

**The Pennsylvania State University**

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**FACTORS THAT INFLUENCE BLACK AND LATINO HIGH SCHOOL  
STUDENTS TO PURSUE CAREERS IN AGRICULTURE**

A Thesis in

Agricultural and Extension Education

by

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## **ABSTRACT**

The purpose of this research was to assess the factors that influence Black and Latino high school students enrolled in embedded agricultural education programs to pursue careers in agriculture. The study was unique as it sought out to discover factors for Blacks and Latinos as their immigrant status and historical ties to their homeland differ from other racial and ethnic groups. The researcher observed a series of relationships in an effort to shed light on paradigms that exist for these groups. Determining the factors that influence Black and Latino high school students to pursue careers in agriculture could assist embedded agricultural programs, colleges of agriculture and the agricultural industry with the recruitment and retention of minority populations.

Students enrolled in high school embedded agricultural programs served as the unit of analysis for this research. The target population was high school students in Miami-Dade County, Florida. A three-part questionnaire was derived and used to collect data pertaining to the factors that influence career choice, agricultural literacy, prospective barriers to pursuing careers in agriculture, characteristics of those interested in agriculture careers, involvement and general demographical questions.

Data was analyzed by content, and emergent themes and patterns were identified and organized into coherent categories. Chi-squares and correlations were then used to test the significance of dependent, independent and confounding variables.

Respondents were typically female, residing in urban areas, and ranging from 14 years old to 19 years of age and older. These students were representative of a number of races, ethnicities and nationalities, and were predominantly Black and Latino.

Students sampled and enrolled in the embedded agricultural education program at William H. Turner Technical Arts High School have a positive perception of agriculture, are surrounded by peers who have positive perceptions of agriculture and have parents that are supportive regardless of their career aspirations and choices. They believe agriculture is vital and important to our economy, and most of them plan to pursue careers in agriculture. However, majority of these students indicated they did not have a mentor in the agricultural industry, no interaction with recruiters and no support from guidance counselors with regards to their career and educational aspirations.

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# **Chapter I**

## **Introduction**

Diversity is important as the U.S. population increases and evolves with individuals from around the world. The world as we know it is growing at exponential rates, unleashing a series of complicated problems. Agriculture is affected by conditions revolving around international competition, and with more than 54,000 agriculture related jobs opening annually between 2010 and 2015, we don't have a group of individuals capable of navigating through and responding to the industry's challenges (AAAE, 2012). Globalization is putting increased pressure on business practices, has created a powerful impetus in the traditional workplace, and a diverse workforce is needed to gain and maintain a competitive edge. The marketplace exists in a worldwide economy that is competing with countries around the world (Green, Lopez, Wysocki, & Kepner, 2002). We no longer live in an insular world, and our competition is global.

A diverse workforce is essential when considering service-oriented businesses (Lauri, n.d.). Diversity is an advantage that the U.S. cannot afford to ignore due to its productivity, advantages and competitiveness (Green et al., 2002). Essentially, our business practices must keep up with the needs of our markets and the workers that contribute to its success (Lauri, n.d.). Diversity creates a workforce enriched in different cultures, a workforce that recognizes and respects talent, and encourages exchanges that will solve the world's problems (ARS, n.d.). A diverse workforce is a reflection of the marketplace in which we work (Green et al., 2002), as it has the ability to improve the quality of research, and produce a high quality workforce (ARS, n.d.). Consumers are more comfortable with doing business with people they look like and can relate to, and

often prefer to interact with individuals who reflect their communities and can better address their needs (Lauri, n.d.).

There is a great need to produce a highly educated and skilled workforce capable of solving problems of the 21<sup>st</sup> century (AAAE, 2012). Coupled with the agricultural industry's challenges are dwindling educational programs with low enrollment rates and decreasing funds. Not only are our educational systems being challenged, but there lacks a group of knowledgeable agricultural professionals who are able to combat and address the challenges of our changing society (AAAE, 2012). The industry must be able to understand and identify what is needed to prepare, retain and promote professionals who demonstrate the competence and cultural awareness to meet current and future needs of our diverse world (AAAE, 2012).

The participation of ethnic minorities in the field of agriculture is scarce and highly underrepresented in the United States (Foster & Henderson, 1992). Although efforts to promote diversity exist, the number of Blacks and Latinos within the agricultural industry remains low and cannot sustain the agricultural workforce. Blacks and Latinos make up a total of 10.2% of the United States Department of Agriculture's workforce (USDA, 2007); collectively, they make up 3.8% of all farm operators in the U.S. (USDA, 2007). Previous stigmas attached to the low pay of jobs and being considered the working poor, seem to control public opinion. Black and Latino youth disregard a large number of involvement and career opportunities because of its association to their poor perception of agriculture and related careers. Minority youth are discouraged from entering the agricultural field by parents, teachers, and mentors because

of past beliefs and a lack of support to enroll in an agriscience course (Jackson & Williams, 2003, p. 22).

Minority participation is lacking in the field of agriculture and its promotion needs to take place at the high school level (Feintuch, 2009). Educators need to become more diverse in their role and should promote and encourage Black and Latino students to pursue agricultural and related careers. As noted by Bowen et al. (1991), 13 out of 35 collegiate institutions reported doing nothing special to recruit or retain a diverse group of students. Banks (1994) noted that diversity would enhance a student's overall intellectual and peculiar developmental abilities. Given these noted qualities, it can be argued that diversity can have a positive impact on students' cognitive and personal growth, broaden their perspectives, and sharpen critical thinking skills. By diversifying the field of agriculture it can help shed some of the negative perceptions held by Black and Latino youths' poor in relation to agriculture, and provide efforts for the industry to become and remain a successful part of the education system.

### **Need for the study**

Research broadly identifies barriers that affect the recruitment and retention of minority students in the field of agriculture. Past studies have exhaustively examined attitudes and perceptions, and have unsuccessfully identified factors that influence minorities to pursue careers in agriculture and remain employed within the field.

Feintuch (2009) states that interest must begin prior to the collegiate experience in order to increase minority presence in the field of agriculture. According to Bowen et al. (1997), promotional activities at the collegiate level has proven itself to be ineffective, and efforts to increase minority enrollment rates should begin at the high school level.

This research sought to identify the body of knowledge regarding the promotion, recruitment and retention of minorities in the field of agriculture by discovering factors of influence in an environment conducive to their success. The study was developed to examine the opinions of high school students, and examine opinions of students enrolled in programs with high minority enrollment rates. It attempts to identify barriers that include, but are not limited to involvement, parental influence, peer pressure and historical ties, as a means to impact a student's decision on whether her or she will pursue a career in agriculture.

### **Statement of the Problem**

The demand for ethnic minorities in the field of agriculture exceeds its supply; opportunities for people of color in agricultural fields continue to expand but the number of those pursuing agriculture careers continues to decline (Larke & Jones, 2001, p. 39). A 10 – 15% shortage of professionals in the agricultural industry has been predicted for many of its sectors (Jimmerson et al., 1993, p. 12). Students aren't pursuing agricultural careers and this can be attributed to a poor perception of agriculture. More focused efforts should be in place to specifically recruit ethnic minority students who possess an interest in agricultural careers (Luft, 1996). The declining interest in agricultural careers may be attributed to the lack of realistic career descriptions and opportunities. Often times, recruitment efforts are narrowly focused, misconceptions exist and fewer Black and Latino students enter into agricultural careers.

