and analysis process to preserve the integrity of the study. The researcher also acknowledges that he is not aware of all aspects of the phenomenon that he is studying. There is also a possibility that the participants of this study answered questions in an attempt to appease the researcher. The researcher stressed the importance of the participant providing honest answers in an event to minimize this threat. The researcher conducted phone interviews instead of face-to-face interviews in an attempt to minimize this threat.

Process of Analysis

The researcher began by conducting and recording the interviews. The interviews were then transcribed after all of the participants were interviewed. The researcher then conducted initial coding, which is utilizing words or short phrases to characterize qualitative data. The researcher then conducted focused coding, which further arranges initial codes into fewer, more overarching concepts that are related to the phenomenon that was examined. The focused codes are known as "subthemes" for the purpose of this study. These subthemes were then examined for trends that were prevalent in research literature. Memos that were taken throughout the

interview process were utilized during the analysis to fill in gaps regarding occurrences in the interviews that might not be apparent from the transcripts alone. The researcher used these various forms of analysis to construct a holistic explanation of the findings regarding the phenomena; this analysis formed the themes.

Path-goal theory of leadership (House, 1971) was utilized to examine which barriers most significantly impede students and how administrators assist students in following the path to success, which leads to successful recruitment and retention. Within the context of path-goal theory, leaders (administrators) are tasked with being aware of characteristics of their followers (students), such as their experience and their abilities. On the "path" to accomplishing their goals, leaders are tasked with defining the goals for their followers, clarifying the path to successfully accomplishing these goals, removing obstacles that could be detrimental, and providing support. The researcher utilized path-goal theory, particularly the role of the leader in assisting their followers on their path to success, to examine if administrators are successfully assisting students of color in reaching their goals.

Reasoned action theory (Fishbein & Azjen, 2010) was utilized to show how administrators' motivation and perceptions affect how they address the issue of diversity in agriculture. Within reasoned action theory, three types of beliefs are usually formed regarding a behavior, in this case, the behaviors that the participants display when attempting to assist students of color:

1. People hold positive or negative expectations regarding the consequences they might have to face if the action is performed.

2. People form beliefs that important people in their lives would approve or disapprove of the behavior being performed.

3. People form beliefs about personal and environmental factors that could help or impede the likelihood of the behavior occurring.

The researcher utilized data obtained from participants within the context of the aforementioned aspects of reasoned action theory to better understand the role that perception plays in shaping their actions.

Anticipated Findings

The researcher expected that administrators would discuss many of the prevalent barriers that have been listed in the literature related to diversity in colleges of agriculture during the interviews. The researcher also expected there would be additional barriers that he had not considered prior to interviewing the participants. By utilizing reasoned action theory as his theoretical framework, the researcher was able to better understand the role that perception plays in the strategies being utilized by administrators in colleges of agriculture. The use of path-goal theory assisted the researcher in conceptualizing how administrators "clear the path" to the goal of successful recruitment and retention of underrepresented students. The findings from this study will ultimately benefit 1862 land grant institutions in their diversity recruitment efforts.

Summary

This chapter discussed the rationale behind the use of qualitative methodology and how it assisted the researcher in better understanding the perceptions and perspectives of leaders and administrators within colleges of agriculture regarding the barriers that underrepresented students face. The data collection methods that were utilized include recorded interviews, transcription,

55

and qualitative analysis with the use of initial and focused coding. The following research design

figure provides a holistic look at the various components of the study's methodology.

Goals

- To obtain a better understanding of participants' perspective of the issue
- To utilize the research questions to guide data collection methods

Theoretical Framework

- Path-goal theory of leadership
- Reasoned action approach
- Research questions will utilize these theories as its foundation

Research Questions

- How do administrators perceive their role within the scope of recruiting and retaining underrepresented students?
- What barriers most significantly impede the success of administrators as it pertains to ensuring that students of color can successfully enter and matriculate through a college of agriculture at an 1862 land grant institution?
- What strategies do administrators in colleges of agriculture at 1862 land grant institutions use to recruit and retain students? Which methods have proven to be the most effective?

Methods

- In-depth interviews
- Interview transcripts
- Initial coding
- Focused coding
- Analytic memoing

Trustworthiness

Threats:

- Researcher bias
- Reactivity
- Researcher is unaware of all aspects of phenomenon

Results

CHAPTER FOUR

FINDINGS

The purpose of this study was to obtain a better understanding of the perceptions of administrators regarding diversity in agriculture and the strategies they use to successfully recruit and retain underrepresented undergraduate students within post-secondary institutions. This will assist in improving the amount of underrepresented students involved in the field. This study sought to address gaps in the literature by answering the following research questions related to perceptions of success for underrepresented students in colleges of agriculture at 1862 land-grant institutions:

1.) How do administrators perceive their role within the scope of recruiting and retaining students?

2.) What barriers most significantly impede the success of students entering and matriculating through college?

3.) What strategies do administrators use to recruit and retain students? Which methods have proven to be most effective?

Themes

The following themes in Table 4-1 emerged from the data during the process of analysis. These are reflective of trends in the data:

Table 4-1

Themes and related subthemes that emerged from analysis.

1.) Diversity is a multifaceted and evolving concept.	1a. Diversity is a combination of differences 1b. A diverse agricultural workforce is important 1c. Personal experiences shape perceptions of diversity
2.) Students of color face barriers to access.	2a. Negative perceptions of agriculture remain 2b. Financial barriers are prevalent
3.) Success strategies for students of color require investments from administrators.	3a. Comfortable and inclusive environments are essential. 3b. Appropriate academic and support resources are key 3c. Provide financial resources 3d. Networking, collaborating, and disseminating knowledge is important 3e. Build and maintain relationships with students and families is essential 3f. Leadership must support diversity efforts.
4.) Data validates success.	1a. Use demographics to measure success

The remainder of this chapter is organized by themes that emerged during the coding of

the transcripts. The following themes will be presented and discussed in-depth: 1.) Diversity is a

multifaceted and evolving concept. 2.) Students of color face barriers to access. 3.) Success

strategies for students of color require investments from administrators. 4.) Data validates

success. The subthemes on the chart were derived based on trends that the researcher recognized

as he was analyzing the data.

Theme 1: Diversity is a multifaceted and evolving concept

Diversity, which is commonly viewed as differences in the characteristics that contribute to the make-up of an individual, is perceived as an important construct within the field of agriculture. Perceptions of diversity were largely constructed from the previous personal experiences of participants.

Subtheme 1a: Diversity is a combination of differences. A majority of the participants perceived diversity as a combination of differences in people or different components that contribute to a person. Many of the participants included gender, race/ethnicity, culture, sexual orientation, and socioeconomic status in their definitions. There were two participants that did not mention race when defining "diversity."

Participant A defined diversity as "differences according to different characteristics." He included race, ethnicity, sexual orientation, geographic location, and religion in his definition (A-7). Participant E defined diversity as "values or view points coming from a side variety of different lifetime experiences whether that is racial, environmental, cultural, or regional" (E-7). Participant C viewed diversity similarly, defining it as "the recognition that having representatives of different, cultures, genders, viewpoints, sexual orientations is one that results in a greater good." He went on to say that he also viewed diversity as "sort of a synergistic outcome for what the best of a community can be compared to the sum of its individual parts" (C-6).

Participant H noted that her institution utilizes a variety of measures to define diversity while making sure to differentiate it from inclusion:

So I can tell you how [my institution] defines diversity. We have 17 markers, everything

from race, ethnicity, sexual orientation, disability status to geographical location, all

kinds of things, 17 markers, with a particular emphasis on groups that have been

historically marginalized. Specifically socioeconomic status, race, ethnicity and gender

are the big ones that are federally protected. So that's in general how I think of diversity.

When I facilitate trainings, I say that diversity is usually number focused. How many

students of color do we have, how many women do we have, that sort of thing. I'm also

linking it to a dance, so diversity is being invited to the dance; inclusion is being invited

to dance once I get there. (H-5)

When providing her definition of diversity, Participant L told the researcher that she

doesn't care for the term and views it as divisive:

I will define what I feel diversity is then I will tell you why I do not like the word. I think

the common definition of the word diversity is to somewhat ensure that underrepresented

populations are included in the day-to-day operations of organizations. Those

underrepresented populations can be gender diversity, racial diversity, sexual orientation

diversity, all manner of diversity between groups. (L-6)

When asked to clarify why she doesn't like the term, she stated the following:

I do not like the term because I pay particular attention to linguistics and diversity starts

with the same root as divisions and all of these words with negative connotations that I

feel lends themselves to further grouping individuals instead of including them. (L-15)

Participant M noted that his institution was having similar conversations related to the

term "diversity"; his institution is considering using "inclusive excellence." He went on to say

that within the context of diversity, it's important for people of different backgrounds and experiences to respect one another: "That's the kind of society we live in, so how we make that work is important especially in an educational setting. I think that a truly diverse population is one that's represented; I guess that's the simplest way that I think about it," he said (M-21).

Participant B took a more holistic view of diversity:

Well diversity can be interpreted in many different ways. Well to me it's not just—I guess traditionally what we think of when we hear diversity is what we see in terms of students' ethnicities and their background but there's so much more behind the term "diversity." To me it's diversity of thought, learning styles, how students approach work in the classroom. I think all of that is diversity, as well as socioeconomic background, diversity of majors, diversity of career choices down the road. I guess anything that separates a student and makes them unique and that helps them go down the path on an academic and career-based level. (B-6)

A diverse agricultural workforce is important. The majority of the participants acknowledged how important a diverse workforce is within the field of agriculture. The participants pointed to changing demographics and acknowledging the resulting need for a variety of different perspectives.

Participant A discussed the importance of diversity in agriculture within the context of the changing demographics of the United States. "You know, I think it kind of goes with the marketplace and the workplace. You look a lot at how demographics are changing, how your teams are changing, and also the policies and procedures to make sure that you're welcoming

and inclusive," he said. He went on to note that the majority was becoming the minority in schools and workplaces throughout the country.

Participant C discussed the importance of being able to reach a diverse audience. "I would say I think ensuring that you have a diverse--that you attempt to reach a diverse audience and that you do the best you can to recruit a diverse student body and a diverse workforce is to your advantage in any field," he said (C-111). Participant D shared this sentiment regarding the importance of diversity and its role within the field of agriculture:

If we believe that we are a global society, more and more the business we do is going to depend on working with people who we traditionally have not been working with and doing business with, then it would be pretty critical that we create a more diverse workforce and training of people at this level to address those kinds of issues. (D-64)

Participant C discussed the importance of improving diversity in agriculture:

I think "urgent"... I would say it's urgent. And I would say that the world, the United States, is becoming a more diverse place and you have to always be thinking about ensuring that the future of the disciplines that you're involved with, in this case agriculture and producing food, needs to have good people. Good people who have not only the science-based skillsets, in this case to deliver food and ensure a safe food supply, but that also has an appreciation for cultural differences that maybe exist for...let's say food preferences and things like that so that you don't produce a food--let's say that you produce the golden food product that would solve all the nation's woes, but you ignore the fact that a segment of the population wouldn't consume that food because of something that's forbidden in their culture or forbidden by religion or whatever, you

haven't accomplished much. So that's why I think this is one of the main reasons; to be successful at developing solutions to problems, most successful, when living in a diverse world that you have a diverse group of folks working to solve those problems. (C-122)

From Participant P's perspective, diversity is important for both students of color and students that come from majority backgrounds:

It's important to get critical amounts of students so that they don't feel isolated if they come into an institution that's not diverse. They may be very different so how do we create a critical mass and how do we support an inclusion of students in that environment. So that's important but I also think, how do I help the students who are here who are not diverse expand their world and develop connections, friendships, relationships, personal respect and affection for other students who are from all backgrounds different from theirs. (P-82)

Participant C discussed the importance of students understanding different cultural identities and backgrounds:

Our students are going to go out into the industries and they are going to work with immigrant laborers, etc. and they need to have an appreciation of the context from which these folks come so that they can better understand that these aren't some wanderers. These are people they have certain identities, certain traditions and to the extent that you can be aware of those and respect them. (C-588)

Subtheme 1c: Personal experiences shape perceptions of diversity. The majority of participants attributed their perceptions to diversity to previous personal experiences they had. These included experiences from growing up as a member of a minority group, educational

experiences, interactions with students, locations the participants previously resided in, and influences with family members. The personal experiences of the participants assisted in shaping their perceptions of diversity.

Participant O attributed her perception of diversity to her parents:

First and foremost what shaped it more than anything were my parents. I feel like I grew up in a family where it was important to recognize, acknowledge and be supportive of all people regardless of who they were, their ethnicity or religion, their sexuality and the disciplines they pursued. It was 100 percent of the influence of my mother and father. (O-140)

Participant E noted that his time working within his college contributed to his perception of diversity. He said that upon accepting his position at his institution, he took diversity training as a way to "encourage us to think more broadly about how we look at, value and work with diversity populations" (E-14). Participant B also learned more working in her college of agriculture, where she is "around a lot of different types of students with different skillsets and backgrounds." She went on to say that it taught her to appreciate what makes a student unique individually because a part of her job is to assist in ensuring the success and happiness of students as it pertains to their futures (B-16). Participant C said that his perceptions of diversity were rooted in his "observation, experience, education, reading, learning from colleagues" over the last 20 years (C-13). Participant K attributed several factors to her current percetpion of diversity, including her parents, childhood, and young adulthood in a variety of different places. (K-9)

Participant M told the researcher about how he grew up in an incredibly segregated city and how that affected his perception of diversity. His experiences growing up and working at the institution he attended as a student assists him with working with students of color:

I was in their shoes. I did my undergraduate and graduate work here at ---- [name of school] and I feel like I can relate to their experiences and know that they need people. It's sad because I don't do anything special, other than caring for the students-they need people like me here.

Participant A's perception of diversity was shaped by his experience as a student of color at his undergraduate institution. While he didn't purposely think about what diversity meant to him during that time, he did remember not seeing many people that looked like him in his classes. "Well I didn't think about diversity, I just thought about the lack of people that looked like me as an African-American in my classes. That's where it related to me," he said. "Not really belonging, you know? Being the only one in a lot of these classes, student organizations, dorm rooms, campus events" (A-37).

Participant D had a similar experience during his time as a teacher in a place that was drastically different from what he was accustomed. "There are a lot of things that have shaped my thinking and that started back from when I was a high school teacher and the fact that I taught high school at a Mormon school in [name of state]," he said. "You start developing different sensitivity from an experience like that. I was a recently-graduated Black teacher surrounded by a lot of people who had different religious upbringings." Despite the fact that it was different for him, he said that he had to embrace it. "Out of school that was my first

experience to realize that things are really different around me and I cannot be naïve about that, I have to be a part of that" (D-12).

Participant F discussed her experience as a first-generation college student and how that perspective helps her relate to students: "We are coming, figuring things out, just realizing when you do not have all the connections and different resources, it limits you sometimes, and you have to work a little harder," she said. "A lot of times when we are doing programming and things like that, it gets me a better perspective about how to reach out to different students, how to accommodate different students and provide support where needed" (F-15).

Participant J's experiences in graduate school and at her job helped to form her perception of diversity. "I think that the beginnings of my definition probably started when I was in grad school and because I don't think I necessarily had a concept of that word before then, until I got into a PhD program with international students and started having discussions with them," she said (J-10).