Current demographics of high school agricultural programs, and youth agricultural programs such as the Future Farmers of America (FFA), do not align with ethnicities found in many public schools (Cano, 2008). Despite the United States being a

culturally diverse society, its diversity is not well represented in embedded agricultural programs, the FFA and agricultural careers. Black and Latino populations continue to grow and students will be needed to ensure agriculture's viability and global standing. In essence, students of color are needed to generate solutions to integrative global problems in agriculture (Morgan, 2000). Despite the dynamic increases in U.S. ethnic diversity, these numbers are not represented in the agricultural industry. It can be argued that there are barriers that prevent minority student participation in agricultural related fields, and often include negative perceptions of agriculture and the lack of mentors, role models and guidance counselors at the tertiary school level (Talbert & Larke, 1995).

Previous research done by Larke, A., Jr. & Talbert, B. A. (1995) and Larke, A., Jr. & Jones, W. A. (2001; 2003) has focused on post-secondary student populations at majority institutions as a means to discover what barriers exist for the participation of minorities in the agricultural field. These researchers have extensively looked at the attitudes and perceptions of the individual as barriers to recruitment and retention of Black and Latino students in the field of agriculture. While their work has built the foundation of research in this field, it has become dated and needs to better reflect current societal needs. To this end, this research will add to the current literature to provide a basis for forward thinking ideas and attitudes about the diversity in the agricultural sector. Based on these previous studies, as well as what is known regarding inclusion and minority participation, factors such as race, gender, parental influence, societal and peer pressure are key to student development as they matriculate through their educational experience. Race, gender, parental influence, societal and peer pressure, and involvement



in extracurricular activities at the high school level are additional factors that will shed light on the issue of minority participation in the agricultural field.

The key to increasing the minority student presence in agricultural related fields is to develop students' interest before they select a college major (Feintuch, 2009).

Educators in all areas need to be aware of factors that influence students' decision to pursue a career in agriculture. They should be cognizant of the students' represented in their classroom and promote cooperative, and culturally accepting atmospheres.

Agricultural programs and educators should plan and execute programs, and activities to achieve desired classroom demographics, which reflect the demographics of a very colorful America (Cano, 2008).

## **Purpose and Objectives of the Study**

The purpose of this study was to determine the factors that influence Black and Latino students enrolled in high school agricultural programs to pursue a career in agriculture. This study is unique as it seeks to identify factors for Black (African – American, Caribbean) and Latino (Cuban, Puerto Rican, Dominican) students as their immigrant status and historical ties to homeland differ from other groups. The researcher hopes to shed light on the recruitment and retention efforts and paradigms for Black and Latino students in the agricultural industry, and determine if there are relationships that exist between perceptions and career choice; involvement and career choice; race, ethnic origin or background and career choice; industry demographics and career choice, or societal/peer pressures and career choice. The following objectives will guide the study:

1. Assess the factors that influence Black and Latino students to pursue a career in agriculture.
2. Assess barriers preventing Black and Latino students from pursuing agricultural related careers.
3. Identify characteristics of Black and Latino students interested in pursuing agricultural careers.
4. Examine the relationship between extracurricular involvement and career choice for Black and Latino students.
5. Determine if race, ethnic origin or background has any influence on career choice.

## **Research Questions and Hypothesis**

1. Do Black and Latino students make career decisions based on parental and peer perceptions of agriculture?
2. Is there a relationship that exists between extracurricular involvement and career choice?
3. Are there societal (age dynamic) and peer pressures (popularity) that affect career choice?
4. Does race, ethnic origin or background have any influence on career choice?
5. Do Black and Latino students make career decisions based on industry demographics?

## **Null Hypothesis**

The following hypothesis will be tested:

1. Black and Latino students do not make career decisions based on parental and peer and perceptions of agriculture.
2. There is no relationship between extracurricular involvement and career choice.
3. Societal (age dynamic) and peer pressures (popularity) do not affect career choice.
4. Race, ethnic origin and background do not have any influence on career choice.
5. Black and Latino students' do not make career decisions based on the demographics of the agricultural industry.

## **Alternative hypotheses:**

1. Black and Latino students do make career decisions based on parental and peer and perceptions of agriculture
2. There is a relationship between extracurricular involvement and career choice.

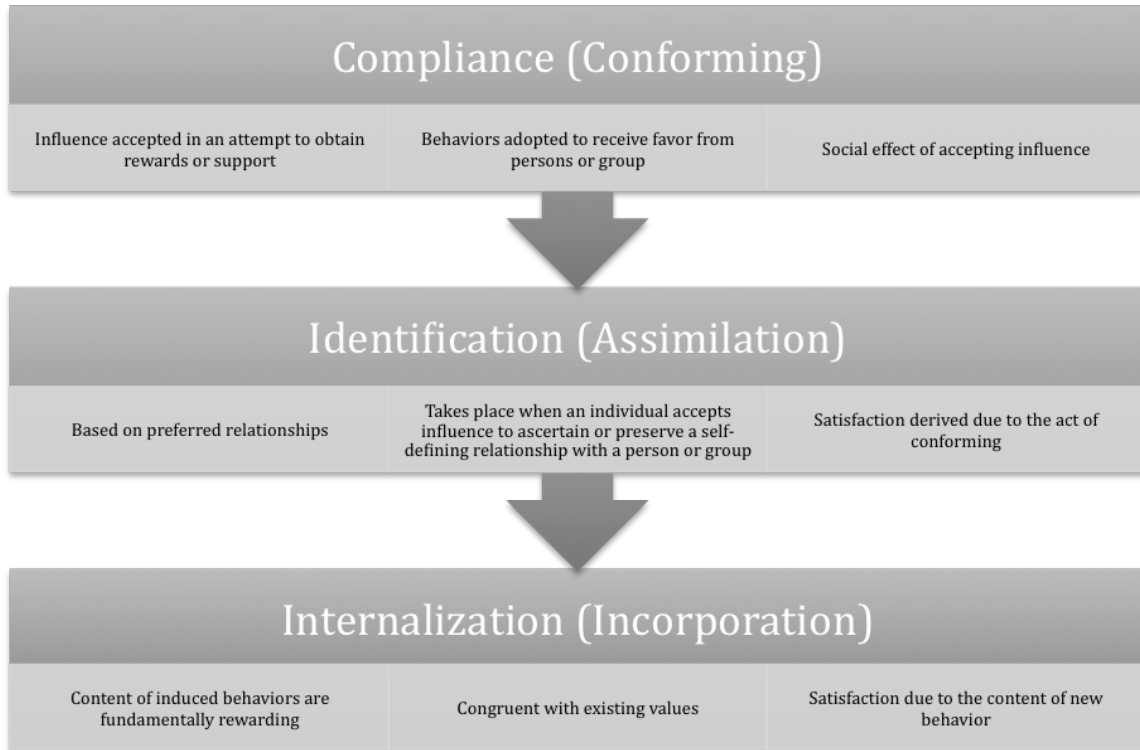
3. Societal and peer pressures do affect career choice.
4. Race, ethnic origin and background do have an influence of career choice.
5. Black and Latino students' do make career decisions based on the demographics of the agricultural industry.

### **Theoretical Framework**

Influence is the ability to have an effect on, and, or alter something in a significant but usually indirect way (Merriam-Webster, 2011). Influence characterizes improvements and, the development and acceptance of innovative opinions (Moscovici, 1985b; Wood, Lundgren, Ouellette, Busceme, & Blackstone, 1994). The perception of power and its role in influence is a key determinant of contagion pickup (Lippitt, Polansky, & Rosen, 1952); especially when group consensus is desired, and can be attained through influence (Wood et al., 1994). The higher a person's position, the greater the influence he or she will have (Lippitt et al., 1952).

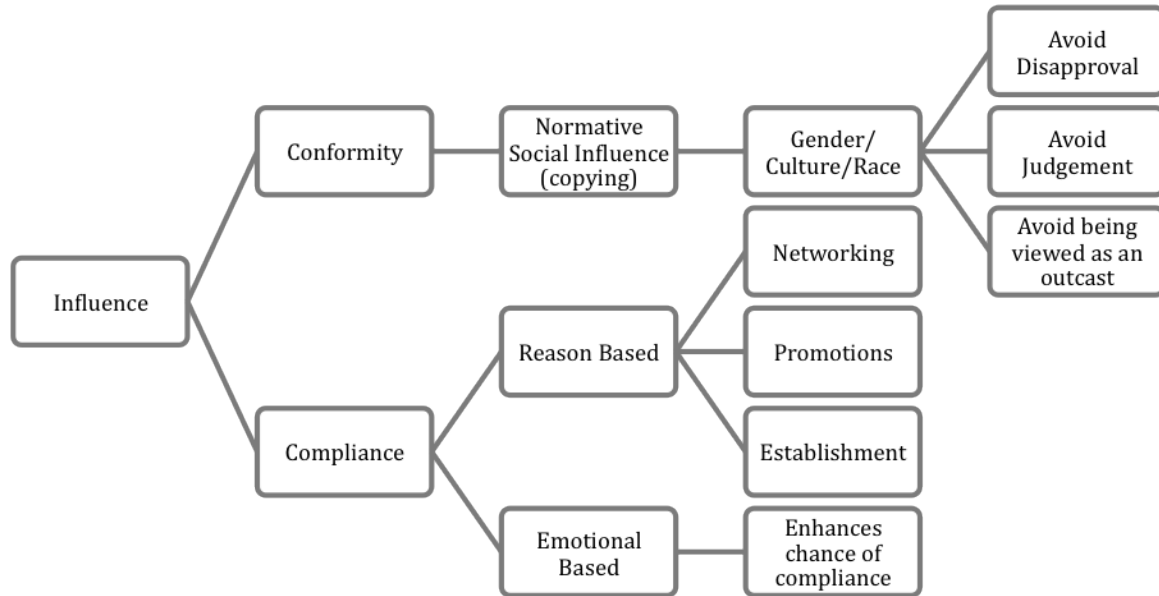
Kelman (1958) depicts influence as a process distinguished by three parts that include: compliance, identification and internalization. Individuals accept influence: for favor and adopt behaviors for approval (compliance); to please relationships, people and groups (identification); and because it presents a reward (internalization) (Kelman, 1958). The development (compliance, identification and internalization) of influence symbolizes various ways of accepting influence, and begins with analyzing the factors of influence (Kelman, 1958).

**Figure 1.1: Process of Influence**



Factors of influence are examined by the probability to accept influence as a combined function of meaningful significance to expected outcomes, an agent of persuasion via authoritative measures and commanding responses that haven't been stimulated (Kelman, 1958).

**Figure 1.2: Determinants of influence (“Social Influence Map”, n.d.)**



Social influence is a broad class of influences, and is positioned at the focal point of all social interaction (Blascovich, N.D). Social influence has a significant role in the development of opinions and the dissemination of information (Forster, Grabisch, & Rusinowska, 2013). Social influence is when an individual posses the ability to induce a similar behavior in others by way of social ties (Agrawal, Liu, Srivatsa, & Wang, 2012).

**Figure 1.3: Social influence in children (“Imitation”, Wu, 2007).**



In a field study on social influence in groups of children, Lippitt, Polansky and Rosen (1952) found that persons in groups tend to imitate the behavior of individuals that have recognized power to influence the group. Individuals with power use their status as a means to influence persons with a lesser status, and are more successful at influencing others (Lippitt et al., 1952).

Lippitt’s et al. (1952) study found the following:

The behavior of a member in a high power position is sometimes perceived as representing, or representative of, group standards, and so his acts are spontaneously imitated as group approved or desired acts. Sometimes the high power person is perceived as having the kind of position in the group “I would like to have”. Therefore his actions may be perceived as “the kind of actions which help one to achieve a position like that”, so his behavior is picked up by others who would like to be “looked up to like he is”.

**Figure 1.4: Social influence's effect on career choice (Association of Microfinance Institutions in Rwanda, 2013)**



Career decisions can be based on social comparisons and social influence (Kulkarni & Nithyanand, 2013). The perceived worth of career decisions appear to be higher when attested by others due to significant customs centered around particular employers in a social context (Higgins, 2001; Kulkarni & Nithyanand, 2013). People compare themselves to others when there is a limited source of information available (Kilduff, 1990; Kulkarni & Nithyanand, 2013). Informal sources of information delivered by friends and family influence perceptions and career choice (Van Hoyer and Lievens, 2007, 2009; Van Hoyer and Saks, 2010; Kulkarni & Nithyanand, 2013). Ultimately, people compare themselves to others with a similar role and background, and emulate what others are doing in the rise of uncertainty when information is unavailable and they value one's opinion (Kulkarni & Nithyanand, 2013). This point was further explored in



Kulkarni & Nithyanand's (2013) study that found the following:

Research with graduate students' shows that such informational social influence has a strong impact on perceptions of organizational attractiveness, and negative word-of-mouth interferes with recruitment advertising effects. While all respondents accepted the pervasive influence of social pressures on job choice decisions, only a minority indicated that they personally succumb to social pressures. Students follow opinions of non-organizational sources when organizational sources are seen as relatively unavailable or when organization information is seen as incomplete is also worthy of note to employers and human resource professionals. If job seekers are indeed making choices for signaling their worth to their peer groups, organizations would do well to highlight their accomplishments and their symbolic dimensions forcefully. Students rally around others' notion of what is an attractive job or an organization, and such word-of-mouth is a non-organization recruitment source, employers can manage it indirectly through building relationships with influential social actors or opinion leaders on campus, or inviting applicants' friends and family to open houses or job fairs.

For the purpose of this research we classify influence as the ability to have an affect on someone by altering their beliefs, and occasionally aligning it with that of our own.

## **Assumptions of the study**

The following assumptions were made while conducting this study:

1. Student responses on the questionnaire were honest and accurate.
2. Students are currently enrolled in high school agricultural education programs.
3. Students received no assistance with answering the questionnaire.

## **Limitations of the study**

This study was conducted with the following limitations:

1. The findings of this research only reflected the opinions of students enrolled in the agricultural education program at William H. Turner Technical Arts High School in Miami, FL.
2. Student participation was limited to students who were enrolled in the agricultural education program.
3. Participation was limited to students who returned informed consent forms.
4. Access to the student population identified by the researcher was at the discretion of and determined by each individual school principal.

## **Operational definitions**

*Minority*: the smallest in number of two groups that constitute a whole; specifically, a group less in number; in this case, Black and Latino students (Merriam-Webster, 2011).

*Diversity*: being composed of differing elements; a variety; the inclusion of different types of people (as people of different races or cultures) in a group or organization (Merriam-Webster, 2011).

*Inclusion*: the act or state of being included (Merriam-Webster, 2011).

*Barrier*: a formation hinders or prevents movement or action

*Perception*: a mental image, belief or attitude (Merriam-Webster, 2011).

*Demographics*: the active balance of a population (Merriam-Webster, 2011).

*Recruitment*: an act or method of recruiting (Merriam-Webster, 2011).

*Retention*: the act or state of being retained (Merriam-Webster, 2011).

*Societal pressures*: burdens of distress caused by societal factors (Merriam-Webster, 2011).

*Peer pressure*: distress caused by your equal (Merriam-Webster, 2011).

*Extracurricular involvement*: involvement not within the scope of a regular curriculum; in this case, 4 – H and the National FFA Organization (Merriam-Webster, 2011).

*Ethnic origin and Ethnicity*: affiliation with a particular group (Merriam-Webster, 2011).

*Background*: a sum of someone's experience (Merriam-Webster, 2011).

*Race*: a class of people belonging to the same group (Merriam-Webster, 2011).

*Career choice*: act of deciding upon a career (Merriam-Webster, 2011).