Participant R said that being in the educational system and her desire to learn from people different than her had an effect on her perception of diversity. "So I learned that at a young age, but then when I went on off to college, when I started my job after college and continued my education, I've always been around people, I've always been attracted to people that looked different than me and I'd always want to learn from other people," she said (R-27).

Theme 2: Students of color face barriers to access

Negative perceptions of agriculture, which includes the perception of agriculture as "just farming," negative historical contexts for people of color, and a lack of diversity within the field,

and financial barriers are two significant barriers that impact the likelihood of students of color attending colleges of agriculture.

Subtheme 2a: Negative perceptions of agriculture remain. The participants reported that students of color having negative perceptions of agriculture significantly impacted their likelihood of recruiting students to agricultural programs. Participants discussed the difficulties that they had in terms of trying to make agriculture appealing to students of color, especially because of the negative historical connotations associated with the field, namely slavery for African-Americans, and the perception that agriculture is not a diverse field.

Participant M discussed the difficulty he experienced trying to recruit students due to the common perception of the field. He said that he was not certain how effective going to a college recruitment fair was because students typically avoid his table (M-345). Participant N said that students of color also routinely avoid his table. "If you say something at the college fair, all they are going to think of every day when they see ag they think about 'what my grandpa said' and that was slavery," he said (N-210).

This sentiment relates to Participant J's opinion of why students of color do not more readily gravitate to pursuing agricultural disciplines in college. "I also think that there is a perception that we also have to work on and that is from populations that have not been traditionally included in the higher education part and the science part of agricultural science, that coming to a college that's labeled agriculture science is not for them, it's not something that culturally they are promoted to pursue," she said (J-91).

Participant N shared a similar sentiment when discussing all of the things that people do not associate with agriculture. "Once again whenever you hear the word agriculture you do not

think of everything from working with animals, food science and development; there are a lot of things. But whenever you hear the word "agriculture" the first thing you think of is slavery, look at this, do this, do that. That is the one thing they know," he said (N-176).

When asked if she feels that diversity is an integral part of agriculture, Participant F stated that while she felt that it was important, her college struggles with cultivating it. "I feel that we struggle and are still struggling. I look at agriculture overall and we are struggling in terms of students and so people have a stereotype against agriculture and we are still fighting in terms of enrollment," she said (F-47). She went on to note that her college struggles to get students of color interested in agriculture.

Participant H discussed her own experience as a student of color and how that impacted her perception of agriculture. "I think part of it is the reason I didn't study agriculture, the stereotype about what it means to be an agriculturalist in 2016," she said (H-202). "My family worked hard so I did not have to work that way. So why would they study agriculture? There's a stereotype and I think that's a part of recruitment." She then noted that administrators are just recently paying attention to the educational aspect of recruiting students of color to agricultural fields.

Participant K discussed the perceptions that students of color have regarding agriculture within the context of the state his institution resides in:

Where I've been working for the last ten 10 years, diversity is challenging to approach in agriculture. In the state of [name of state] the southern areas were traditionally areas with sharecropping so a lot of the students don't want to stay in agriculture because of the negative association. Where the university is at in northwestern [name of state], we

have…so there is negative association for the Latino students because a lot of the underpaid or ill-treated workers are Latino and immigrants, so that's often their association with agriculture. So, I don't know if that answers the question or not. It's got a lot of opportunities in business and in agriculture but people don't really see those things, they just see the poultry or the history of sharecropping. (K-74)

Participant M shared similar sentiments about his state and institution. "With the perception of agriculture, they think that, particularly in [name of city] and even here in [name of city], coming from the point of view from underrepresented communities, they think that it's farming. We don't relate to farming, and so we don't have anything to do with it," he said. "Not understanding the whole network of what agriculture is, so I mean, they are definitely consumers but they're not that heavily involved in production, I would say" (M-158).

Participant C discussed how he has to explain to students and parents that agriculture is not just farming:

There's nothing wrong with agriculture being all farming, but sense you know, nationally 2 percent of our population comes from production agriculture place. I can assure you that the percentage is much much lower here (laughs). You know, we have to convince students that you don't have to be a farmer to become involved in agriculture, which is a very big broad field. We have to, in the case of some students, it seems that we have to be as successful at convincing their parents of this as we are at convincing them of it. (C-156)

Participant E shared similar sentiments, stating that students and parents alike are concerned about the return on their investment after entering and agricultural field:

70

A lot of students tend to think that, like I said earlier, if they graduate from our college,

they are going to have to go work on a farm. There are some students who do not. I hear

it more from parents of students not so much the students themselves, but parents who

really do play a critical role in getting our students to come here are concerned about

whether or not their student is going to get a career that is ultimately going to allow them

to pay back the cost of attending the university. (E-132)

Along with stereotypes present within the field, Participant Q believes that the way

agriculture is depicted in textbooks plays a role:

The greatest factors and challenges, they are probably others, but number one is

awareness. Part of awareness comes with stigma of what agriculture was in the past and

realizing how high-tech the production of our food and fiber goes with it in today's

society. High school age students don't realize that. In high school even the textbooks

don't portray agriculture unless it's about farming. Textbooks in public schools don't

portray agriculture as a modern technology. That impacts the awareness of students and

the stigmatism of, "Oh I don't want to go into something like that" (Q-155).

Participant D talked about how agricultural companies lend to the perception of

agriculture from the perspective of solely farming. He told the researcher that while he was doing

some research regarding the perceptions of agriculture, we recognized that agricultural

companies typically represent the field from the perspective of production agriculture rather than

discussing scientific innovations in the field. "Whereas when you see medical commercials on

TV that talk about technology, all kinds of scientific innovations, our commercials do not do

71

that, those commercials that relate to the food and natural sciences do not do that, they are stereotypical tradition," he told the researcher (D-152).

Participant F spoke to the experience of students of color in colleges of agriculture, saying that when they look at the demographics of students within their college, it can be difficult to find a sense of comfort and that it can be difficult for students to make connections. She goes on to say that she thinks students "want to see other people that look like them and have the same dreams" (F-149).

Participant E talked about the fears that students of color may have within colleges of agriculture. He started off by saying that his college of agriculture has always consisted of a mostly white population. "I think a lot of students are concerned they will not meet people who come from a similar ethnic or cultural background as them so they tend to have some apprehensiveness about whether or not the people would be instructing them are going to truly understand them," he said. Participant I shared a similar sentiment about her institution, stating, "There are certainly some areas that are not very diverse in the student body so they are alone in terms of not having many people that look like them in their major" (E-121).

A lack of diversity within the field of agriculture is commonly cited as a barrier to the recruitment and retention of students of color. Participant D discussed how a student of color perceives a lack of diversity at a university:

> You come to the campus with almost 3,000 undergraduate students, they look around and they see that of the 3,000 undergraduate students, within the Black and Hispanic community in college there are three hundred of them. That means when you go to different academic departments, there are going to be very few of them that exist in those

departments. Dealing with helping them with their own self-identity types of things and

dealing with persistent self-motivation, those kinds of things are important. They are

coming from very heavy minority communities into a totally different community and

now trying to find who they are and how they exist in this kind of community. (D-217)

Subtheme 2b: Financial barriers are prevalent. Financial barriers were cited as a very

prevalent barrier for students of color, citing the difficulty of families to pay for the rising cost of

a college education. This both hinders students from attending school and potentially prevents

them from finishing. Financial barriers for students of color significantly impact their likelihood

of being recruited and retained within colleges of agriculture.

When asked about barriers that inhibit students from entering colleges of agriculture,

Participant C pointed to finances and how that impacts a student's likelihood of going to college.

This has an effect on his institution's ability to recruit students of color:

I think I can say that one of the things I've observed, at least in school urban recruiting

efforts in general is students in urban environments who are often from underrepresented

population, though not always, certainly is the cost to attend ---- [name of school] is one

of the things that works against our success. (C-410)

Participant I has similar experiences with students at her institution, pointing to cost as a

barrier:

One issue is the cost of the education. There are students who say "I would love to come

to ---- [name of school], this is my very first choice, but so-and-so is offering me a full

ride over here and so I have to take that because I don't have the funding to come to

[name of school] ----". We have one of the highest costs for in-state students. I think our

cost is an issue. (I-120)

Participant B told the researcher that even though the tuition is relatively low at her

institution, it is still difficult for some families to afford to send their students to school. "For our

demographic of ---- [state], even with the tuition as low as it is, for some families, it's very

difficult to go to school. And we're very fortunate to have that lottery scholarship to try to

eliminate some of that border on the family" (B-270). Participant E told the researcher that a

major concern for some parents is the likelihood of their children being able to attain a career

that will allow them to pay back the cost of attending the university.

Participant Q talked about how it is getting more expensive for students to attend college:

There is no secret that going to college is a very expensive proposition and based on

economics and socio-economic it's challenging for some individuals to be able to afford

to go to college. Unfortunately with state appropriations and privatization of our

education, it's getting worse. (Q-146)

Participant F discussed how the rising cost of tuition at her university makes it difficult

for students to afford to attend. "I think so. It is expensive to go to ---- [name of school]. In

terms of a scholarship, for the university level, we have not seen the increase that we needed to

give them a tuition break, so it is an uphill battle with that," she said (F-366).

Participant J discussed her hardships with supporting students after they are accepted into

the university. "No-one's going to say there's not a financial burden so we try to see what we can

do for continuing students, because we sometimes get them in with recruiting scholarships that

don't necessarily continue, so how do we keep that going so that they don't face a financial

hardship halfway through?" she said (J-199).

Theme 3: Success strategies for students of color require investments from administrators

A variety of strategies have been found to be effective for the recruitment and retention

of students of color. Each of these strategies requires some type of investment from

administrators within colleges of agriculture. It might be an investment of funding to support

diversity efforts or an investment of time, effort, and attention to promote diversity initiatives

within the college. The nature of the investment differs depending on what the success strategy

is. Strategies that have shown to be successful include creating comfortable environments for

students, providing academic resources and support, providing financial resources,

administrators networking and collaborating with colleagues, and building relationships with

students and families.

Subtheme 3a: Comfortable and inclusive environments are essential. Numerous

participants mentioned providing comfortable and inclusive environments as an effective

recruitment and retention strategy for students of color. This assisted in making students feel like

they were a part of the community and was accomplished by supportive faculty members

interacting with students of color, encouraging an environment that is respectful of all diversity,

and ensuring that students feel comfortable.

When asked what factors were necessary to successfully recruit and retain students,

Participant A said, "I also think creating an environment where people are going to be

successful. Infusing inclusive practices into your teaching, and also into your curriculum" (A-

105). Participant H explained to the researcher how she assists in cultivating comfortable

environments for students. "I think constant and consistent messaging. Its evaluating ' How are we doing things?', 'What do our websites look like?', 'What do our marketing strategies look like?', 'Who is doing the recruiting?' 'What does that person look like?'" she said. She went on to say that even though she was in an environment that mostly consisted of white men, they were "truly and authentically supportive" of her during her time in school (H-228).

Many of the participants told the researcher that they tried to make their colleges of agriculture as comfortable and inclusive for students as possible. Inclusivity is very important to Participant H. "I think it is unethical to recruit students until you have a culture and climate to support students," she said (H-46). Participant R said that she tries to treat them just as she treats all other students. "We just show them that this is a place where they can excel, where they can succeed, and that there are resources here to help them and it is a great place to be and it's a time in their life when they can learn a lot and grow, but it's also a time for them to have fun too and get involved in other classroom activities," she said (R-120).

Participant O talked about how important it is for students to feel welcome within colleges of agriculture. "One of the things I think is important is all students, no matter what their background or ethnicity is, want to feel like they are welcome, a part of a community and have belonging in that space. I think that's a really important place in particular for our college to continue to work," she said (O-194).

Participant C discussed the importance of comfortable environments as it relates recruitment. He said that his institution has to show them "that there's a life at the university for them." He went on to say:

And, to the extent that that involves both regular student activities like they did in their

high school, atheteltics, as well as other support structures, whether that's cultural centers,

or items related like that, um, living communities that could be sensitive to cultural

identitiy that they might, or might not, choose to be involved in because that happens too.

The more you can show them that you have a complete community that will support them

in their non-academic as well as their academic life at a university, I think you're more

successful. (C-164)

Later in the interview, Participant C said that people identify with a field or career by

seeing people in their disciplines that are like them. "So I think some of that can be realized by

being involved in the broader university than the college and so I just think feeling that they have

a place that folks do care about them as individuals" (C-312).

Subtheme 3b: Appropriate academic and support resources are key. Participants

noted academic and support resources specifically dedicated to students of color as an effective

recruitment and retention strategy. These resources come in various forms, including diversity

committees and offices housed within colleges of agriculture, academic assistance, and student

organizations and programs specifically dedicated to assisting and ensuring the success of

students of color.

Participant F discussed the role of faculty mentoring and providing support systems for

students:

Other things that we do are push involvement within clubs and organizations. That is

something I think we do a really good job at. We have over twenty different clubs and

organizations just within the college of agriculture and so we try to get the students to

plug in early on. The other side of that is just making sure those students have a faculty

mentor as they go through the program and I think that is important in our faculty. When

they have time, they do a very good job of connecting with those students, making sure

they feel welcomed and included, and that have a support network while they are

here. (F-153)

Participant N has various means that he employs to ensure the success of

underrepresented students in his college:

Another piece of my position focuses on diversity so whatever comes to diversity is my

role and initially my role with diversity was retention and student success, making sure

that our minority students who enroll in our college transition well, experience academic

and career development, creating particular programs that ensured they did well and

make sure they graduate. (N-58)

Participant R talked about an extensive program that assists students within her college of

agriculture in various ways:

Yeah, so that program I mentioned, it's called [name of program] and it's actually funded

through the university. It's a grant-funded program that we—I guess it's been around for

nearly five years now, and we originally tailored it for underrepresented student groups,

but what we found is that there was a lot of students that weren't from underrepresented

student groups that were interested in the same program, so it's open to anyone. Now the

majority of the students are from underrepresented groups, but to me, it's so neat to see

the students learn from one another by being involved in the program but the program

itself is really tailored support for academic professional success, and it includes things

like peer mentoring and faculty networking and free tutoring, math and chemistry

tutoring, on our part of the campus, which sometimes like to hang out in our common

area. It's their home away from home, and instead of making them go to tutoring at the

university's ---- [name of resource], we have tutoring right where our students hang out.

(R-160)

Participant D has experienced success from his implementation of meaningful

experiences for students. "Then it is creating the pre-college experiences for students to come

and experience that and do some academic preparation," he said. Once students arrive, he uses

peer and professional mentors to assist students in persisting and staying connected to their area

of interest. (D-117) "They come in and we graduate 96 percent of students who come into our

college," he said. "That whole layering of support, finding students' internship, shadowing,

helping them get their first job, helping them towards graduate school, all of those kinds of

things are part of what has helped us persist in terms of graduating our students" (D-126).

Several participants discussed the importance of creating support networks for students.

This can be done by talking to students and staying abreast of what is occurring in their lives and

letting students know that they are important and invested in. Participant F told the researcher

that there are support networks present for students and their families to ensure that they will be

taken care of while at the institution. She talked about how the size of her college allows her to

do that:

The plus of being in a smaller college is you have that family atmosphere that helps us

support our students too so we have an open door policy. A faculty is involved in the

advising process and so you just feel like you are invested in. So when you talk

79

to professors at our program, that is one thing that always stands out. So they feel like they are treated like a person and not just a number. (F-217)

Participant N discussed the ways in which his college tries to support students of color:

Once again, there is the academic piece, how we help you do well in terms of your academics, but we also help you transition, get plugged into stuff like MANRRS and your ag student organizations. We are going to help you accomplish your research, all those things are covered. Your personal life, how are you, are you transitioning, have you gotten plugged in? I think the way you look at it especially for retention both of those things the academic and career placement number one but also that personal aspect, their personal life, are they transitioning well, how are they mentally and socially, stuff like that. When you can map both of those together that is how you create in my opinion a retention plan that is successful. (N-255)

Various participants listed Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS), a student organization the provides career, educational, and networking opportunities and skills for students of color in agricultural fields, as a student organization that assists in the retention of students of color within colleges of agriculture.