*Influence*: spiritual and moral strength (Merriam-Webster, 2011).

*Relationship*: connections or relations binding participants (Merriam-Webster, 2011).

*Industry*: branch or department that employs persons; in this case, the agricultural industry (Merriam-Webster, 2011).

*Factors*: contributors to a given situation or thing (Merriam-Webster, 2011).

*Black*: Refers to a group of individuals with dark pigmentation of the skin; usually originating from Africa (Merriam-Webster, 2014).

*Hispanic and Latino*: Refers to a group of individuals originating from Latin America; words used interchangeably (Merriam-Webster, 2014).

*Embedded Agricultural Program:* Programs preparing students for careers in agriculture and natural resource systems delivered through instruction, supervised agricultural experience and leadership (National FFA Organization, 2014).

## **Chapter II**

### **Review of Literature**

The purpose of this chapter is to supply a review of literature related to the factors that influence minorities to pursue careers in agriculture. This review will include previous research related to minority presence and involvement in the agricultural industry, and minority perceptions and perceived barriers to pursuing careers in agriculture.

Feintuch (2009) states that interest must begin prior to the collegiate experience in order to increase minority presence in the field of agriculture. According to Bowen et al. (1997), promotional activities at the collegiate level have proven itself to be ineffective, and efforts to increase minority enrollment rates should begin at the high school level. Minority participation and involvement in the field of agriculture is scarce; and these opportunities are overlooked due to poor perceptions of the agricultural industry. For these reasons, this study has focused on minority high school students enrolled in embedded agricultural education programs.

Section one of this chapter reviews literature regarding the presence and involvement of minorities in agriculture. Section two of this chapter reviews literature regarding minority perceptions of agriculture. Section three of this chapter reviews literature regarding barriers as factors that prevent minority participation in agriculture. Section four of this chapter reviews literature regarding recruitment activities as a method to increase involvement in agriculture. Section five reviews literature regarding parallels that depict relationships regarding perceptions and participation in agriculture, and section six summarizes the reviewed literature observed in the previous five sections.

## **Diversity in Agriculture**

Ethnic minorities in agricultural fields are highly underrepresented (Foster & Henson, 1992). Blacks and Latinos collectively make up a total of 10.2% of the United States Department of Agriculture's workforce and 3.8% of all farm operators in the U.S. (USDA, 2007). Decreased minority enrollment in undergraduate and graduate programs make it difficult to increase their presence and involvement in agricultural areas (Larke & Walsh, 2003); and the enrollment in secondary and collegiate level agricultural programs is dependent upon student interest (Bagget & Smith, 2012).

Current research studies have shown that there are very few minority college graduates to meet the demands of the agricultural industry (Scott & Lavergne, 2004). These low levels of minority enrollment in the agricultural field often begin at the high school level (Bowen et al., 1997, p. 23); and can be attributed to the fact that minority students are discouraged from entering the field of agriculture by teachers, parents and mentors (Jackson & Williams, p. 22). Current demographics of secondary school agriculture programs, and particularly the FFA, do not align with today's ethnicity found in many public schools (Cano, 2008). Gradual increases in the number of minority students indicates that there is a great need for high school agriculture educators to become more diverse in their role as educators and advisors' (Jackson & Williams, 2003, p. 22). Given that many minority students are impacted by the influence of significant others, and having people of color to encourage them, increases their likelihood to pursue an agricultural related career (Larke & Walsh, 2003).

Much of the foundation of shaping attitudes lies with the agricultural educators who must be able to plan and execute programs and activities that will contribute to

current and future demographics of America (Cano, 2008). Agricultural education and agricultural businesses should understand the rewards and motivational factors that would attract minority populations (Zoldoske, 1996). Ethnic minority populations are growing, and a great majority of these students will be needed in the field of agriculture to ensure the industry's future feasibility and to aid the United States in maintaining its global position (market, food and export) in agriculture (USDA, 1998). If prepared early, students of color can encompass the ability to solve global issues and meet the integrative needs of society (Morgan, 2000); and more importantly positively contribute to the food and agricultural sciences (Bowen et al., 1997, p. 21).

Agriculture is too important to be taught to a limited number of students (National Research Council, 1988; Dyer, Breja, & Myers, 2004). Students need the guidance of role models from their own ethnic background to guide them through agricultural related programs and careers (Larke & Talbert, 1995, p. 43). The future of agriculture depends on its ability to attract brilliant and competent leaders from the youth population, and has been argued that this can best be achieved by gaining the attention of minority students (Linhardt, Stewart, & White, N.D.).

## Perceptions of Agriculture

Nearly all Americans lack basic knowledge about agriculture and food production (Birkenholz, Gardner, Frick & Machtmes, 1995). Students know little about food and agricultural science careers, and often associate them with farming (Bowen et al, 1997, p. 25). Equating agricultural careers with ranching and farming has led to negative attitudes and poor perceptions of agricultural careers for minorities (Orthel, et al. 1989; Bowen et al., 1997).

Historically, minority students have held negative perceptions about the agricultural industry and agricultural education (Larke & Talbert, 1995). Over time, the experiences of Hispanics in agriculture have intensified their already negative perceptions of the agricultural industry (Jimmerson et. al., 1993, p. 12); and the legacy of manual labor has left minority youth to equate agriculture careers with low pay, low prestige and labor intensive (Larke & Barr, 1987; Larke et. al, 1999).

Negative perceptions of agriculture and agricultural education exist because of a lack of exposure (Larke & Talbert, 1995, p. 44). Students may be interested in pursuing careers in agriculture if they had a greater understanding and positive perception of agriculture (Anderson, Broyles, & Cannon, 2009; Bagget & Smith, 2012). These students are unaware of agricultural-related employment opportunities because of a lack of inadequate information about the field (Mallory & Sommer, 1986; Bagget & Smith, 2012).

Increased minority participation in agricultural fields should not be expected if barriers continue to exist and perceptions don't change (Larke & Talbert, 1995, p. 44). The depiction of agriculture itself is a perceived barrier to enrollment in colleges of



agriculture for students (Bagget & Smith, 2012). There is not enough information available at the secondary school level about agriculture (Birkenholz et al., 1995). Students' negative perception of the quality of work and success makes it almost impossible to promote careers in agriculture (Mallory & Sommer, 1986; Bagget & Smith, 2012).

## **Barriers**

Perceptions of careers, social status and a lack of information about career opportunities have been identified as barriers for minority students (Fraze & Rutherford, 2011, p. 75). Barriers to diversity and inclusion in agriculture include prejudicial issues, perceptions, stereotypes, the lack of mentors or role models and guidance counselors (Talbert and Larke, 1995). Program reputation is another key area why we see declines in agricultural program enrollment (Dyer et al., 1996). Many minority students are discouraged by parents, teachers, and mentors from entering the field of agriculture because of historical beliefs and a lack of encouragement to enroll in an agriscience course (Jackson and Williams, 2003). This is coupled with lack of resources at high schools for students to develop an appreciation for science related programs (Dolce, 1989; Bowen et al., 1997, p. 22). Minorities have a limited understanding of agricultural related disciplines and careers (Rawls & Thomas, 1994; Bowen et al., 1997); and do not see the benefit in pursuing agricultural related careers (Larke & Talbert, 1995). In particular, minority students are not aware of the demands of agricultural related careers (Bowen et al., 1997, p. 21) and do not see their role in this growing and diverse field. Participation is lacking and the key to increasing minority presence in the field of

agriculture ought to begin at the high school level to develop students' interest in the subject matter before they select a college major (Feintuch, 2009).