Participant O said that MANRRS has "been very significant in terms of creating another place for students to feel as though they have a sense of community, home and belonging." She went on to say that faculty, staff, and students all participate in her MANRRS chapter and that her school's chapter has been "something that has had significant influence." She also says that it is something that students within her college of agriculture connect with.

Participant D described MANRRS as a leadership club on his campus that fits into the diversity initiatives his university promotes. "MANRRS for example, does not operate as inclusiveness in itself. MANRRS is a student leadership club on this campus that fits into a model that we have in terms of this whole diversity inclusion model that we have on this campus," he said. (D-388)

MANRRS is a mechanism that Participant A's institution uses in a variety of ways. "I think in terms of recruitment, it's using what we have our MANRRS students. Minorities in Ag, using that group. In terms of recruitment events and looking for organizations for student ambassadors to be a part of. We infuse MANRRS into our alumni organization, we have them speak at events, having alumni scholarship. Using MANRRS org all throughout the school. We also use MANRRS for our graduate students," he said (A-202). Participant J's institution recently chartered a chapter of MANRRS and acknowledged the importance of faculty being involved. "About two years ago we chartered a chapter of MANRRS and that was important. We've had involvement in there but I think it also that having a faculty and students who help support all of that," she said (J-305).

Subtheme 3c: Providing financial resources. When asked for and recruitment strategies, participants noted the importance of providing financial resources and scholarships for students of color. This was accomplished in various ways, including scholarships, financial aid, and stipends. Within the scope of path-goal theory of leadership (House, 1996), administrators identified the barrier facing students of color and provided resources in an attempt to assist in circumventing them.

When asked if his university could do anything to assist with diversity recruitment and

retention efforts, Participant C immediately pointed to more funding for students of color:

Well I'd love to see us be able to target more scholarships to assist students of first

generations from underrepresented populations and students of limited needs. I see that

increasingly as the real challenge for all those groups, to the extent that we can fund raise

with those targets in mind. (C-432)

Participant D discussed his dedication to assisting incoming students with their financial

aid:

We have done a fairly good job of what I mentioned at the beginning, financial aid. We

have tried to increase the amount of scholarship money that has been going to our

students and that was not the idea before I arrived because we sometimes get caught up in

that. Helping families to see that investment and helping them to see beyond this

investment that we need to make in terms of our students coming into this college, that

there is a serious profit to be made by the student once they exit this institution. That is a

small investment coming in but it is going to pay a lot of dividends once they leave. We

continue and have continued to try to increase the scholarship support of students. (D-

253)

Participant N discussed the role of financial assistance in the retention of students:

One thing that we do at our institution is that we are able to give our students academic

stipends as long as they do well in their classes and come to monthly workshops and

events and also our again students can get stipends each semester and they can range

from sometimes $800, $900 depending on how they do in terms of their classes, if they

are getting involved with these workshops, stuff like that. That has been the good thing

to kind of help students. You come, get involved and get a chance to earn additional

money, get a stipend. That has been a very helpful offering to students who do not get a

lot from the school initially who say I really want to come to ---- and I really want to do

well. It is very instrumental for those students in terms of additional financial aid. I guess

it does not fix the actual problem but it does it kind of helps us in the mean time as we are

trying to find more ways to do stuff like that. (N-338)

When asked if her university provided any assistance to her college of agriculture,

Participant Q immediately pointed to the financial assistance that is provided for students of

color:

Yes! The university has a whole team that also helps focus on diversity recruitment and

then we also have an enormous amount of scholarships that the university provides for

diversity scholarship. For example, a student can qualify for a diversity scholarship, some

of them are over $10,000 annually are given to these students. The university provides

scholarships, recruitment efforts to do that. (Q-374)

Subtheme 3d: Networking, collaboration, and the dissemination of knowledge is

important. Networking and collaborating with other people in the field has shown to be

beneficial to administrators, thereby improving their diversity recruitment and retention efforts.

Sharing and spreading knowledge related to diversity has assisted institutions with better

understanding some of the issues students of color face and coming up with strategies to combat

those issues.

Networking and collaborating with colleagues has allowed participants to experience a greater degree of success than they would is they were working alone. Participant N told the researcher that whenever he needs assistance with programs, events, initiatives, and other things, he can reach out to his colleagues across campus for assistance. He said that he had campus partners within his university's diversity office that have been very helpful. Later in the interview, he said that he would be open to collaborating with people at other universities to recruit students to agricultural programs. "Some people have different responses but I am always open to institutional collaborations, I am just a big advocate. If we can work together and save money doing it while still hitting the purpose, I am all for it. Someone might say I do not want to do it if it is not at our school, I am not one of those people at all. I will say 'hey, let us partner together' and we are just reaching the masses versus doing it for our own school," he said (N-511).

Participant D provided his rationale for viewing networking and collaboration as an integral step to improve diversity within agriculture:

If we do not create this bigger pool then we are just bumping heads, not really making and impact. It has to be our whole educational community that is doing that. [Name of school] has to contribute whatever it can to help create more thoughts, ideas. My biggest thing is when I am sitting with [colleague] at [name of school] and people like that we are taking and sharing what kinds of things we do to increase our numbers, we are talking about the same things you are asking now. That way we get to make adjustments in what we are doing that will help us be successful when we go back our institutions. That is

what we have to do; we cannot sit around and say "[name of school] has this great secret" and think that it is going to help us in general. (D-305)

Budget cuts at Participant M's school have caused him to collaborate more with other departments. He noted that the cuts have caused programs to collaborate more. "Where we're not able to work in saddles anymore, we have to be much more collaborative in our efforts, so I think that that's helped in some ways provide better support for students because we're all on the same page with that small pool of students that we have," he said (M-95).

Collaborations have also developed due to necessity in the case of Participant J's institution. Her college and surrounding colleges in the area were recruiting at local high schools, but they began to get some resistance from the teachers, citing issues with the schools recruiting specifically for their institutions and these presentations taking time out of teachers' days. As a result, the schools all got together to give presentations on the different types of work that their departments were doing:

> So I think again what it does as well is, it gives us the opportunity to send faculty who are
> diverse and come from diverse backgrounds themselves to try and provide role models
> for students and then also to provide diversity about what kinds of people are ---- faculty.
> We're pretty diverse too and so I think it's interesting from the students from that
> perspective as well. (J-265)

Participant R expressed her interest in learning more about diversity from her colleagues. "I just haven't had the opportunity to take advantage of those programs for the past several years so I haven't had an opportunity to even ask them, but it is a conversation that I do have when I am able to attend those seminars and those conferences," she said (R-667).

Participant O talked about how beneficial having a mentor has been for her professional career. "They are individuals from all types of backgrounds, white males to women of color, all who have been helpful in supporting me and helping me identify where all the resources are on campus that I have access to," she said (O-141).

Participant C shared a story about how going to a national conference had an effect on his perception of diversity:

The issue of cultural competence, to be honest with you, I wasn't as familiar with it and what it meant. And I just loved her talk. I loved all the talks. And I thought that it spoke to everything from ensuring opportunity, to the benefits that are real and observed in the so-called "real world" and having an appreciation for everything and anything that's diverse; diverse opinions, ethnicities, cultures, etc. to contributing to a work community or another community. And so I think that that was one thing I think that really had a major impact. (C-31)

Subtheme 3e: Building and maintaining relationships with students and families is essential. Numerous participants listed building relationships with students, families, and other administrators as an effective recruitment and retention method. The participants noted in various capacities how connecting with students allowed them to better understand the experiences of students, provide guidance, and made students less reluctant to ask for or receive assistance.

Participant N discussed the importance of having one-on-one relationships with students:

What has been the most effective is really building those one on one bonds with students, having those good discussions one on one in my office, hey come by let us do lunch, hey

86

come by after work let us talk. I will pop up in the hallway when you least expect it and

say I just want to get to know you, understand who you are, understand your struggle. (N-

423)

Participant R also discussed the importance of building relationships with students and

providing them with opportunities:

For instance, if we hear of a great internship in a field that they might be interested in, we

have a conversation about someone who's interested in say big cats, and then the

following week, we're talking to a faculty member who's actually getting ready to go

abroad to study big cats and is looking for an undergrad student, we'll remember that

student's name and we'll reach out to that student saying, "Hey, you really need to talk to

Dr. So and so because I think they have the same interest and this would be a fantastic

experience for you." So we really try to get to know our students. (R-143)

Participant B said that she believes the number one responsibility for anyone involved in

student programming is relationships. She goes on to talk about the importance of relationships

with Hispanic students' families. "And that's not just limited to ethnicity background. We try to

treat our students equally regardless of where they come from, but different experiences we've

had and different research we've done, especially for Hispanic families, the family dynamic is

particularly important to that demographic," she said (B-105).

Participant P discussed why she believes building relationships is the most effective

strategy in terms of retaining students:

I always believed that the most effective thing is developing relationships with people so

I believe the best programs are relationship based because it's only through helping

students make the best connections with other students and really helping them expand

their view in developing friendships and partnerships and really help change attitudes.

When you have friends, colleagues and people you work with in these different areas,

then it's a lot harder to disrespect them. I think the most effective things are when you

have a true personal connection to these things, and when it's not effective, then its just

window dressing. We're saying the right words but if you don't mean those things or truly

care about those things or see the people or individuals and try to support them in the best

way you can then I don't think you'll make any real change. (P-238)

Subtheme 3f: Leadership must support diversity efforts.

Support from leadership was shown by participants to be important to diversity

initiatives. Participants noted that the leadership supported these initiatives by setting forth

expectations for faculty members, setting forth the tone for inclusivity within the department,

and providing financial resources.

At Participant F's institution, a new dean was recently hired that specifically wishes to

work on diversity and inclusion efforts within the college:

We have new administration, dean, he started in March and that was one of the first items

on his checklist of things that he wanted to target and focus on in terms of efforts going

forward. So I think we are in a good place right now and we are going to see

more strategic efforts and overall effort and not just the one person. You will have faculty

and staff and students engaged and I think that is the approach that needs to be taken to

move forward. (F-339)

The dean in Participant P's college of agriculture has voiced his support for diversity initiatives within the college. "I'm finishing up my fourth year here and I know that two years ago we found a permanent dean, but he is also very legitimately committed to diversity, so not just words," she said (P-135). Participant O talked about how her college has moved towards a leadership model that places more emphasis on leadership. "What we have done is establish leadership roles in those spaces, which are very important because they have to drive the agenda and help move things forward," she said (O-53).

Participant H discussed how important it is for leaders to lead the charge for diversity initiatives and be knowledgeable of data relating to students of color and to be intentional regarding their involvement in the process:

At least in my experience very few people, well decision makers know about all that data, at least that's what they say. So I think the first thing that has to happen is the shared understanding of the state of things for I would say the faculty, so probably school professors and for all administrators. If you look at Damon Williams' work on inclusive excellence, one of the key tenants is this is the one thing that won't work from the bottom up. It has to start at the top and people have to be held accountable for diversity inclusion. (H-160)

Leadership taking initiative for diversity efforts was also something that Participant L discussed with the researcher. While her college of agriculture has had difficulty attempting to get diversity initiatives off of the ground, she says that her leadership's involvement has helped:

Our dean is very, very, very interested in supporting diversity work within our college. He got there a year before me so it is a relatively new administration here at the college

89

of agriculture and ever since he has been on board he has really spearheaded and streamlined this initiative. I do not have ant reasons on why we have had so many hiccups in trying to get these initiatives off the ground. All I can say is that we are still committed to them and we are working hard to make sure that diversity is part of what we do here; it is part of what we are known for. (L-224)

Participant N told the researcher about how invaluable the support from leadership in his college was when he was attempting to cultivate diversity within his college of agriculture. He first acknowledged that he felt fortunate to have the support of the leadership within his college, as he has colleagues who do not receive such support. He then said that the department did not know how to increase their diversity numbers, so they allowed him free reign in terms of trying new things. He said that the department acknowledged the lack of diversity present and provided him with resources to assist him in his diversity efforts. He said that none of what he accomplished would be possible without his dean, who he quoted as saying, "We understand that diversity is a huge issue number one but also in ag so whatever we have to do let us do it." Later in the interview, he stated how thankful he was that his dean was vocal in stating the importance of diversity programming within the college.

Participant H spoke at length about how leadership within the college supports her efforts. They have provided funding to assist her in her research pursuits regarding students and their lived experiences. "It costs money to transcribe that data so they support that through encouragement to apply for grants. They also supported that 2-year-long endeavor to take 60 staff and faculty through the 'Creating Inclusive Excellence Program'. So they invest a lot of money. Every time we got together, 12 times over 2 years, they bought lunch for everybody. So

that was resources and every time we got together it was 2 hours of everyone's time so they supported all that," she said. She also told the researcher that leadership within her college provides funding for the staff to attend various conferences dedicated to diversity.

Theme 4: Data validates success

Majority of the participants utilized demographic figures as a measure of success relating to diversity within their respective colleges of agriculture. This was measured in different ways, such as comparing demographics within colleges to state demographics, monitoring recruitment and retention numbers, and comparing demographic percentages from year-to-year.

Use demographic statistics to measure success. Participant L uses demographic figures as her primary means of measuring success related to diversity within her college of agriculture. "I think the obvious way to measure success would be based on the numbers, how many students we were able to successfully recruit previously, and then keep track of the number of students we are able to successfully recruit afterwards," she said (L-327). She also went on to note the important distinction between recruitment numbers and retention numbers, stating "there is a big difference between recruiting a student and getting them through to graduation."

Participant A discussed how his institution utilizes the demographics of his state as a tool of measurement against the demographics of his institution. "So I think when we have goals— state goals related to demographics. So I look at that, we have to report that out. For example, we might have 8.5 percent of African-Americans in the state. In the college of ag, are we reaching that? The same thing goes for Hispanic populations," he said (A-229). He also went on to say that he personally uses the success of his students as a measure of his own success, alongside the demographics within his college of agriculture.

When asked about how he measured success within his college of agriculture, Participant Q noted that he pays close attention to demographic and retention numbers. "We look at the percentages. Are our students diverse, however you want to look at it. Are they being retained until they graduate the same way as everybody else? I'm happy to say the answer is predominantly yes," he said (Q-319). He went on to say that while his college is one of the leaders in retention on his university's campus, boasting a retention rate of 90 percent, it's important to take university admission requirements into account, as this can have an effect on the students that are admitted:

So a couple years ago I asked my colleagues at (name of university), I said "So what kind of big majors did you do to increase your retention rate by 3 or 4 percent?" And they just looked at me and laughed a little bit and said "Not much, when the university raises its admission requirements, guess what? Retention is going to go up." (Q-325)

Participant D also utilized raw statistics as a measure of success regarding diversity within his college of agriculture. He also looks at the demographics of his peer institutions to obtain a better idea of where his college stands:

My measure of that sometimes is probably not as strong, I measure that from one year to the next in terms of how we continue to move forward. When I first came here 6 percent of the college was of color and the retention rate was about 45 percent. Now almost 17 percent of the college is of color and our retention rate is close to 90 percent. When I say retention I am talking about graduation rate. I am measuring that way, I am also in some ways playing around with looking at other institutions and seeing where we are with relation to other peer institutions and we are far and above a lot of our other peer

92

institutions. But when we are all struggling and all have so much to do, that is not sometimes a fair measurement in and of itself. (D-285)

While demographic figures can be used by colleges to judge their success, actually acting on the data and using it to inform future decisions has assisted Participant H's college of agriculture with its diversity initiatives:

Pulling the data and looking at the gaps has been effective. It is in general a very data-driven faculty, so having those numbers up and readily available at least causes pause and that's a start and the college level administrators are very interested in this data. so I do think it has helped. Has it answered all the problems? No. What the data does is inform. I'm not convinced yet that we've done all that we can programmatically to address what we find in the data, which would be the next step. (H-320)

Summary

The results from the analysis of in-depth interviews with the participants have been shared in this chapter. The researcher analyzed interview transcripts, which led to five overarching themes: 1.) Diversity as a multifaceted and evolving concept. 2.) Students of color face barriers to access. 3.) Success strategies for students of color require investments from administrators. 4.) Data validates success.

93

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS, AND IMPLICATIONS

The purpose of this study was to obtain a better understanding of the perceptions of administrators regarding diversity in agriculture and the strategies they use to successfully recruit and retain underrepresented undergraduate students within post-secondary institutions, which will assist in improving the number of underrepresented students involved in the field. This study sought to address gaps in the literature by answering the following research questions related to underrepresented students in colleges of agriculture at 1862 land-grant institutions:

1.) How do administrators perceive their role within the scope of recruiting and retaining students?

2.) What barriers most significantly impede the success of students entering and matriculating through college?

3.) What strategies do administrators use to recruit and retain students? Which methods have proven to be the most effective?

Summary of Study

The researcher asked the participants questions regarding their perceptions of various aspects of diversity and their positions at their respective universities, including their perceptions of diversity, how those perceptions were shaped, their job responsibilities, and how their roles within their colleges aided in cultivating diversity within their colleges of agriculture. The study included 18 administrators within 17 colleges of agriculture within 1862 land-grant universities. The researcher first constructed a list of all applicable 1862 land-grant institutions and divided them by Census-defined regions of the United States (United States Census, 2016). After

assigning numbers to each institution, the researcher used a random number generator to select which schools he would be interviewing in each region. The researcher went to the website of each institution and perused them for faculty and staff related to diversity and inclusion within each college of agriculture. In the event that he found such an individual, he would email them to solicit their participation. In many instances, there was not an individual that handled diversity for the college, so the participant would call the college and read the conversation script (Appendix A) to ask for the appropriate individual. The administrators belonged to one of three distinct classifications: recruitment and retention officers, who handle the recruitment and/or retention responsibilities within their college of agriculture, deans, who oversee various aspects of their colleges of agriculture, including diversity, and diversity officers, who handle various aspects of diversity within their colleges of agriculture, including cultivating inclusive environments, recruiting and retaining diverse students, and encouraging and considering diversity during the hiring process. Out of 18 participants, 7 were deans, 5 were recruitment and/or retention officers, and 6 had other roles related to diversity or inclusiveness. The researcher collected data through in-depth interviews with each of the participants, with the interviews ranging from the length of 15 minutes to 1 hour. This study was phenomenological in nature, meaning that it describes the lived experiences of individuals about a concept (Creswell, 1998). The questions in the interviews served the purpose of answering the overarching research questions of this study. After each interview, the participant took memos regarding the interview experience. There are 56 land-grant institutions founded from the 1862 legislation; out of this amount, 30 percent (n=17) were included in this study. These findings are reflective of the 18

total participants in the study and should not be used as a representation of all administrators

tasked with the responsibilities of diversity within their respective colleges of agriculture.

From the data analysis, four major themes emerged to address the research questions:

1. Diversity as a multifaceted and evolving concept

2. Students of color face barriers to access

3. Success strategies for students of color require investments from administrators

4. Data validates success

Discussion

In this section, the researcher describes in detail how the responses from the participants

relate to the literature around the subthemes. The information will be presented by the

overarching theme and related subthemes.

Theme 1: Diversity is a multifaceted and evolving concept

Subtheme 1a: Diversity is a combination of differences. The participants had varying

definitions of what they considered "diversity." The characteristics that comprised these

definitions included race, socioeconomic status, sexual orientation, birthplace, and religion.

Many of the participants included characteristics outside the realm of what is typically

considered "diversity." such as learning styles, diversity of thought, or anything else that makes

students "different." Some participants also viewed diversity as a culmination of people from

different backgrounds and understanding differences in one another. According to Sorofman

(1986), diversity is a difficult concept to define. People have different interpretations of what

composes diversity. Components that are typically included in definitions of diversity are

socioeconomic status, geographic origin, migratory status, race, language, religion, and political

and social interests. Haring-Smith (2012) discussed the importance of focusing not only on race and ethnicity, but also focusing on socioeconomic status, as this can have an effect on various cultures and ethnicities. The varying answers that participants used to define diversity coincide with authors' views of the term.

Characteristics of diversity outside of race may relate to what Hopewell, McNeely, Kuiler, and Hahm (2009) consider the goal of academia, which is to nurture, develop, and aid in the creation of knowledge, ideas, and analytical thinking. Including a wider range of characteristics within the context of diversity could assist in the creation of more knowledge, ideas, and perspectives regarding how students, faculty, and staff perceive and appreciate differences in one another.

Subtheme 1b: The importance of a diverse workforce in agriculture. Two of the prominent follow-up questions asked by the researcher were "Do you believe that diversity is an integral aspect of agriculture? Why or why not?" and "How urgent do you believe it is that colleges of agriculture increase the amount of underrepresented students?" Out of 18 participants, all of them said to varying degrees that they felt diversity in agriculture and increasing the amount of students of color within colleges of agriculture were important. According to Hurtado (2007), it is higher education's responsibility to advance social progress. If diversity is something that colleges of agriculture genuinely wish to improve, it must be everyone's responsibility, not just a select few.

Subtheme 1c: Personal experiences shape perceptions of diversity. According to Fishbein and Ajzen (2010), the beliefs that an individual holds can affect how they perceive or act towards a given construct. Personal experiences can influence the beliefs that an individual

has. Individual differences, such as personality and demographic characteristics, can influence the experiences people have, the information they are exposed to, and how they choose to interpret and remember this information. The participants discussed various aspects of their backgrounds that were impactful in shaping their perceptions of diversity, including their upbringing and personal and professional experiences. Six of the participants identified their upbringings as students of color as a significant influence on their perceptions of diversity. For example, participant M talked about his experience growing up as a person of color in a segregated city. He works at the same institution where he attended school. As a person of color, he said that he was once "in the shoes" of the students of color at his institution. He went on to note that he felt he could relate to the experiences of the students and he knew what they needed to be successful. "I was in their shoes. I did my undergraduate and graduate work here at [name of school] and I feel like I can relate to their experiences and know that they need people," he said (M-115). He recognized the need of people in positions similar to his because he knew what students of color at his institutions were experiencing. According to the reasoned action approach (Fishbein & Ajzen, 2010), the beliefs and perceptions that an individual has regarding a particular behavior will affect the likelihood of it actually being performed. Participant M's perception of being a student of color at the institution he taught at informed the actions that he took to assist students.

Participant D shared his experience of having to assimilate to various communities that are different than his own. As a teacher in a community that was drastically different than his, he came to the realization that things were different than he was accustomed and that he could not be naïve about differences in individuals; he had to embrace it. He began to view the world

differently after that experience. He went on to say that those experiences shaped his "sense of diversity." He said he wanted students to understand diversity and make adjustments based on his experiences. Participant B attributed her work experience with students of color and people from different backgrounds as a significant influence on her perception of diversity and how that subsequently has an effect on her intentionally trying to meet the needs of a variety of different types of students. These responses corroborate Fishbein and Ajzen's (2010) assertion that people form beliefs about personal and environmental factors that could help or impede the likelihood of the behavior happening. Their perceptions and previous experiences also affected how they accomplished their goals of assisting students of color.

Theme 2: Students of color face barriers to access

According to Strayhorn (2010), one reason that underrepresented students are not well represented in the agricultural sciences at predominately white institutions is because they tend to have more barriers when compared to their white counterparts, perceived or otherwise, that affect their decisions and ability to pursue agricultural careers. These barriers include a lack of mentors of the same or similar ethnicity (Strayhorn, 2010), finances, inadequate preparation, and lack of encouragement and support from culture or family (Perna & Titus, 2005). These barriers can contribute to less minority enrollment in undergraduate and graduate courses (Moss, 2011).

The researcher found that financial barriers and negative perceptions of agriculture were the most prevalent barriers that prevented administrators from successfully recruiting and retaining students of color within colleges of agriculture. The aforementioned literature mentioned several barriers that were not mentioned by participants. Inadequate preparation was

not listed as a significant barrier. A lack of preparation and a lack of mentors of a similar ethnicity were mentioned sparsely, but not enough to consider either a theme.

Subtheme 2a: Negative perceptions of agriculture. Negative perceptions of agriculture is a significant barrier to the recruitment of students of color**.** Over the last few decades, there has been a significant decline in the number of students involved in agricultural education (Mallory & Sommer, 1986; Scott & Lavergne, 2004; Torres & Wildman, 2001). Despite the fact that agricultural careers are continually opening (Goecker, Smith, & Goetz, 2010), students are not pursuing them. One of the world's greatest challenges over the next 34 years will be feeding a growing population. According to the STEM Food & Ag Council (2014), it will take a wide variety of individuals from different backgrounds to address the needs of a growing nation. Many students are not aware that agriculture encompasses additional fields such as engineering, law, biochemistry, and business. The researcher found that participants consistently discussed the lack of knowledge that students have about the variety of careers available in agriculture. Many of the participants stated that students thought agriculture was "just farming" or a one-dimensional field. Many of the participants also said students would prefer to be doctors, lawyers, or other more well-known professions. Based on participants' comments, it would seem agricultural literacy is relatively low for the average student they are trying to recruit; and this impacts the likelihood of students of color pursing agricultural degrees. Students' lack of knowledge about the field made it difficult to recruit them to agricultural disciplines..

Seeing agriculture as only "farming" or "backbreaking labor" were other prevalent perceptions that served as barriers. Many of the perceptions of agriculture also included a lack of inclusivity for people of color and painful historical imagery, such as slavery and the challenges

100

of migrant Hispanic workers. Perceptions of agriculture as solely farming are not new, but the researcher did not see an abundance of literature addressing historical perspectives of the field.

Financial barriers are prevalent. Many of the participants listed the rising cost of education as a significant barrier to both the students and the institutions trying to recruit them. There were concerns from students and their families that they would not be able to pay for a college education, especially at expensive research institutions. According to Long and Riley (2007), financial aid for college students disproportionately affects disadvantaged populations that are already underrepresented in higher education. With the availability of need-based aid diminishing, along with more prevalent loans, tax breaks, and merit-based aid, it can be difficult for students of color that come from a low socioeconomic status to attend college.

According to McWhirther (1997), if a student of color perceives a field as inaccessible due to race, the student is less likely to pursue it. Many of the aforementioned barriers were listed in high frequencies by participants, meaning they were fairly common. If students associate these barriers with colleges of agriculture, they will likely not become involved in the field. Regardless of whether or not a barrier is real, it has an effect on a student's educational aspirations (Ojeda & Flores, 2008). If increasing diversity within agricultural is genuinely a desire of 1862 land-grant institutions, these barriers should be rectified not only due to accessibility, but also due to the perception that such characteristics will cast on the field of agriculture as a whole.

Theme 3: Success strategies for students of color require investments from administrators.

According to participants of this study, administrators have to invest some type of resource in order for recruitment and retention strategies to be effective. Providing financial

assistance to students, sacrificing time and effort to promote diversity initiatives, or dedicating time and resources to educate students about agriculture are examples of what administrators must sacrifice in order to ensure the success of students of color.

Subtheme 3a: Creating comfortable and inclusive environments. Many participants discussed the importance of creating inclusive and welcoming spaces for students of color as a recruitment and retention strategy. Strategies included having welcoming and culturally competent faculty members and activities that make students of color feel like part of a community. According to Seidman (2005), campus climate and the ability to cope with a campus environment, among other factors, affect the likelihood of a student successfully matriculating through college. If colleges of agriculture genuinely desire to increase the amount of students of color pursuing agricultural disciplines, it is essential that these colleges have an environment that encourages the success of those who have not been traditionally represented within the field. While the participants mention it often, this echoes the importance of inclusive pedagogy, which utilizes teaching practices that are inclusive and welcoming to students from different backgrounds (Torres, Howard-Hamilton, & Cooper, 2003).

According to Wehbe-Alamah and Fry (2014), creating a culturally sensitive and welcoming academic environment for diverse students consists of five components: (1) student centeredness; (2) on-going cultural assessment and evaluation of students, faculty, staff, and the academic department; (3) educational and curricular adaption and accommodation; (4) on-going cultural competence training; and (5) programmatic adaption, accommodation, and revision. If participants continue to engage in concentrated efforts to cultivate diverse and inclusive environments, the climate within colleges of agriculture could begin to shift, thereby dealing

102

with some of the perception issues that plague the field. There was not a significant amount of participants that had resources devoted specifically to the purpose of recruiting and retaining students of color. Only six administrators were specifically dedicated to diversity and inclusion within their institutions.

Cole and Espinoza (2008) found a link between supportive educational environments and the retention of students of color in STEM fields. They classified "support" as advice from students of similar ethnic groups, role models of color, and support from staff and administration. Many of the participants said that they do their best to create supportive, comfortable, and inclusive environments for students of color. Participants listed numerous strategies for this: diversity offices within colleges of agriculture, advisors that can relate to the experience of the students they are advising, welcoming cultural artifacts from different cultures, academic assistance for students in need, and supportive faculty members with high degrees of cultural competence. Other participants mentioned individual instances of assisting students of color, such as supportive faculty members acting as mentors or personal stories.

Subtheme 3b: Providing academic and support resources. According to Palmer, Maramba, and Dancy (2011), recruitment strategies that have proven to be effective for students of color in STEM include group support and involvement in STEM-related activities. Cole and Espinoza (2008) report that support can include advice from students of similar ethnic groups, role models of color, and support from staff and administration. Participants in the current study noted the importance of getting students connected with faculty members that can speak to their academic and career issues. Helping students become familiar with various academic resources

on campus and within the department has been a proactive method of retention that multiple participants identified.

   MANRRS. Many of the participants listed MANRRS (Minorities in Agriculture, Natural Resources, and Related Sciences) as an effective retention mechanism within their colleges of agriculture. MANRRS seeks to support endeavors that will foster and promote growth among ethnic minorities within the agricultural sciences (MANRRS, 2016). Participant D described MANRRS as "something that has had significant influence" and "a student leadership club" that fits into the goals of diversity on its chapter's respective institution. Participant D went on to say that MANRRS fits into his university's diversity and inclusion strategies.