Disinterest held by minority students has been related to their lack of knowledge about agricultural related careers (Bowen et al., 1997, p. 21). Parental influence on a student's decision to enroll in agricultural programs (Bowen & Esters, 2004, p. 1) might be a result of a lack of interest and appeal (Morgan, 2000). Lack of interest can be credited to their dearth of knowledge and understanding of programs linked to agriculture as well as possible careers (Bagget & Smith, 2012). Additionally, the academic rigor of agricultural programs presents another challenge for minority enrollment because students must be proficient in the hard sciences (biology, chemistry, physics, botany and zoology), but do not enroll in higher-level science courses at the high school level (Bowen et al., p. 21). This is often due to the courses not being offered because of limited funding and resources. A deficiency of interest in subject matter makes it difficult for students to understand the importance of agriculture (Bagget & Smith, 2012).

High school students are tasked with exploring and planning for postsecondary careers, and are at the exploration stage of career development, but have school counselors that are uninformed about the factors that influence student career choice and how to approach facilitating the career decision-making process (Newmeyer, Pan, & Tang, 2008). Career self-efficacy plays a role between a student's background, interest and outcome expectancies, and is influenced by race, gender, ethnicity, and by background and learning experiences (Newmeyer et al., 2008).

Urban aspects of agriculture should be emphasized to contest differences in residential background, and help with the recruitment of minority students as they are

usually from non-farm and non-rural areas (Larke & Talbert, 1995). Due to geographic boundaries and limited exposure, black and Latino students in urban areas lack knowledge about the agricultural industry preventing them from committing to careers in agriculture (Birkenholz et al., 1995). Exposure to work experiences and learning environments influences educational aspirations (Newmeyer et al., 2008). The quality of the education received, financial support and the environment could have direct and moderating effects on career decision-making (Newmeyer et al., 2008). Environmental factors influence career choice through its impact on self-efficacy, perceived social support and barriers (Newmeyer et al., 2008).

Negative perceptions and a sense of exclusion are common barriers to minority enrollment in secondary agricultural programs. Minority students feel unwelcomed and are reluctant to enroll in agricultural programs at the high school level (Bowen & Jackson, 1992) due to perceptions of agriculture as strictly farming or ranching and for white males (Bowen et. al, 1997, p. 21). As a result of a lack of exposure and access to the information needed to make knowledgeable decisions about agriculture and its significance and success (Bagget & Smith, 2012), these students often hold these beliefs.

### **Recruitment Efforts**

Perceived barriers to participation and involvement in the agricultural industry can be reduced by recruitment activities (Larke & Talbert, 1995). However, recruitment activities are often always focused on populations already engaged in agricultural education and not on those who are vaguely foreign to agricultural education and its related fields (Dyer et al., 2004). Recruitment efforts to promote minority participation in the field of agriculture exist but the percentage of minorities in the agricultural industry

still remains low (Jackson & Williams, 2003). Recruitment approaches are generalized by colleges and based on traditional recruitment tools (Bowen et al., 1997, p. 22). For example, admissions and counseling programs should exist to identify and retain students interested in pursuing agricultural related degrees (Dyer, Lacey, & Osborne, 1996, p. 38). More focused efforts should be in place to specifically recruit ethnic minority and female students who poses an interest in agricultural occupations (Luft, 1996).

Solutions implemented to promote agricultural programs amongst minority students show limited success at the collegiate level (Bowen et al., 1997, p. 21). The most common type of recruitment of minority students was indentified as including pictures of minorities and women in recruitment promotional items, brochures and other related materials (Bowen et al., 1991). Additional valuable recruitment activities are needed to increase the minority enrollment rates and should begin in high school (Bowen et al., 1997, p. 22). More recruitment efforts should be conducted to recruit minority students into the agricultural education sector (Larke & Talbert, 1995).

As suggested by Cano (2008), are we recruiting because we want or have to? The recruitment of outstanding individuals needs to take place to sustain agriculture's current status (Larke & Jones, 2001, p. 39). Useful recruitment strategies must be implemented, and the recruitment of outstanding individuals must increase to sustain the existing position of agriculture (Scott & Lavergne, 2004). Recruitment programs should be initiated at both elementary and secondary school levels to promote food and agricultural sciences careers (Bowen et al., 1997, p. 23); and students should be encouraged to pursue careers in agriculture (Dyer et al., 1996).

## Parallels

The collegiate experience can positively influence a student's career choice (Larke & Walsh, 2003). Collegiate enrollment in agricultural programs is closely paralleled to students' who have received formal training in agriculture fields at the high school level (Dyer et al., 1996, p. 33). Caucasian students were more than likely to enroll in agricultural programs over minority students due to previous agricultural experiences (Larke & Talbert, 1995, p. 41). Students exposed to agricultural programs at the high school level were more likely to pursue agriculture as an area of study and had positive beliefs about agricultural related careers (Russell & Thompson, 1995, p. 61). Students enrolled in agricultural programs at the high school level are more likely to pursue careers in agriculture (Dyer et al., 1996). Exposure to agricultural coursework led to positive perceptions about the agricultural industry (Russell & Thompson, 1993, p. 59); and persons with positive perceptions towards a situation or subject matter tend to evaluate them positively (Greenwald 1989; Dyer et al., 1996).

Minority students typically select careers they are more prepared for and familiar with when considered economically and socially disadvantaged (Larke & Walsh, 2003). Students with parents of African American decent are usually steered away from agricultural related careers because of a lack of understanding about the agricultural industry (Birkenholz et al., 1995); and students with limited job opportunities in agriculture choose careers in non-agricultural related fields (Larke & Walsh, 2003).

The participation of people of color in the agricultural industry is declining although there are substantial increases in this population (Scott & Laverne, 2004). Blacks, Latinos and Native Americans are considered underrepresented in science and

engineering because they constitute smaller percentages of science and engineering degree recipients and of employed scientists and engineers than they do of the U.S. population (National Science Foundation, 2011). The difficulties that minorities face and must overcome, and their ability to overcome these barriers have a direct influence on their career choice (Linhardt et al., N.D.). Careers are shaped through exposure to jobs, educational experiences, educational advancement, interest and aptitude, and begin before employment by parental influence (Linhardt et al., N.D.). It has been shown that students of color encouraged by people of color to consider agricultural related careers increased their likelihood of pursuing agricultural related careers (Larke & Walsh, 2003).

### **Summary of Literature Reviewed**

A review of literature implies a plethora of studies have researched the factors that influence minority (Black and Latino) high school students to pursue careers in agriculture. To date there have been very few studies conducted to examine the power influence on Black and Latino high school students' decision to pursue a career in agricultural and related industries.

After conducting a review of literature, it was found that most of the research examined students already enrolled in collegiate programs or populations that have already matriculated through the collegiate experience and have graduated. The majority of these studies focus on minority populations as a whole, while only a few focus on Black and Latino populations. Attitudes and perceptions of agriculture have been over researched, and other studies focus little on high school populations.

Due to the existing and inadequate extent of research regarding motives that persuade Black and Latino high school students to pursue careers within agricultural and

related fields, further research is needed. Bowen (1997) and Feintuch (2009) both believe current activities to recruit students of color have proven to be unsuccessful, and the key to increasing their presence in the agricultural industry ought to begin at the high school level.

This research will provide information pertaining to the factors that influence Black and Latino high school students to pursue careers in agriculture. The addition of this research centered on factors which induce students of color (Black and Latino) to pursue careers in agriculture will not only allow the industry to develop new and improved methods that attract students of color, but it will improve Black and Latino involvement in the agricultural industry, and increase the number of Blacks and Latinos that pursue agricultural careers in the long run.

## **Chapter III**

### **Methodology and Procedures**

#### **Type of Study**

A descriptive correlational research design was used to address the following research questions:

1. Do Black and Latino students make career decisions based on parental and peer perceptions of agriculture?
2. Is there a relationship that exists between extracurricular involvement and career choice?
3. Are there societal (age dynamic) and peer pressures (popularity) that affect career choice?
4. Does race, ethnic origin or background have any influence on career choice?
5. Do Black and Latino students make career decisions based on industry demographics?

This study was created in an attempt to find relationships between variables, and depict their strength and direction. Five high schools in Miami-Dade County, Florida with embedded agricultural education programs were indentified. A comparison of all responses and themes that arisen was conducted, as the primary objective of this research study was to discover and depict relationships.

#### **Unit of Analysis**

Students enrolled in high school agricultural education programs served as the unit of analysis for this research. Perceptions, barriers, influence, involvement, education, race and ethnic background were used to determine the factors that influence minority



high school students to pursue a career in agricultural and related fields. A focus on these components provided the researcher with concrete information on the factors that influence Blacks and Latinos to pursue careers in agriculture.

### **Population and sampling methods**

The target population for this correlational study was high school students enrolled in high school agriculture programs. The sampling frame included students enrolled in embedded agricultural programs in Miami - Dade, Florida. Two of the five high schools identified were sampled and include: William H. Turner Technical Arts High School and John A. Ferguson Sr. High School. **Table 3.1** is a description of the sample (U.S. News & World Report, 2012). The population was limited to schools using the agricultural education three-component instruction model. Non - probability-sampling (purposive convenient) techniques were used to study members of the sample as permitted by measuring several variables and their relationship.

**Table 3.1 Breakdown of Student Population by Ethnic Background**

<b>SCHOOL</b>	<b>LOCATION</b>	<b>TOTAL STUDENT POPULATION</b>	<b>STUDENT DEMOGRAPHICS (%)</b>	<b>MINORITY ENROLLMENT RATE (%)</b>
Coral Reef Senior High School	Miami, FL	3,000	Asian 4%, Black 17%, Hispanic 57%, White 20%	78%
Felix Varela Senior High School	Miami, FL	3,074	Asian 3%, Black 6%, Hispanic 81%, White 10%	90%
John A. Ferguson Senior High School	Miami, FL	4,189	Asian 2%, Black 2%, Hispanic 87%, White 8%	91%
Robert Morgan Educational Center	Miami, FL	2,389	Asian 3%, Black 20%, Hispanic 61%, White 16%	84%
William H. Turner Technical Arts High School	Miami, FL	1,751	Asian 1%, Black 73%, Hispanic 25%, White 1%	99%

## **Variables**

The dependent variables in this study were the factors (perceptions, barriers, influence, pressures) that influence minority students to pursue a career in agriculture and were dependent upon the following independent variables: race/ethnic background and experience/involvement.

### **Control variables/ demographics**

Demographic variables were used in this study and analyzed as control variables. The following variables: age, grade, gender and home location area allowed differences in factors to be compared amongst all students. These variables allowed relationships to be comprehended and assisted the explanation and simplification of the research findings.

### **Research design**

The research accompanying this study featured a descriptive correlated quantitative approach. A questionnaire was administered to determine the factors that influence Black and Latino high school students to pursue careers in agriculture. Theoretical sampling and the constant comparative method of concurrent data were used to develop theory.

### **Instrumentation and Questionnaire Development**

The instrument used to acquire data from participants was modified and reworked from a preceding questionnaire created to assess agriculture and the perceptions of agriculture amongst South African Youth in the Limpopo Province (Webster, Dumas, & Taylor, 2014). The original instrument consists of two sections, three parts and a total of forty-three items. Respondents were asked to rate statements centered around agriculture and perceptions of the agricultural industry on a scale of one-to-five in section one, asked

to indicate the demographical groups they belonged to in section two part a and requested to write a few sentences regarding their perception of agriculture in section two part b.

The instrument was altered and tailored to the population of interest and based upon the literature in the subject area. Dichotomous questions, questions based on levels of measurement, filter questions and open-ended questions were asked and featured in the questionnaire. The researcher designed a three -part survey instrument. Section I: Part A featured questions on agricultural literacy, questions inquiring about the factors that influence career choice, questions on what students believe are prospective barriers to pursuing careers in agriculture, and questions identifying characteristics of those interested in agriculturally related careers. This section was measured by rating statements from one-to-five in which (1) = Strongly Disagree, (2) = Disagree, (3) = Neutral, (4) = Agreed and (5) = Strongly agree. Section I: Part B featured questions about overall involvement and participation in 4-H and the FFA organization I which respondents were to indicate their response by circling “Yes” or “No”. Section II: Part A featured demographic questions that we measured by the indication of an “X” in the box (See Appendix A).

### **Validity of instrument**

The instrument used was carefully developed, and assessed by a panel of experts comprised of faculty members and graduate students enrolled in the Department of Agricultural, Economics, Sociology and Education at The Pennsylvania State University. The panel of experts reviewed the survey instrument and determined if its content and accuracy were suitable for administration. Panelists assessed construct and content

validity, determined the appropriateness of instrument and made recommendations to the researcher.

### **Reliability**

A pilot test was conducted at the MANRRS 28<sup>th</sup> Annual Career Fair and Training Conference in Sacramento, CA. The pilot test was administered to Jr MANRRS high school students enrolled in grades 9<sup>th</sup> – 12<sup>th</sup>. The pilot test provided feedback that enhanced data reliability and stability. Data from the pilot test was evaluated to measure the dependability of the instrument used. Cronbach's Alpha coefficients were used to indicate the reliability of the questions. The statistic reliability for the pilot test was a .70 (Good), which is good for internal consistency.

### **Data collection and Questionnaire Administration**

The Don Dillman Total Design Method (TDM) was used to collect data. Minor modifications to the survey methodology were made in an effort to tailor its' methods to the research study. Data collection took place in two phases. The first stage of data collection included initial data received from the program identified. In the second step, a follow-up reminder and replacement questionnaires were offered to non-respondents. A follow-up reminder was sent out to non-respondents who did not return questionnaires by the assigned due date. The researcher requested data returns from non-respondents. Collecting data from non-respondents was the second phase of data collection.

### **Human subjects**

The research complied with the regulations set forth by the Office for Research Protections (ORP) at The Pennsylvania State University. Human subjects involved in this research study were protected according to the standards of the ORP. The Institutional

Review Board (IRB) reviewed all instruments for the protection, rights and welfare for all participants. Additionally, all measures regarding the researcher's data collection efforts to be initiated throughout the course of this study was reviewed and approved by the IRB. There were no changes to the research procedure, and no items were sent to the IRB for reapproval.

### **Procedure**

The researcher chose to sample high school students enrolled in embedded agricultural programs due to the knowledge they encompassed about agriculture, and because of their involvement, experience and development throughout the course of the program.

Embedded agricultural education programs in Miami-Dade County, Florida were chosen as it provided access to a greater number of Black and Latino students, and Black and Latinos represented in this area were considered the majority and not the minority amongst their perspective student populations. Miami – Dade County, Florida is the 7<sup>th</sup> most populous county in the continental United States, and the most populated county in the state of Florida. Only 16.3% of the county's population is Non-Hispanic White (United States Census Bureau, 2010).

**Figure 3.1: The Three-Circle Model (National FFA Organization, 2014)**



Five high schools in Miami-Dade County were identified on the basis of having agricultural education programs, and following the three-circle model which includes: classroom/laboratory instruction, supervised agricultural experience projects and student leadership organization in which students are a part of the National FFA Organization.

Research approval was then solicited and received by the Pennsylvania State University's Institutional Review Board. An application was the submitted to the Miami-Dade County Public School Board's Research Review Committee (MDCPSBRRC) in which the proposed research study was reviewed and approved. Although approved by the MDCPSBRRC, it was at the discretion of each individual school principal to decide if he or she was interested in the research study and would permit his or her school to participate. A total of three schools declined, and include: Coral Reef Senior High School, Robert Morgan Senior High School and Felix Varela Senior High School.