   Participant A utilized MANRRS as a retention mechanism, having members talk to prospective students during their visits. MANRRS accomplishes the goal of bringing students of diverse backgrounds together for a singular purpose and utilizing strategies to retain and engage its members. This corroborates a study by Outley (2008), who maintained students that belong to organizations like MANRRS tend to have more positive perceptions regarding career opportunities and choice in major. According to Palmer, Maramba, and Dancy (2011), peers can have positive influence on success, and specialized activities that assisted students in understanding STEM professions can help better prepare students from success. MANRRS accomplishes all of these tasks.

   Subtheme 3d: Networking, collaboration, and the dissemination of knowledge
Networking, collaborating, and disseminating knowledge with others yielded the participants a variety of different benefits. Collaborating with others has allowed participants to share resources and the responsibility of ensuring the success of students within colleges of agriculture.

For example, participant D discussed how networking and collaborating with colleagues at

different institutions can be beneficial to solving the diversity issues within agriculture, saying,

"If we do not create this bigger pool (of students) then we are just bumping heads, not really

making and impact. It has to be our whole educational community that is doing that." Many of

the participants noted that various parts of their success were due to collaborations or the

assistance they received from colleagues. The participants also spoke in depth about learning

from their colleagues. Several participants shared meaningful experiences from attending

conferences or talking to colleagues across the country regarding diversity issues. According to

Amey (2007), institutions or units enter partnerships because of resource scarcity, state

mandates, and institutional goals, all of which were mentioned in varying capacities by

participants. Personal relationships are also a prevalent reason to enter a partnership. Partnerships

allow collaboration, which allows a shared search for information and solutions related to the

interests of all parties involved. This literature mirrors the desires of the participants to

collaborate in order to reach their institutional goals.

Subtheme 3f: Leadership must support diversity issues

Many of the participants discussed the importance of having leadership within the college

of agriculture that is supportive of diversity initiatives. This support can come in the form of

financial assistance to faculty and staff, setting the tone for the rest of the department, and

dedicating time and resources to diversity initiatives. It is also the role and responsibility of

leadership to set the tone for their university by aligning with values and goals that both they and

the broader academic community believe should be areas of emphasis. In order for there to be

changes within the narrative of diversity for college students, leaders and administrators within

higher education must make recruitment and retention of underrepresented students a priority and they must set plans into action (Hopewell, McNeely, Kuiler, & Hahm, 2009).

The path-goal theory of leadership (House, 1996) helps explain the importance of leaders within colleges of agriculture supporting administrators with diversity initiatives. Within the scope of this theory, leaders provide support to their subordinates so they can be successful in accomplishing their goals is an example of the path-goal theory at work. The participants that discussed the support they had from the leadership in their college stressed how important and beneficial it was to improving diversity and inclusion efforts. The leaders of colleges of agriculture must intentionally support diversity efforts and have expectations for faculty and staff within the department to make lasting change.

With path-goal theory, the role of a leader is to successfully guide followers to the completion of an objective. If administrators within colleges of agriculture are not making diversity and inclusion a priority, regardless of their desire for an increase, it will likely not occur. These administrators will yield better results by making diversity and inclusion stated goals and encouraging behaving in a manner that will motivate everyone to improve diversity.

Theme 4: Data validates success

When the researcher asked participants how they measure success within their position as it relates to the recruitment and retention of underrepresented students, all of the participants listed some type of statistical measurement, such as recruitment, retention, and graduation rates. Some of the participants listed these types of statistics as their primary means of judging success. Within the scope of House's (1996) path-goal theory of leadership, administrators' behaviors have an effect on the satisfaction of followers; to judge the effectiveness of recruitment and
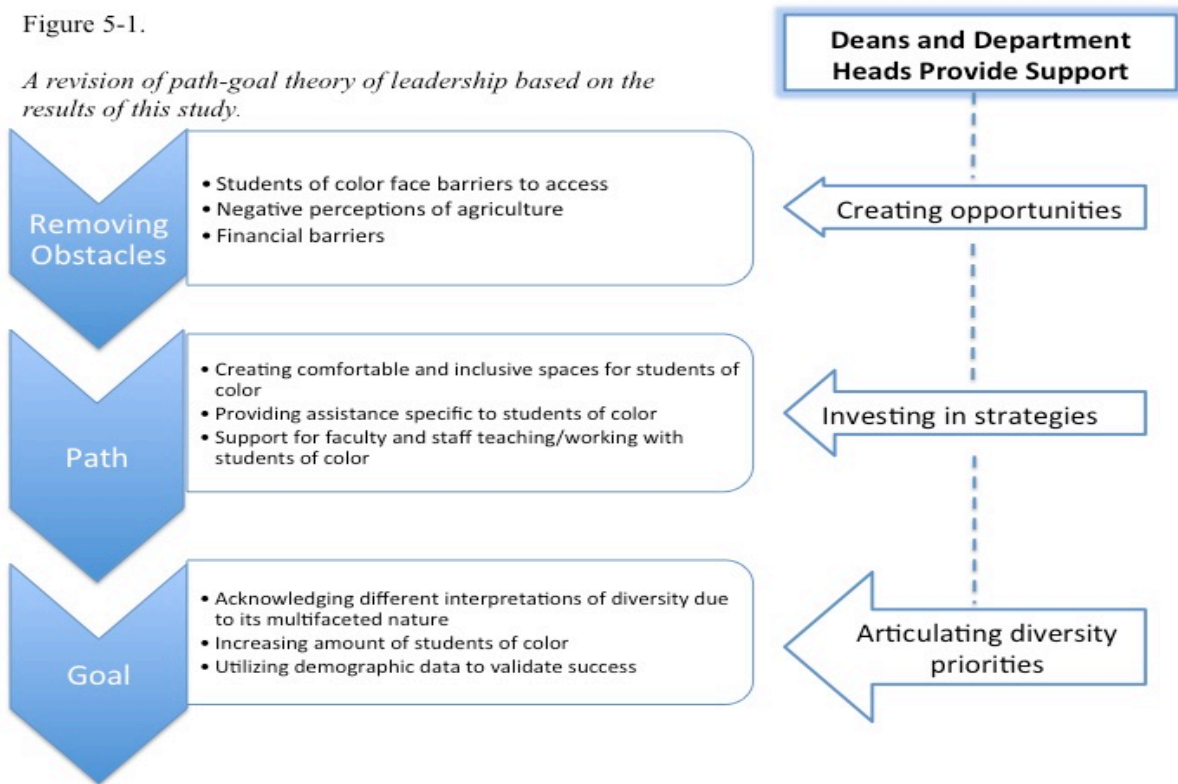
106

retention efforts, the satisfaction of students of color within colleges of agriculture should be taken into account. Path-goal theory is utilized to explain how administrators within colleges of agriculture in the aforementioned example measure success.

Using Path-Goal Theory of Leadership to Assist in Recruitment and Retention Efforts

The path-goal theory of leadership (House, 1996) was utilized as one of the frameworks for this study. Using this theory as a framework for the results of this study, the researcher came to the conclusion that administrators should intentionally use path-goal leadership as a means of articulating goals, paths to success, and ways to remove obstacles and provide support. Figure 5-1 incorporates the four themes that the researcher introduced previously and provides examples of how administrators can use this theory to guide their recruitment and retention efforts.

Figure 5-1.

A revision of path-goal theory of leadership based on the results of this study.

Removing Obstacles
- Students of color face barriers to access
- Negative perceptions of agriculture
- Financial barriers

Path
- Creating comfortable and inclusive spaces for students of color
- Providing assistance specific to students of color
- Support for faculty and staff teaching/working with students of color

Goal
- Acknowledging different interpretations of diversity due to its multifaceted nature
- Increasing amount of students of color
- Utilizing demographic data to validate success

Deans and Department Heads Provide Support

Creating opportunities

Investing in strategies

Articulating diversity priorities

Key Components of Path-Goal Leadership Within the Context of this Study

- **Removing Obstacles:** Administrators should be proactive in removing potential obstacles for students of color. This can be accomplished by using various strategies in tandem, such as creating comfortable environments for students, providing academic resources and support, providing financial resources, administrators networking and collaborating with colleagues, and building relationships with students, faculty, and other administrators. Deans and department heads can help by creating opportunities for students to learn more about agriculture by having faculty educating students and families on the field. Deans and department heads can also create opportunities by providing financial assistance to students of color by awarding scholarships or financial aid.

- **Path to Success:** The path to success for administrators consists of creating comfortable and inclusive spaces, providing assistance specific to students of color, and providing support for faculty and staff teaching and working with students of color. Following this path can increase the likelihood of students of color being successful in colleges of agriculture. Deans and department heads can assist administrators by investing in this path by providing funding and support for diversity and inclusion initiatives.

- **Goals:** Goals for administrators should include acknowledging that there are different interpretations of diversity due to its multifaceted nature, increasing the amount of students of color, and utilizing demographic data to validate their success. Deans and department heads can provide support by openly articulating these goals as diversity priorities within the college. Leadership is placing emphasis on these goals and as a

result, they will trickle down to the rest of the department, including faculty, staff, and students.

The Role of Perception in the Actions of Administrators

According to Fishbein and Azjen (2010), within the context of reasoned action theory, three types of beliefs are usually formed regarding a behavior, in this case, the behaviors that the participants display when attempting to assist students of color:

1. People hold positive or negative expectations regarding the consequences they might have to face if the action is performed.

2. People form beliefs that important people in their lives would approve or disapprove of the behavior being performed.

3. People form beliefs about personal and environmental factors that could help or impede the likelihood of the behavior occurring.

Utilizing reasoned action theory as a framework, within the context of this study, the researcher came to the conclusion that:

1. The administrators held mostly positive expectations regarding the potential of strategies for the recruitment and retention of students of color. The administrators performed various functions of their job in the hope they would be successful with their diversity recruitment and retention efforts.

2. Administrators worked to improve the recruitment and retention of people of color with the expectations of the upper leadership of their college supporting their efforts. Many of the participants discussed how important it was to have support from their leadership when trying to improve diversity within their college of agriculture.

3. Based on the previous experiences of the participants, they formed beliefs regarding the effectiveness of strategies that affected the likelihood of students of color successfully being recruited and retained. These strategies include creating comfortable environments for students, providing academic resources and support, providing financial resources, administrators networking and collaborating with colleagues, and building relationships with students, faculty, and other administrators.

Promising Practices

The following suggestions were not mentioned enough to justify making them into a theme, but the researcher believes these are practices that could aid in recruiting and retaining students of color and should be investigated further.

Building Relationships

The importance of building relationships was stressed in different capacities by participants. Participant N told the researcher about how effective forming relationships with students was as a recruitment strategy and about how it allowed he and the student to form connections, saying, "What has been the most effective is really building those one-on-one bonds with students, having those good discussions one on one in my office; 'Hey come by let us do lunch', 'hey come by after work, let's talk.' I will pop up in the hallway when you least expect it and say I just want to get to know you, understand who you are, understand your struggle." Building relationships also allowed participants to provide opportunities to students. These relationships extended to students' families when administrators were recruiting students. Participants identified building relationships with the students' families as an effective method of recruitment. The importance of relationships is also present within the narrative of the

participants' careers as well. Participant H told the researcher that she would not be at the current point she is in her career had it not been for the relationships that she has with people, stating, "I know how to build relationships and I wouldn't have gotten to where I am by not knowing how to build relationships and move with relationship" Administrators focusing on building relationships with their students can prove to be a useful strategy.

Summer and Pre-College Programming.

Some participants spoke to the importance of summer and pre-college programming. These are opportunities for students to attend colleges of agriculture for a period of time during the summer. During their time in the colleges, they have a variety of professional experiences and engage in experiential learning. These programs allow students to get to campus early, learn about their surroundings, learn about resources, and be prepared to begin their school year already acclimated to their surroundings. According to Ellis (2013), summer programs can have a positive effect on the academic motivation of students. Many land-grant institutions are large universities, and such programming would assist students in being successful once they arrive to campus. These types of programs are also an opportunity for students to learn about and experience agriculture. If students have higher levels of knowledge and positive experiences regarding agriculture, they may be more interested in pursuing a career in the field (Cannon, Broyles, Seibel, & Anderson, 2009). Summer programming is a useful tool to expose students to the field and allow them to experience different aspects of it. According to Harper, Patton, and Wooden (2009), summer programming is an effective means of acclimating students of color with college campuses and ensuring that they are aware of the resources available on campus before they arrive.

111

Inclusivity

Faculty, staff, and students should all be educated on cultural competence. In order for an environment to truly be inclusive, everyone within colleges of agriculture should be educated on how to properly interact with and be respectful of people from all backgrounds. This can reduce instances of unconscious bias and stereotyping from both faculty and students. Cultural competence training could also potentially help administrators within colleges of agriculture. Administrators should consider obtaining resources from the National Center for Cultural Competence at Georgetown University.

Faculty should be supporting students' efforts and doing what they can to make the environment within colleges of agriculture as comfortable as possible. Inclusive pedagogy is important for students of color, especially within colleges of agriculture, where there may be a stigma of diverse individuals not being welcomed. Several participants noted that faculty sometimes unintentionally doing things that could offend or dissuade students of color, such as using examples in class with stereotypical imagery or encouraging them to pursue different disciplines because they are struggling academically.

Educating the Public on Agriculture

The overall perception and understanding of what agriculture consists of needs to be shifted. Educating students and the general public about agriculture is important not only for recruitment, but to shift the current perception of the field. The participants listed various interactions in which they educated both the students and the general public about what agriculture consists of, attempting to shift the perception of agriculture as "just farming" in the process.

Peer Mentoring

Colleges of agriculture should create peer-mentoring programs for their students. Mentorship for students of color is an important aspect of successful retention. Participants listed various capacities in which mentors serve at their institution, including assistance with academic preparedness and helping students be comfortable within their environment. Peer mentoring has also been an effective strategy listed by participants. Guidance regarding such programs is covered by Colvin and Ashman (2010) and Minor (2007).

<div align="center">

Implications and Recommendations for Practice

</div>

Students of color have a variety of barriers standing in the way of their opportunity to receive an agricultural education. If colleges of agriculture desire to change the narrative regarding the lack of diversity within the field, they must be intentional regarding their recruitment and retention goals and strategies. The findings of this study point to several recommendations to improve their diversity and inclusion efforts:

- Leaders within colleges of agriculture must support diversity initiatives. Many of the participants talked about how supportive leadership within their colleges have helped them push their diversity initiatives forward. This support came in the form of financial resources, dedicating time to diversity initiatives, implementing requirements for experience with diversity in the hiring process, and being a good role model. The participants that were deans within their colleges of agriculture often told the researcher that they supported diversity within their colleges by intentionally working with their faculty and staff to ensure that diversity is a priority. If improving diversity within the

field of agriculture is a priority, the charge to make change must come from the leadership.

- Colleges of agriculture should house diversity resources within the college. There are specific issues related to perceptions of agriculture and inclusivity for students of color that need to be addressed before improvement can occur. These resources can come in the form of dedicated faculty and staff resources for students of color, academic programming dedicated to assisting students of color, or diversity committees. Such resources would help to not only assist students of color, but would also assist in improving inclusivity within colleges of agriculture. This also accomplishes the goal of making environments more comfortable for students of color, which is incredibly important for their success. Many of the participants talked about how important it is to make an inclusive environment where students can work with one another.

- The backgrounds of those tasked with improving inclusion and diversity within colleges of agriculture should be considered. The participants that were diversity officers all had characteristics or backgrounds that allowed them to better-understand the experiences of students of color, such as gender, ethnicity, experience living in various communities with different backgrounds than their own, and other characteristics. This is not an assertion that only people of color should inhabit these types of roles, but those in charge of providing resources and assistance for students of color should be able to relate to their needs and experiences. The National Association of Diversity Officers in Higher Education (NADOHE, 2014) has developed Standards of Professional Practice for Chief

Diversity Officers. This would be a useful set of standards for diversity officers within colleges of agriculture.