Reasons for declining to participate in the study included the feasibility to conduct the study on school premises, academic and extracurricular conflicts, a lack of interest in the study's subject matter, and no foreseen benefit of participation.

The two participating schools were then followed-up with as the researcher acquired the total number of students enrolled in each of the agricultural educational programs at both schools. Once these totals were received, the researcher then sent the primary agricultural instructor at each school a participant letter describing the study and detailing its purpose, a participant recruitment form inviting students to participate in the study and specifically detailing the research study, and an informed consent form detailing procedures and compensation for participation for all students enrolled in the program. The participant recruitment form, participant letter and informed consent form were then reviewed by the primary agricultural instructor with all of the students and handed out to each individual student enrolled in the embedded agricultural program. Students were instructed to read through the participant letter, participant recruitment form and informed consent form at their leisure, and return the informed consent form signed and dated if they desired to participate in the research study. Students returned their consent forms to the primary agricultural instructor, and the primary agricultural instructor mailed the consent forms to the primary researcher. Surveys were then mailed out to the primary agricultural instructor following the receipt of the informed consent forms.

Surveys were only issued to students who returned their informed consent forms. Additional students were given the opportunity to participate in the study provided that they turned in their informed consent forms as well. There was some difficulty with the

receipt of consent forms and students were given additional time to turn them in. Students were given a total of six weeks to complete and return the questionnaire. To ensure that all students were allotted the same amount of time, surveys were handed out to students on a collective basis at one time. Surveys were issued to students on Monday, December 2<sup>nd</sup>, 2013. A follow-up reminder was then given to students a week after the initial survey was received; three weeks and five weeks following the initial mail-out. Duplicate surveys were provided to non-respondents. All documents were sent via U.S. Postal Service registered mail.

John A. Ferguson Sr. High School was omitted from the study after several failed attempts to retrieve student data. Although consent forms for 68 students were received, no questionnaires were returned to the researcher.

### **Data Analysis**

Data was used to address the study's research questions and analyzed by content. Emergent themes and patterns were identified and organized into coherent categories.

Quantitative data was coded and the IBM Statistical Package for Social Sciences (SPSS) was used to compute these data. Data was analyzed using descriptive statistics, and means, modes, standard deviations, variances and frequencies were produced.

Correlations (Pearson Product Moment) were used to test the significance of relationships involving dependence and were indicative of predicting relationship to be exploited by the researcher. Chi-squares were calculated, and used to compare means of the sample and the distribution of the means being tested.

Statistical hypothesis testing was conducted and the statistical significance was used to determine if the following null hypothesis were to be rejected or retained: (1)



Black and Latino students do not make career decisions based on parental and peer and perceptions of agriculture; (2) There is no relationship between extracurricular involvement and career choice; (3) Societal (age dynamic) and peer pressures (popularity) do not affect career choice; (4) Race, ethnic origin and background do not have any influence on career choice; and (5) Black and Latino students' do not make career decisions based on the demographics of the agricultural industry. Significant differences were concluded by the calculation of chi – squares, pre determined levels of significance (p-values), degrees of freedom and established upon a 95% confidence interval. The null hypothesis was rejected if the chi – square and p-values were less than significant and accepted if significant.

## **Chapter IV**

### **Results**

#### **Biographical data**

The total number of respondents to complete and turn in a questionnaire was  $n = 44$  students, which yielded a 28% survey response rate as the total population comprised of  $n = 158$  students. All the students to participate in the study were enrolled in an embedded agricultural education program, thus representing the beliefs and opinions of high school students in grades 9 – 12 at William H. Turner Tech High School residing in Miami, FL. The data from all of the surveys were entered and analyzed, however unanswered questions (missing values) created differences in the frequencies of responses. A Cronbach's Alpha was completed to assess the reliability of the instrument to the questionnaire it was derived from. A reliability score of .7 (Good) was produced for the instrument used to derive the questionnaire used in this study. A reliability score of .6 (Acceptable) was produced for the instrument that was created.

Student responses were broken up into themes and include: Section I (Part A) – Perceptions of Agriculture, Perceptions of Agricultural Careers, Coursework and Competence, Agriculture and Me, Influence and Support; Section II (Part B) – Characteristics of students enrolled in embedded agricultural education programs; And Section II (Part A) – Demographical questions. The following categories, their distributions and a comprehensive delineation of student demographic characteristics are represented below.

### *Gender*

A large majority of the students that participated in the study were females, with a 2.33: 1 female to male ratio. A total of 30% of the students were males and a total of 70% of the students were females.

### *Age*

The respondents' ages ranged from 14 years old to 19 and older years of age. A total of 0% of the respondents reported being 13 years of age, 11.6% reported being 14 years of age, 25.6% reported being 15 years of age, 14% reported being 16 years of age, 23.3% reported being 17 years of age, 20.9% reported being 18 years of age and 4.7% reported being 19 years of age or older. Majority of the students in the population tended to be 15, 17 or 18 years of age.

### *Grade Level*

This study was not limited to respondents based on their academic classification. The researcher valued the opinions and beliefs of all students, and felt that each student despite of their academic classification had something to uniquely offer this research. Respondents were asked to identify their grade level in which 32.6% of the respondents identified themselves as being in the 9<sup>th</sup> grade, 14% identified as being in the 10<sup>th</sup> grade, 16.3% identified as being in the 11<sup>th</sup> grade and 37.2% identified as being in the 12<sup>th</sup> grade. Students' in grades 9<sup>th</sup> and 12<sup>th</sup> more represented in the sample than any other grade level.

### *Area Lived In*

Respondents were asked to identify the residential area they lived in. A total of 10.3% of the participants reported living in a rural area, 15.4% reported living in a

suburban area and 74.4% reported living in an urban area. There were far more students who lived in an urban area than any other area.

### *Race/Ethnicity*

The students that participated in this study represented a wide array of races and ethnic backgrounds. 0% of the students' surveys indicated being White Non-Hispanic, 2.3% indicated being Hispanic – Cuban, 2.3% indicated being Hispanic – Puerto Rican, 2.3% indicated being Hispanic – Dominican, 0% indicated being Hispanic – Columbian, 27.9% indicated being Hispanic – Other, 9.3% indicated being Black – African American, 4.7% indicated being Black – Haitian, 7% indicated being Black – African, 7% indicated being Black – Jamaican, 4.7% indicated being Black – Bahamian, 9.3% indicated being Black – Other, 0% indicated being Asian – Chinese, 0% indicated being Asian – Japanese, 0% indicated being Asian – Vietnamese, 0% indicated being Asian – Other, 0% indicated being Indian, 0% indicated being Middle Eastern, 0% indicated being Native American and 23.3% indicated other. Respondents that reported being Hispanic – Other and Black – Other were either of another ethnicity/nationality that was not provided as an option or were a composition of a number of ethnicities/nationalities within the race. Respondents that chose other were multiracial, belonging to more than one racial/ethnic group.

*Perceptions of Agriculture*

**Table 4.1: Questions with regards to Perceptions of Agriculture**

<b>Questions centered around students perception of agriculture</b>
Q 1: Agriculture is farming
Q 9: Agriculture is an important part of the U.S. economy.
Q 11: My parents/guardians have a positive perception of agriculture.
Q 13: There are people who look like me in the agricultural industry.
Q 15: Anyone can pursue a career in agriculture.
Q 16: The agricultural industry is racially diverse.
Q 17: My friends/peers have a positive perception of agriculture.
Q 22: The portrayal of agriculture in the media is positive.
Q 23: The media influences my perception of agriculture.
Q 25: I have a positive perception of agriculture.