- Leaders that genuinely want to see their colleges of agriculture thrive with diversity and inclusion should support diversity efforts by leading the charge on diversity initiatives within the college, providing time and financial resources for diversity training and programming, and actively working to cultivate an inclusive environment for faculty, staff, and students. Participants discussed the importance of assistance they received from faculty members in terms of outreach, providing resources, and collaboration.

- Leadership within colleges of agriculture should evaluate their faculty members on their diversity efforts. Diversity is not and should not be the sole responsibility of one individual. Colleges of agriculture should consider making diversity a responsibility of all faculty and staff. For more information regarding diversity and inclusion practices that can be utilized by faculty, administrators should refer to the Association of American Colleges and Universities' (AACU, 2016) "Diversity, Equity, & Inclusive Excellence" documentation, meetings, and publications.

- Institutions should collaborate and network with one another to solve diversity issues within agriculture holistically, not just individually as universities. In many cases, the participants conducted their outreach and programming with other colleges or entitles to make a greater impact. Administrators should explore different means of collaboration with different universities in an attempt to solve the diversity issues plaguing colleges of agriculture rather than solely focusing on recruiting for their respective institutions.

- A think-tank should be formed that includes those individuals that deal with diversity and inclusion work within colleges of agriculture. A number of participants noted the importance of working alongside other professionals to solve diversity issues within agriculture. A consortium of professionals pooling together knowledge regarding how to solve the issue could be beneficial to all parties involved.

- Administrators should look to students of color to better understand their experience and accordingly craft resources to assist them. Four participants talked about the importance of talking to and learning from students regarding their diversity and inclusion efforts. Several participants in this study were able to learn about how effective recruitment and retention methods have been by surveying students and asking them for their opinions.

Recommendations for Further Research

This study utilized the path-goal theory of leadership (House, 1996) and reasoned action theory (Fishbein & Azjen, 2010) to examine the perceptions of administrators within colleges of agriculture as it pertains to the barriers to recruitment and retention of students of color. The resulting findings discussed the participants' perception of their roles within their respective colleges of agriculture, what they believed to be the primary challenges students of color face, and the strategies that they have found most effective for alleviating these barriers. The following topics are recommended for future research within the realm of diversity and inclusion within colleges of agriculture:

- More research should be conducted that examines the background and education of individuals with the responsibility cultivating diversity within colleges of agriculture. To a large degree, perception affects how people carry out a task (Fishbein & Azjen, 2010).

116

This perception can be shaped by a variety of background experiences. It would be helpful to know more about the backgrounds of the individuals who are charged with improving diversity and inclusion within colleges of agriculture. This would help to ensure that those individuals tasked with diversity and inclusion have the knowledge and experience to assist students of color.

- There is a need for more research related to diversity practices within colleges of agriculture. While this study examined the perceptions of the administrators who oversee some of these programs, a more holistic examination of the diversity practices present at different colleges of agriculture could provide administrators with a better idea of effective strategies that could be useful to their institutions. House's (1996) path-goal theory of leadership can be used to remove barriers in pursuit of goals.

- More qualitative research should be conducted that examines the experiences of students of color within colleges of agriculture at 1862 land-grant institutions. It would be beneficial to learn about the experiences of students that have historically experienced differing degrees of difficulty within the field of agriculture. Future research should examine the positive benefits of inclusive environments and the best way to cultivate inclusivity within colleges of agricultures.

- Future research should examine how to create more supportive and inclusive environments for students of color within colleges of agriculture. Supportive environments provide the assistance that students of color need to be successful while inclusive environments make students feel as if they are welcomed within their college; these are not necessarily mutually exclusive. Having comfortable environments for

students of color was a prominent retention strategy identified by various participants. More supportive and inclusive environments for students could lead to more graduates of color, which could potentially strengthen the pipeline for students from different backgrounds.

- While the participants in this study did not list academic difficulties as a prevalent barrier, it would be useful to know how they impact the successfulness of students of color pursuing academic degrees. According to Strayhorn (2010), academic preparation is a significant barrier that students of color struggle with. Having more information about the academic struggles that students of color face could be useful in developing programming for students of color that may have difficulty excelling in agriculturally-based disciplines.

- More research should be conducted regarding what affects the likelihood of a college of agriculture having resources dedicated to diversity and inclusion. Out of the 18 participants interviewed, only 6 of them had positions specifically related to diversity. Considering that numerous participants acknowledged the importance of diversity in agriculture, it would be helpful to know why there are not more resources dedicated to assisting students of color.

- More research should be conducted regarding the challenges that students of color face at 1890 land-grant institutions. While these are historically black colleges and universities, there are likely challenges students at these institutions face. These challenges could potentially impede the growth of a more diverse workforce within the field of agriculture.

Conclusion

This study explored the perceptions of administrators regarding diversity and the recruitment and retention barriers that students of color face in colleges of agriculture at 1862 land-grant institutions. This study utilized the path-goal theory of leadership (House, 1996) and reasoned action theory (Fishbein & Azjen, 2010) as its theoretical foundation. The researcher sought to understand how administrators perceive their role regarding the recruitment and retention of students of color, which barriers most significantly impeded the success of students entering and matriculating through colleges, and which strategies administrators used to effectively recruit and retain students of color.

This study shows that, for the participants, diversity is a concept with different meaning for different people, according to aspects of their upbringings and personal lives. The personal experiences that the participants had impacted how they responded to the challenge of effectively recruiting and retaining students of color. While previous work has indicated that perception was a significant part of the problem related to recruiting students of color to agricultural disciplines, this study highlights just how significant of an issue it is. Respondents routinely listed negative historical connotations of agriculture and a perceived lack of diversity as hindrances to recruiting students.

Networking, collaborating, and sharing knowledge is an important aspect of handling the challenges regarding the lack of diversity in agriculture. In order to solve issues of diversity within colleges of agriculture, knowledge must be shared between researchers and practitioners alike. Focusing on solving issues on an institutional basis will not address the overarching lack of diversity facing the field. Leadership must also take an active and intentional role in answering

concerns regarding diversity and inclusion. Historical contexts of agriculture for people of color tend to be negative; colleges of agriculture not only have to convince students that agriculture is more than history books paint it to be, but they also have to convince the general public. Stereotypes are prevalent within agriculture and education is important to show people what agriculture is and what it is not.

Participants routinely stated the importance of having the support of individuals in leadership roles within the college. Leaders must invest in resources housed within colleges of agriculture, as they are important in cultivating a welcoming environment for students of all backgrounds.

The most important conclusion from this study is that diversity is an integral aspect of agriculture and cultivating diversity is an activity that requires intentional effort and sacrifice from individuals throughout a college of agriculture, not just the leadership or those that are tasked with recruitment and retention. People must be involved at all levels of the college, from students to the leadership, in order to create an inclusive environment for all. Participants routinely discussed how important it is for colleges of agriculture to be welcoming to students of color; administrators should make a concentrated effort to show students of color that they can excel and feel comfortable within a college that cares for and supports its students.

The lack of diversity within colleges of agriculture is a symptom of the lack of diversity at colleges and universities throughout the United States. While it may be difficult to solve such an overarching issue, administrators and leadership within colleges of agriculture can be a beacon for change by creating a culture within colleges of agriculture that can potentially permeate various aspects of diversity at the university level.

References

Amey, M. J., Eddy, P. L., & Ozaki, C. C. (2007). Demands for partnership and collaboration in higher education: A model. *New Directions for Community Colleges*, 2007 (139), 5-15. doi: 10, 1002/cc.288

Allen-Ramdial, S. A., & Campbell, A. G. (2014). Reimagining the pipeline: Advancing STEM diversity, persistence, and success. *BioScience, 64*(7), 612-618.

Amaro, D. K., Abriam-Yago, K., & Yoder, M. (2006). Perceived barriers for ethnically diverse students in nursing programs. *Journal of Nursing Education, 45*(7), 247-254.

Amey, M. J. (2006). Leadership in higher education. *Change: The Magazine of Higher Learning, 38*(6), 55-58.

Anderson, J., & Kim, E. (2009). Youth leadership development: Perceptions and preferences of urban students enrolled in a comprehensive agriculture program. *Journal of Agricultural Education, 50*(1), 8-20.

Association of American Colleges and Universities. (2016). Diversity, equity, and inclusive excellence. Retrieved from https://www.aacu.org/resources/diversity-equity-and-inclusive-excellence

Association of Public and Land-grant Universities. (2016). *The land-grant tradition*. Washington, DC: Author. Retrieved from http://www.aplu.org/library/the-land-grant-tradition/file

Bauman, G. L., Bustillos, L. T., & Bensimon, E. M. (2005). *Achieving equitable educational outcomes with all students: The institution's roles and responsibilities*. Washington, DC:

Bensimon, E. M. (2005). *Equality as a fact, equality as a result: A matter of institutional accountability*. Washington, DC: American Council on Education.

Berliner, D. C. (2009). *Poverty and potential: Out-of-school factors and school success*. Retrieved from http://epicpolicy.org/publication/poverty-and-potential.

Bernstein, B. (1974). *Class codes and control. Theoretical studies towards a sociology of languag*e (2nd ed.). New York, NY: Schocken Books.

Bonous-Hammarth, M. (2000). Pathways to success: Affirming opportunities for science, mathematics, and engineering majors. *The Journal of Negro Education,* 69(1/2), 92-111.

Bourdieu, P., & Passeron, J. C. (1990). *Reproduction in education, society, and culture.* London, England: Sage.

Bourdieu, P., & Wacqquant, L. J. D. (1992). *An invitation to reflexive sociology.* Chicago, IL: University of Chicago Press.

Bowen, W. G., Kurzweil, M. A., Tobin, E. M., & Pichler, S. C. (2005). *Equity and excellence in higher education*. Charlottesville, VA: University of Virginia Press

Bowman, N. A. (2011). Promoting participation in a diverse democracy: A meta-analysis of college diversity experiences and civic engagement. *Review of Educational Research, 81*(1), 29-68.

Bowman, N. A. (2012). Promoting sustained engagement with diversity: The reciprocal relationships between informal and formal college diversity experiences. *Review of Higher Education* 36, 1-24.

Bowman, N. A. (2013). How much diversity is enough? The curvilinear relationship between college diversity interactions and first-year student outcomes. *Research in Higher Education* 54, 874-894.

Branzei, O., Ursacki-Bryant, T.J., Vertinsky, I. & Zhang, W. (2004). The Formation of Green Strategies in Chinese Firms: Matching Corporate Environmental Responses and Individual Principles. *Strategic Management Journal*, 25, 1075-1095.

Burlew, A. K., & Johnson, J. L. (1992). Role conflict and career advancement among African-American women in nontraditional professions. *The Career Development Quarterly, 40*(4), 302-312.

Cannon, J. G., Broyles, T. W., Seibel, G. A., & Anderson, R. (2009). Summer enrichment programs: Providing agricultural literacy and career exploration to gifted and talented students. *Journal of Agricultural Education, 50*(2), 27-38.

Capitman, J. (2002). Defining diversity: A primer and a review. *Generations, 26*(3), 8-14.

Charmaz, K. (2014). *Constructing grounded theory*. Los Angeles, VA: Sage Publications.

Cohen, G. L., Garcia, J., Purdie-Vaughns, V., Apfel, N., & Brzustoski, P. (2009). Recursive processes in self-affirmation: Intervening to close the minority achievement gap. *Science, 324*, 400-403

Colby, S.L., & Ortman, J.M. (2015). *Projections of the size and composition of the U.S. population: 2014 to 2060*. Retrieved from: https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf

Cole, D., & Espinoza, A. (2008). Examining the academic success of Latino students in science, technology, engineering, and mathematics (STEM) majors. *Journal of College Student Development,*49(4), 285-300. doi: 10.1353/csd.0.0018

Colvin, J. W., & Ashman, M. (2010). Roles, risks, and benefits of peer mentoring relationships in higher education. *Mentoring & Tutoring: Partnership in Learning, 18*(2), 121-134.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. United Kingdom: Sage Publications.

Crowther, F., Ferguson, M., & Hann, L. (2009). *Developing teacher leaders*. Thousand Oaks, California: SAGE.

Delender, N. (2013). Leadership excellence in higher education: Present and future. *Journal of Contemporary Issues in Business and Government, 19*(1), 19-33.

Denson, N. (2009). Do curricular and co-curricular diversity activities influence racial bias? A meta-analysis. *Review of Educational Research, 79*(2), 805-838.

Dewan, S., & Dewan, D. (2010). Distance education teacher as a leader: Learning from the path goal leadership theory. *MERLOT Journal of Online Learning and Teaching, 6*(3), 673-685.

Duemer, L. S. (2007). The agricultural education origins of the Morrill Land Grant Act of 1862. *American Educational History Journal*, 34(1), 135-146.

Ellis, K. C. (2013). *Ready for college: Assessing the influence of student engagement on student academic motivation in a first-year experience program* (Doctoral dissertation). Retrieved from https://vtechworks.lib.vt.edu/handle/10919/22046

Engberg, M. E. (2004). Educating the workforce for the 21st century: the impact of diversity of undergraduate students' pluralistic orientation. *Dissertation Abstracts International, 65*(06), 283-317.

Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. Milton Park, Abingdon: Taylor & Francis.

Flores, L. Y., & O'Brien, K. M. (2002). The career development of Mexican American adolescent women: A test of social cognitive career theory. *Journal of Counseling Psychology, 49*(1), 14-27.

Food and Agricultural Education Information System. (2013). *Degrees awarded land grant colleges of agriculture and natural resources.* Retrieved from http://www.faeis.ahnrit.vt.edu/reports/FAEIS20Degrees20Land20Grant20Colleges20of2 0Agriculture20&20Natural20Resources20vApr1-2013.xlsx.

Gibbs, R. (2005). Education as a rural development strategy. *Amber Waves, 3*(5), 20-25.

Gloria, A. M., Castellanos, K., & Orozco, V. (2005). Perceived educational barriers, cultural fit, coping responses, and psychological well-being of Latina undergraduates. *Hispanic Journal of Behavioral Sciences, 27*(2), 161-183.

Goecker, A. D., Smith, P. G., Smith, E., & Goetz, R. (2010). *Employment opportunities for college graduates in food, renewable energy, and the environment*. Retrieved from http://www.csrees.usda.gov/nea/education_part_employment.html

Gonzalez, H. B., & Kuenzi, J. J. (2012). Science, technology, engineering, and mathematics (STEM) education: A primer. CRS Report for Congress: Congressional Research Service.

Griffith, A. L. (2010). Persistence of women and minorities in STEM field majors: Is it the

    school that matters? *Economics of Education Review*, (29), 911-922.

Grint, K. (1997). *Leadership: Classical, contemporary, and critical approaches*. Oxford, United

    Kingdom: Oxford University Press.

Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation.* Newbury Park, CA: Sage

    Publications, Inc.

Gurin, P., Dey, E., Gurin, G., & Hurtado, S. (2004). *Defending diversity; Affirmative action at*

    the University of Michigan. Ann Arbor: University of Michigan Press.

Hanion, H., Thatcher, R., Cline, M. (1999). Gender differences in the development of EEG

    coherence in normal children. *Developmental Neuropsychology, 16*(3).

Haring-Smith, T. (2012). Broadening our definition of diversity. *Liberal Education* (2), 6-13.

Harper, S. R., Patton, L. D., & Wooden, O. S. (2009). Access and equity for African American

    students in higher education: A critical race historical analysis of policy efforts. *The*

    Journal of Higher Education, 80(4).

Harvey, W. B. (2003). *Minorities in higher education, 2002-2003: Twentieth annual status*

    report. Washington, DC: American Council of Education.

Hoare, H. C. (1994). *Psychological identity development in United States society: Its role in*

    fostering exclusion of cultural others. Washington, DC: NMCI Publications.

Hopewell, L., McNeely, C. I., Kuiler, E. W., & Hahm, J. (2009). University leaders and the

    public agenda: Talking about women and diversity in STEM fields. *Review of Policy*

    Research, 26(5), 589-607.

House, R. J. (1971). A path-goal theory of leader effectiveness. *Administrative Science Quarterly*(16), 321-339.

House, R. J. (1996). Path-goal theory of leadership: Lessons, legacy, and a reformulated theory. *The Leadership Quarterly, 7*(3), 323-352.

Hurtado, S. (2007). Linking diversity with the educational and civic missions of higher education. *The Review of Higher Education, 30*(2), 185-196.

Hurtado, S., Milem, J. F., Clayton-Pedersen, A. R., & Allen, W. R. (1998). Enhancing campus climates for racial/ethnic diversity: Educational policy and practice. *Review of Higher Education, 21*(3), 279-302.

Hurtado, S., & Ruiz, A. (2012). The climate for underrepresented groups and diversity on campus. Los Angeles, CA: Higher Education Research Institute.

Jayakumar, U. M. (2008). Can higher education meet the needs of an increasingly diverse and global society? Campus diversity and cross-cultural workforce competencies. *Harvard Educational Review, 78*(4), 615-651.

Korpela, K., Suryanarayana, S. N., & Anderson, C. S. (2008). *University and community partnerships: Growing the number of underrepresented students in the STEM pipeline.* WEPAN Conference, St. Louis, MO, June 8-10, 2008

Lawrence, S., Rayfield, J., Moore, L. L., & Outley, C. (2013). An analysis of FFA chapter demographics as compared to schools and communities. *Journal of Agricultural Education, 54*(1), 207-219.

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of

    career and academic interest, choice, and performance. *Journal of Vocational Behavior,*

    45, 79-122.

Levy, P. (2009). *Industrial/organizational psychology*. New York City, New York: Macmillan.

Long, B. T., & Riley, E. (2007). Financial aid: A broken bridge to college access. *Harvard*

    Educational Review, 77(1), 39-63.

Mallory, M. E., & Sommer, R. (1986). Student images of agriculture: Survey highlights and

    recommendations. *Journal of the American Association of Teacher Educators in*

    Agriculture, 27(4), 15.

McDearmon, J. T. (2012). Hail to thee, our alma mater: Alumni role identity and the relationship

    to institutional support behaviors. *Res High Educ* (54), 283-302. doi:10.1007/s11162-

    012-9271-6

McWhirther, E. H. (1997). Perceived barriers to education and career: Ethnic and gender

    differences. *Journal of Vocational Behavior, 50*, 124-140.

Milem, J. F., Chang, M. J., & Antonio, A. L. (2005). *Making diversity work on campus: A*

    research-based perspective. Washington, DC: Association of American Colleges and

    Universities.

Minor, F. D. (2007). *Learning communities and student affairs: Partnering for powerful*

    learning. Olympia, WA: NASPA

Moss, J. Q. (2011). An undergraduate summer research and mentorship experience for

    underrepresented students in agricultural sciences. *NACTA Journal, 55*(1), 32-37.

Museus, S. D., Palmer, R. T., Davis, R. J., & Maramba, D. C. (2011). *Racial and ethnic minority students' success in STEM education.* Hoboken, NJ: Jossey-Bass.

National Academies. (2011). Expanding underrepresented minority participation. Washington, D.C: The National Academies Press.

National Center for Cultural Competence (2012). Curricula Enhancement Module Series. from http://www.nccccurricula.info/culturalcompetence.html

National FFA Organization. (2016). *Who we are*. Retrieved from https://www.ffa.org/about/who-we-are

Northouse, P. G. (2004). *Leadership: Theory and practice*. London, England: Sage Publications Ltd.

Ojeda, L., & Flores, L. Y. (2008). The influence of gender, generation level, parents' education level, and percieved barriers on the educational aspirations of Mexican American high school students. *The Career Development Quarterly, 57*(1), 84-95.

Orfield, G. (2009). *Reviving the dream of an integrated society; A 21st century challenge.* Los Angeles, CA: Civil Rights Project/Proyect Derechos Civiles.

Outley, C. W. (2008). Perceptions of agriculture and natural resource careers among minority students in a national organization. from http://www.nrs.fs.fed.us/pubs/40631

Overbay, A., & Broyles, T. (2008). Career values and perceptions of agriculture: What these gifted high school students thought. *NACTA Journal, 55*(1), 32-37.

Palmer, R. T., Maramba, D. C., & Dancy II, T. E. (2011). A qualitative investigation of factors promoting the retention and persistence of students of color in STEM. *The Journal of Negro Education, 80*(4), 491-504.

Park, J. J. (2012). When race and religion collide: The effect of religion on interracial friendship in college. *Journal of Diversity in Higher Education, 5*(1), 8-21.

Pascarella, E. T., Salisbury, M. H., Martin, G. L., & Blaich, C. (2012). Some complexities in the effects of diversity experiences on orientation toward social/political activism and political views in the first year of college. *Journal on Higher Education* 83, 467-496.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research*. San Francisco, CA: Jossey-Bass.

Perna, L., & Titus, M. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *The Journal of Higher Education, 93*(4), 177-194.

Rahim, M. (2015). *Managing conflict in organizations*. New Brunswick, New Jersey: Transaction Publishers.

Ramayah, T., Yeap, J., & Ignatius, J. (2013). An empirical inquiry on knowledge sharing among academians in higher learning institutions. *Minerva,* (51), 131-154.

Roscigno, V. J., Tomaskovic-Devey, D., & Crowley, M. L. (2006). Education and the inequalities of place. *Social Forces, 84*(4).

Sackett, P. R., Kuncel, N. R., Arneson, J. J., Cooper, S. R., & Waters, S. D. (2009). Does socioeconomic status explain the relationship between admissions tests and post-secondary academic performance? *Psychological Bulletin, 135*(1), 1-22.

Saenz, V. (2010). Breaking the segregation cycle: Examining students' precollege racial environments and college diversity experiences. *Review of Higher Education, 34*(1), 1-37.

Salisbury, M. H., & Goodman, K. (2009). Educational practices that foster intercultural

    competence. *Diversity & Democracy, 12*(2), 12-13.

Samure, K., & Given, L. M. (2008). *The Sage Encyclopedia of Qualitative Methods*.

    Washington, DC: Sage Publication, Inc.

Sauro, K. (2015). *5 types of qualitative methods* [Web log post]. Retrieved from

    https://www.measuringu.com/blog/qual-methods.php

Scott, F. L., & Lavergne, D. (2004). Perceptions of agriculture students regarding the image of

    agriculture and barriers to enrolling in an agriculture education class. *Journal of Southern

    Agricultural Education, 54*(1), 48-59.

Seidman, A. (2005). Minority student retention: Resources for practitioners. *New Directions for

    Institutional Research* 125, 1-24.

Sidanus, J. (2008). The diversity challenge: Social identity and intergroup relations on the

    college campus.

Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of

    research. *Review of Educational Research, 75*(3), 417-453.

Sorofman, B. (1986). Research in cultural diversity: Defining diversity. *Western Journal of

    Nursing Research, 8*(1), 121-123.

St. John, E. P., Carter, D. F., Chung, C. G., & Musoba, G. D. (2006). *Diversity and persistence

    in Indiana higher education: The impact of preparation, major choices, and student aid*.

    Retrieved from:

    http://www.indiana.edu/~ipas1/DiversityandPersistenceinInHiEd04_01.pdf.

STEM Food & Ag Council. (2014). The first annual report of the STEM Food & Ag Council.

 Retrieved from https://stemconnector.org/stem-food-ag-council-0

Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. (2012).

 Unseen disadvantage: How American universities' focus on independence undermines the

 academic performance of first-generation college students. *Journal of Personality and*

 Social Psychology, 102(6), 1178-1197.

Stogdill, R. M. (1974). *Handbook of leadership: A survey of theory and research*: New York:

 Free Press.

Strauss, A., & Corbin, J. (2008). *Basics of qualitative research: Techniques and procedures for*

 developing grounded theory (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Strayhorn, T. (2011). Bridging the pipeline: Increasing underrepresented students' preparation for

 college through a summer bridge program. *American Behavioral Scientist, 55*(2), 142-

 159.

Strayhorn, T. (2010). The role of schools, families, and psychological variables on math

 achievement of black high school students. *The High School Journal, 93*(4), 177-194.

Strayhorn, T. (2008). The role of supportive relationships in facilitating African American males'

 success in college. *NASPA Journal, 45*, 26-48.

Swail, W. S., Redd, K. E., & Perna, L. W. (2003). *ASHE-ERIC Higher Education Report*

 Retrieved from http://www.educationalpolicy.org/pdf/Swail_Retention_Book.pdf.

Torres, R. M., & Wildman, M. (2001). Factors identified when selecting a major in agriculture.

 Journal of Agricultural Education, 42(2), 46-55.

Torress, V., Howard-Hamilton, M. F., & Cooper, D. L. (2003). *ASHE-ERIC Higher Education Report*. Retrieved from

    http://spot.pcc.edu/~rsuarez/rbs/school/EPFA20520/Identity20development.pdf

Trochim, W. M. (2006). *Qualitative approaches.* Retrieved from

    http://www.socialresearchmethods.net/kb/qualapp.php

Tsui, L. (2007). Effective strategies to increase diversity in STEM fields: A review of the research literature. *The Journal of Negro Education, 76*(4), 555-581.

United States Census Bureau. (2008). *An older and more diverse nation by mid-century*. Retrieved from

    http://www.census.gov/PressRelease/www/releases/archives/population/012496.html

United States Census Bureau. (2016). *Geographic terms and concepts - Census divisions and census regions*. Retrieved from

    https://www.census.gov/geo/reference/gtc/gtc_census_divreg.html

United States Department of Agriculture. (2015). *About NASS*. Retrieved from

    http://www.nass.usda.gov/About_NASS/index.asp

United States Department of Agriculture. (2016). *Food and Agricultural Education Information System*. Retrieved from http://www.faeis.ahnrit.vt.edu/

United States Department of Education. (2012). *The condition of education.* Retrieved from

    http://nces.ed.gov/pubs2012/2012045.pdf

United States Department of Education. (2015). *Total fall enrollment in degree-granting postsecondary institutions, by level of enrollment, sex, attendance status, and*

race/ethnicity of student: Selected years, 1976 through 2014**. Retrieved from

http://nces.ed.gov/programs/digest/d15/tables/dt15_306.10.asp?current=yes

University of Maryland. (2013). When college diversity delivers benefits: UMD study. *NewsRx Science*, 83.

University of Missouri - St. Louis. (2016). *Qualitative research designs.* Retrieved from

http://www.umsl.edu/~lindquists/qualdsgn.html

Valencia, R. (2015). *Students of color and the achievement gap: Systematic challenges, systematic transformations*. Howick Place, London: Routledge.

Warren, C. K., & Alston, A. J. (2007). An analysis of diversity inclusion in North Carolina secondary agricultural education programs. *Journal of Agricultural Education, 48*(2), 66-78.

Wehbe-Alamah, H., & Fry, D. (2014). Creating a culturally sensitive and welcoming academic environment for health care students: A model exemplifying Muslim physical therapist students. *Journal of Physical Therapy Education, 28*(1), 5-15.

Wells, R. (2008). Social and cultural capital, race, and ethnicity, and college student retention. *Journal of College Student Retention, 10*(2), 103-128.

Worthington, R. L., Stanley, C. A., & Lewis Sr., W. T. (2014). National Association of Diversity Officers in Higher Education standards of professional practice for chief diversity officers. *Journal of Diversity in Higher Education, 7*(4), 227-234.

Yukl, G. A. (2002). *Leadership in organizations: Fifth edition*. Upper Saddle River, NJ: Prentice-Hall.

Appendix A - Initial Call Script

In some cases, individuals were not listed. Some colleges have entire departments that deal with admissions. If this was the case, I called the department to ask for assistance. Ideally, I was be looking for individuals that have the specific responsibility of recruiting and retaining diverse students. If there was not an individual within the department with that responsibility, I asked for any individuals responsible for the recruitment and retention of all students within the college. If the duties of recruitment and retention were separate responsibilities, I asked for the contact information of those individuals and ask the appropriate questions related to their respective positions.

Hello,

My name is M. Antonio Silas. I am a Ph.D. candidate at Virginia Tech and am researching the perceptions of administrators regarding the barriers that underrepresented students face in colleges of agriculture. I visited your college's website and came across (insert name here). Does this individual have responsibilities related to recruiting and retaining underrepresented students within your college of agriculture?

(If "yes":)
I would like to interview (insert name here) for my dissertation research. I read online that their email is (_____). Is this correct? Thank you very much for your assistance.

(If "no":)
Can you direct me towards an individual within your college of agriculture that deals directly with the recruitment and retention of all students?

(If there is no such person within the college:)
Could you direct me towards the university professional that is tasked with this responsibility?

(If they cannot help me at all:)
Thank you very much for your time!

If I was unable to locate the individual I'm looking for on the college's website, I called the institution and use the following script:

Hello, my name is M. Antonio Silas. I am a Ph.D. candidate at Virginia Tech. I am conducting my dissertation research on the perceptions of college administrators regarding the barriers that underrepresented students face within colleges of agriculture. I attempted to look on your website for the correct individual to speak with regarding my study, but I was unsuccessful. I am looking for anyone specifically in charge of the recruitment and retention of underrepresented students. If such an individual does not exist, anyone in charge of the recruitment and retention of all undergraduate students within your college would be acceptable. Would you be able to assist me?

(If so) What's this person's name and job title? How can I go about reaching them? Is there information about this individual on your college's website?

(If there is not a person within the college that fits the description) Would you mind telling me who handles recruitment and retention for your college and how I can in contact with them?

(If there is no such person within the college:)
Could you direct me towards the university professional that is tasked with this responsibility?

 (If they cannot assist you at all) Thank you very much!

From there, I will determine if this individual meets the criteria for the study. Following this, I will send the individual the initial e-mail, inviting them to participate in the study.

Subject: Study of Barriers and Strategies for Students of Color in Colleges of Agriculture

Dear ____,

I am writing to ask for your help with important research regarding the barriers that students of color face pertaining to their recruitment and retention within colleges of agriculture. I would like to schedule an interview with you to learn about the strategies your college uses for the recruitment and retention of underrepresented students, your perception of diversity's role in agriculture, and general questions about the challenges that students of color face, both those that are seeking to attend and currently enrolled within your college. This discussion will take the form of a phone interview and should not last longer than 60 minutes. For your reference, I have attached a copy of the Institutional Research Board consent form. If you have any questions, please do not hesitate to ask. To assist in scheduling a phone interview, please participate in the Doodle Poll at <Poll URL>. Alternatively, you may reply to this email with suggestions for convenient times. I look forward to hearing from you.

Sincerely,

M. Antonio Silas, Ph.D. Candidate
Agricultural, Leadership, and Community Education
Virginia Tech

Appendix C - Follow-Up Email
Subject: Follow-Up - Study of Barriers and Strategies for Students of Color in Colleges of Agriculture

Dear ____,

I sent you an email a week ago soliciting your participating in my dissertation study, which examines the perceptions of administrators within colleges of agriculture as it pertains to the barriers that students of color face regarding recruitment and retention. I wanted to follow-up to see if you had any questions or require any clarification about the study. This study is of the utmost importance and your participation would be sincerely appreciated. For your reference, I have attached a copy of the Institutional Research Board consent form. If you would like to participate, please contact me at ----. If you have any questions, please do not hesitate to ask. To assist in scheduling a phone interview, please respond to this email with suggestions for convenient times. I look forward to hearing from you.

Sincerely,

M. Antonio Silas, Ph.D. Candidate
Agricultural, Leadership, and Community Education
Virginia Tech

Appendix D - Follow-Up Call Script

This call would take place only if the researcher did not not hear from the participant within a week of the follow-up e-mail being sent out.

"Hello, this is Antonio Silas from Virginia Tech. I e-mailed you about a dissertation study that I'm doing about administrators' perceptions of the barriers that underrepresented students face in colleges of agriculture. I am following-up to see if you are able to participate, or if you have any questions that need answered."

The researcher would answer any questions or proceed with scheduling an interview.

Informed Consent

The researcher will obtain consent by sending participants a consent form ahead of time so that they can review it. When the interview takes place, verbal consent to participate in the study will be obtained. Virginia Tech IRB allows for a "consent waiver" when filling out the application.

Appendix E - Interview Confirmation E-Mail

Subject: Confirmation for Interview Time - Study of Barriers and Strategies for Students of Color in Colleges of Agriculture

Dear ____,

I am writing to confirm the interview time that you provided to me via e-mail/the Doodle.com link. We are scheduled to interview on _____, 2016 at -:-- AM/PM (insert time zone here). I will be contacting you at (555) 555-5555; if this is not a suitable number to call, please provide me with an alternate one. I have included the Institutional Review Board consent form for your convenience. If you have any questions, please do not hesitate to contact me. I look forward to speaking with you.

Sincerely,

M. Antonio Silas, Ph.D. Candidate
Agricultural, Leadership, and Community Education
Virginia Tech

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants
in Research Projects Involving Human Subjects

Title of Project: Administrators' Perceptions of the Barriers that Students of Color Face in Colleges of Agriculture and Strategies for Success

Investigator(s):   M. Antonio Silas,
                                 Doctoral Candidate

                                 Hannah Scherer
                                 Assistant Professor

                                 Eric Kaufman
                                 Associate Professor

I.   Purpose of this Research Project
     a. This study is intended to obtain a better understanding regarding the perceptions that administrators within colleges of agriculture at 1862 land-grant institutions have regarding the barriers that students of color face when applying to and after being accepted to agriculturally-based education programs.

II. Procedures
     a. You are being asked to participate in an interview. This interview will not last longer than 60 minutes. If you agree to be interviewed, the conversation will be audio recorded. At no time will your interview be released to anyone other than the researchers involved with the project without your written consent.

III. Risks
     a. This study has been reviewed and approved by the Virginia Tech Institutional Review Board. Individual answers and identities of the participants will be protected at all times. This research involves no more than minimal risk.

IV. Benefits
     a. There are no direct benefits to participants. The results of the interviews will help to better understand the perceptions of administrators within solleges

of regarding the barriers that underrepresented students encounter when attempting to enter or remain enrolled in higher education agricultural programs. The data collected from participants during this research may be developed into one or more papers for publication in academic journals or presentations. You may contact the researchers at a later time for a summary of the research results if you wish.

V. Extent of Anonymity and Confidentiality
    a. Your identity, and that of any individuals who you mention, will be kept confidential at all times and will be known only to your interviewer and research team. The interviews will be audio recorded and later professionally transcribed. When transcribing the interview recordings, pseudonyms (i.e., false names) will be used for your name and for the names of any other people who you mention. These pseudonyms will also be used in preparing all written reports of the research. Any details in the interview recordings that could identify you, or anyone who you mention, will also be altered during the transcription process. After the transcribing is complete, the interview recordings will be stored on a password-protected server. The audio recordings will be destroyed after the analysis and reporting is complete, but the transcriptions will be stored indefinitely. The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research. At no time will the researchers release identifiable results of the study to anyone other than individuals working on the project without your written consent.

VI. Compensation
    a. There will be no compensation offered to study participants.

VII. Freedom to Withdraw
    a. Your participation in this research is entirely voluntary and your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. Similarly, you are free to withdraw from this research at any time. If you choose to withdraw from the research, any information about you and any data not already analyzed will be destroyed. You are free to choose not to answer any question at any time.

VIII. Questions or Concerns
    a. Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the VT IRB Chair, Dr. David M. Moore at moored@vt.edu or (540) 231-4991.

Appendix G - Good Interview Practices

Guidelines for Conducting the Interview

1.) Make sure you are well-acquainted with all aspects of administrating the interview.
2.) Do not omit an interview question because of a concern that it will cause the participant to be uncomfortable.
3.) Do not allow the interview to become a casual conversation.
4.) Remember that you are in control of the interview.
   a. Monitor the pace of the interview. If it is going too fast, slow it down.
   b. Explore thoroughly what is covered during the allotted time for the interview.
5.) Give the participant feedback regarding the type of information desired.
   a. Make sure the participant focuses on the phenomenon.
   b. If the interview goes off-topic, allow the participant to finish their point, then guide the conversation back to the phenomenon.
   c. If you are uncertain about the participant's usage of a word, ask for clarification.
6.) If a participant becomes noticeably uncomfortable, tell them that you will stop the interview and turn off the recorder.
   a. After the participant has calmed down, you can ask if they would like to continue with the interview.

Conducting the Interview

1.) Prior to asking questions, go over informed consent with the participant and ask if they have any questions.
2.) After reading informed consent and answering any questions, let the participant know that you will be moving into the actual interview questions.
3.) Ask every question listed.

After the Interview

1.) At the conclusion of the interview, thank the participant for taking part in your study.
2.) Develop a post-interview memo as soon as possible.
   a. Write down your impressions of the participant, including non-verbal behavior, general openness, mood, tone of voice, etc.
   b. Include information about yourself, including your mood, reactions to the participant, the context of the interview, any mistakes that were made.
3.) Review the interview recording to assess the usefulness of the data collected.
4.) Evaluate how you did as an interviewer.
   a. Identify areas where you did well and areas that you need to improve.

Adapted from Hein, S. (2014). Guidelines for conducting interviews [class handout]. School of Education, Virginia Tech, Blacksburg, VA

Appendix H - Interview Guidelines and Questions

Before the Interview

1.) Call the participant roughly five minutes before the designated time for the interview.

2.) Engage in some general conversation before beginning the interview. Do not immediately launch into a discussion regarding the study.
3.) Go over the informed consent form with the participant. After finishing, ask, **"Do you have any questions regarding informed consent?"**
4.) Ask the participant if they consent to participating in the interview.
5.) Discuss how the interview will be conducted.
   a. Discuss the nature of the interview process. – "Today, we will be discussing the perceptions of college administrators regarding the barriers that students of color face regarding recruitment and retention at colleges of agriculture for 1862 land grant institutions. For purposes of clarification, the term "students of color" encompasses any ethnically underrepresented student within the field of agriculture. Examples include students of African-American, Hispanic or Latino, Asian, or Native American backgrounds. You will be asked a series of questions regarding your perceptions of the issue, what barriers impede the success of these students, and what strategies can be used to assist students in circumventing these barriers. Do you have any questions about the phenomena being examined?"
   b. Make sure that the participant knows to describe their experiences in as much detail as possible. – "Please note that during this interview, I would like for you to be as descriptive as possible. If you've had an experience regarding or personal feelings toward the questions you're being asked, provide as much information as you can during your answers. This interview should last approximately 45 minutes."
6.) Ask the participant if he or she has any questions. – "Do you have any questions regarding any of the aforementioned topics?"
7.) Ask the interviewer if it is alright to begin the interview. – **"Are you alright with us beginning the interview?"**
8.) Begin the interview.

Interview Questions

1.) Please define "diversity".
2.) What shaped your thinking regarding diversity?
   a. Is there any particular event or experience that comes to mind? Please be as descriptive as possible.
3.) Describe your role as it pertains to promoting and increasing diversity within the agricultural sciences. Please state your job title.
   a. (If this is not a formal responsibility of their job) How did you find yourself responsible for cultivating diversity? Was it intentional?
   b. Do you believe that diversity is an integral aspect of agriculture? Why or why not?
   c. What was your motivation for becoming involved in improving diversity within the agricultural sciences?
   d. How urgent do you believe it is that colleges of agriculture increase the amount of underrepresented students?

4.) From an administrative perspective, what do you perceive to be the most important factors associated with effectively recruiting and retaining underrepresented students to academic programs within your college?
   a. Can you offer some specific examples of how these factors come into play?
   b. Are there any tools, support systems, or individuals within your college that help you effectively do your job?
5.) What do you believe to be the primary challenges students of color face within your college related to recruitment?
   a. What are some specific examples of these challenges?
   b. Is there a story you can share?
   c. How do you help students overcome these challenges?
6.) What do you believe to be the primary challenges students of color face within your college related to retention?
   a. What are some specific examples of these challenges?
   b. Is there a story you can share?
   c. How do you help students overcome these challenges?
7.) What methods does your college currently use to attract and retain underrepresented students?
   a. Which of these methods have you found to be particularly effective or ineffective?
   b. Are there any new ideas that you would like to put in place?
8.) How do you measure success within your position as it relates to the recruitment and retention of underrepresented students?
   a. What has been your most notable success story during your time with your college?
9.) We have been focused primarily on your role within the college thus far. I would like to transition to asking about the university as a whole. What can (or does) your institution can do to assist your college with diversity recruitment and retention efforts?
   a. Are there any university-wide programs or models that your college has adapted for its use? If not, are there any programs or models that you feel would be useful?
   b. Have you heard of success stories at other institutions? If so, please share one of those.
10.)   That concludes the main questions I had. Is there anything else you feel I should know?

Appendix I – Demographic Information of Study Participants

Participant	Type of Role within College	Gender	Region	Duration
A	Diversity Officer	Male	Midwest	00:25:20
B	Recruitment and Retention Officer	Female	West	01:03:01
C	Dean	Male	Northeast	01:04:23
D	Diversity Officer	Male	Midwest	00:56:46
E	Recruitment and Retention Officer	Male	Midwest	00:22:43
F	Recruitment and Retention Officer	Female	South	00:37:45
G	Retention Officer	Female	South	00:38:57
H	Diversity Officer	Female	West	01:00:52
I	Diversity Officer	Female	Northeast	00:47:36
J	Dean	Female	West	00:54:43
K	Recruitment Officer	Female	South	00:14:47
L	Dean	Female	South	00:32:36
M	Diversity Officer	Male	Midwest	00:52:32
N	Diversity Officer	Male	South	01:01:13
O	Dean	Female	Midwest	00:47:25
P	Dean	Female	South	00:50:49
Q	Dean	Male	Midwest	00:41:07
R	Dean	Female	West	01:06:34

Appendix J - a priori Propositions

Proposition	Supporting Literature	Interview Question

Diversity is important to the progression of agriculture.	Due to shifting demographics, more people from a variety of different backgrounds will be entering higher education, either as a student or as an employee. With changing demographics within the landscape of higher education, more interactions will occur between these populations and individuals that have not had interactions with underrepresented backgrounds. This has the potential to cause issues in both the classroom and the campus community as a whole (Torres, Howard-Hamilton, & Cooper, 2003). Based on the aforementioned literature, it is important for teachers to be prepared to deal with the cultural differences that diversity brings. The researcher believes and acknowledges that diversity is not only limited to race or ethnicity; it can include a different perceptions and perspectives. It is important for educators to know how to handle diversity within the context of higher education.	"Do you believe that diversity is an integral aspect of agriculture? Why or why not?
		   a. What was your motivation for becoming involved in improving diversity within the agricultural sciences? Why is it important to you?
		   b. How urgent do you believe it is that colleges of agriculture increase the amount of underrepresented students?"
		
		"Is there anything that your institution can do to assist your college with your diversity recruitment and retention efforts?"

Students of color face more barriers than their white counterparts.	According to Strayhorn (2010), when compared to their white counterparts, underrepresented students tend to have more barriers, perceived or otherwise, that affect their decisions and ability to pursue agricultural careers. Barriers that can affect the likelihood of a student selecting a field include a lack of mentors of the same or similar ethnicity (Strayhorn, 2010), finances, inadequate preparation, and lack of encouragement and support from culture or family (Perna & Titus, 2005). These barriers can potentially contribute to a declining minority enrollment on the college level (Moss, 2011).	"What do you perceive to be the primary challenges that underrepresented students face within your college before being accepted to your university? Are there any additional challenges after these students are accepted?"
Reasoned action theory (Fishbein & Azjen) can be used as a tool to better understand the perceptions and motivations of administrators. These play a large role in how someone behaves in regard to an issue.	According to the reasoned action approach (Fishbein & Ajzen, 2010), the beliefs and perceptions that an individual has regarding a particular behavior will affect the likelihood of it actually being performed. The researcher seeks to understand how perception affects how administrators assist students of color with removing barriers.

Perception also influences students. If students have a perception of the field that is not accurate, this could push | "What do you perceive to be the primary challenges that underrepresented students face within your college before being accepted to your university? Are there any additional challenges after these students are accepted?"

"From an administrative perspective, what do you perceive to be the primary challenges that you face as it pertains to recruiting and retaining underrepresented students to academic programs within your college of agriculture?" |

	students away from the field rather than attract them to it. If students have higher levels of knowledge and positive experiences regarding agriculture, they may be more interested in pursuing a career in the field (Cannon, Broyles, Seibel, & Anderson, 2009).	
Path-goal theory of leadership can be used to assess the effectiveness of administrators strategies for assisting underrepresented students; administrators' involvement is important to the success of all students.	House (1971) developed the path-goal theory of leader effectiveness, which explores the effects of leader behavior on subordinate satisfaction, motivation, and performance. It also focused on specifying a leader's style or behavior that best fits employees and the environment in which they work. House's (1996) reformulated theory specifies leader behaviors that enhance subordinate empowerment and satisfaction. The theory states that the way a leader behaves has a direct effect on the performance, satisfactions, and motivation of the people they are leading. Within this theory, the leader's role is to successfully guide their followers to the completion of their objectives. The leader should ideally focus on guiding their followers using the best paths to reach the goals of the followers, the leaders, and the organization. The use of path-goal theory	"What methods do your college use to attract and retain underrepresented students to the agricultural sciences? Out of those, which have you found to be the most and least effective respectively?" "What benchmark would you use to measure your successfulness within your position as it pertains to the recruitment and retention of underrepresented students?"

| | will assist the researcher in conceptualizing how administrators "clear the path" to the goal of successful recruitment and retention of underrepresented students.

Effective leadership from college administrators can also assist in helping to alleviate barriers for students (Delender, 2013). It is not enough for administrators to simply provide funding for educational programming for underrepresented students; they should also create infrastructure to track the progress of these students. The American Council on Education (2005) recommends that campus leaders "create ways to track and examine equitable outcomes for specific groups of students and make equality in results a core indicator of institutional accountability" (p. 18). | |