**Table 4.2: Breakdown of student responses regarding Perceptions of Ag.**

<b>Question</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
Q 1:	21.4%	21.4%	28.6%	19%	9.5%
Q 9:	0%	0%	4.5%	20.5%	75%
Q 11:	4.5%	15.9%	31.8%	29.5%	18.2%
Q 13:	15.9%	25%	29.5%	15.9%	13.6%
Q 15:	9.3%	7%	9.3%	41.9%	32.6%
Q 16:	20.5%	20.5%	27.3%	13.6%	18.2%
Q 17:	11.4%	4.5%	25%	29.5%	29.5%
Q 22:	6.8%	15.9%	47.7%	22.7%	6.8%
Q 23:	18.2%	13.6%	45.5%	22.7%	0%
Q 25:	4.5%	0%	2.3%	29.5%	63.6%

**Table 4.3: Breakdown of student responses regarding Perceptions of Ag. Continued**

<b>Question</b>	<b>Mean</b>	<b>Mode</b>	<b>Std. Deviation</b>	<b>Variance</b>
Q 1:	2.7	3.0	1.269	1.613
Q 9:	4.7	5.0	.553	.306
Q 11:	3.4	3.0	1.106	1.224
Q 13:	2.8	3.0	1.268	1.609
Q 15:	3.8	4.0	1.239	1.536
Q 16:	2.8	3.0	1.384	1.917
Q 17:	3.6	4.0	1.279	1.638
Q 22:	3.0	3.0	.974	.949
Q 23:	2.7	3.0	1.019	1.040
Q 25:	4.4	5.0	.927	.860

When asked to which level did they agree with the following statement, “Agriculture is farming” this is how students who participated in the survey responded. A total of 21.4% strongly disagreed with the statement, 21.4% disagreed, 28.6% was uncertain, 19% agreed and 9.5% strongly agreed with the statement. A total of 0% strongly disagreed with the statement “Agriculture is an important part of the U.S. economy”, 0% disagreed, 4.5% was neutral, 20.5% agreed and a total of 75% strongly agreed. 4.5% of the respondents strongly disagreed, 15.9% disagreed, 31.8% was neutral, 29.5%% agreed and 18.2% strongly agreed with the statement, “My parents/guardians have a positive perception of agriculture”. When queried about “people look like me in the agricultural industry”, 15.9% strongly disagreed, 25% disagreed, 29.5% was uncertain, 15.9% agreed and 13.6% strongly agreed with the statement. 9.3% of the respondents strongly disagreed with the declaration “Anyone can pursue a career in agriculture”, 7% disagreed, 9.3% was uncertain, 41.3% agreed and 32.6% strongly agreed. 20.5% of the students surveyed strongly disagreed with the “agricultural industry being racially diverse”, 20.5% disagreed, 27.3% was uncertain, 13.6% agreed and 18.2% strongly agreed with the statement. A total of 11.4% of the respondents strongly disagreed with the assertion, “My friends/peers have a positive perception of agriculture”, 4.5% disagreed, 25% was uncertain, 29.5% agreed and 29.5% strongly agreed. 6.8% of the respondents strongly disagreed, 15.9% disagreed, 47.7% was uncertain, 22.7% agreed and 6.8% strongly agreed with the statement “The portrayal of agriculture in the media is positive”. 18.2% strongly disagreed, 13.6% disagreed, 45.5% was uncertain, 22.7% agreed and 0% strongly agreed with the statement “The media influences my perception of agriculture”. 4.5% strongly disagreed with having “a positive perception of

agriculture”, 0% disagreed, 2.3% was uncertain, 29.5% agreed and 63.6% strongly agreed.

### *Perceptions of Agricultural Careers*

**Table 4.4: Questions with regards to perceptions of Ag. Careers**

<b>Questions centered around students perception of agricultural careers</b>
Q 2: Agricultural careers are for White men.
Q 3: Agricultural careers are for women.
Q 4: Agricultural careers pay well.
Q 5: Agricultural careers are for people over 50 years of age.
Q 6: Agricultural careers require little to no skills.
Q 7: Agricultural careers are labor intensive/require a lot of work.
Q 10: Agricultural careers are for people who live in rural areas (not cities).
Q 20: There are many career opportunities in the field of agriculture.

**Table 4.5: Breakdown of student responses regarding perceptions of Ag. Careers**

<b>Question</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
Q 2:	65.9%	22.7%	6.8%	2.3%	2.3%
Q 3:	34.1%	13.6%	22.7%	13.6%	15.9%
Q 4:	0%	0%	20.9%	37.2%	41.9%
Q 5:	50%	27.3%	13.6%	9.1%	0%
Q 6:	56.8%	36.4%	4.5%	2.3%	0%
Q 7:	2.3%	0%	22.7%	36.4%	38.6%
Q 10:	38.6%	29.5%	20.5%	6.8%	4.5%
Q 20:	0%	2.3%	27.9%	0%	69.8%

**Table 4.6: Breakdown of student responses regarding perceptions of Ag. Careers  
Con.**

<b>Question</b>	<b>Mean</b>	<b>Mode</b>	<b>Std. Deviation</b>	<b>Variance</b>
Q 2:	1.5	1.0	.901	.813
Q 3:	2.6	1.0	1.479	2.190
Q 4:	4.2	5.0	.773	.598
Q 5:	1.8	1.0	.994	.989
Q 6:	1.5	1.0	.698	.488
Q 7:	4.0	5.0	.910	.829
Q 10:	2.0	1.0	1.137	1.294
Q 20:	4.6	5.0	.521	.272

A total of 65.9% of the respondents strongly disagreed, 22.7% disagreed, 6.8% were uncertain, 2.3% agreed and 2.3% strongly agreed when asked to rate the following statement, “Agricultural careers are for White men”. 34.1% strongly disagreed with the statement “Agricultural careers are for women”, 13.6% disagreed, and 22.7% was neutral, 13.6% agreed and a total of 15.9% strongly agreed. When asked to respond to the statement “Agricultural careers pay well”, 0% strongly disagreed, 0% disagreed, 20.9% was uncertain, 37.2% agreed and 41.9% strongly agreed with the statement. 50% of the respondents strongly disagreed with the affirmation “Agricultural careers are for people over 50 years of age”, 27.3% disagreed, 13.6% was uncertain, 9.1% agreed and 0% strongly agreed. 56.8% of the students surveyed strongly disagreed with “Agricultural careers require little to no skills”, 36.4% disagreed, 4.5% was uncertain, 2.3% agreed and 0% strongly agreed with the statement. A total of 2.3% of the respondents strongly disagreed with the statement, “Agricultural careers are labor intensive/require a lot of work”, 0% disagreed, 22.7% was uncertain, 36.4% agreed and 38.6% strongly agreed. 38.6% of the respondents strongly disagreed, 29.5% disagreed, 20.5% was uncertain, 6.8% agreed and 4.5% strongly agreed with the statement “Agricultural careers are for people who live in rural areas”. 0% strongly disagreed, 0% disagreed, 2.3% was uncertain, 27.9% agreed and 69.8% strongly agreed with the statement “There are many career opportunities in the field of agriculture”.



## Coursework and Competence

**Table 4.7: Questions with regards to Coursework and Competence**

Questions centered around students coursework and competence
Q 14: My agricultural classes are difficult.
Q 24: My agricultural classes provide me with the skills needed to succeed at the collegiate level
Q 27: I enjoy my science classes.
Q 28: I enjoy my math classes.
Q 29: I enjoy my language arts classes.

**Table 4.8: Breakdown of student responses regarding Coursework and Competence**

Question	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
Q 14:	25%	25%	31.8%	15.9%	2.3%
Q 24:	2.3%	2.3%	6.8%	40.9%	47.7%
Q 27:	4.5%	6.8%	31.8%	29.5%	27.3%
Q 28:	22.7%	6.8%	34.1%	20.5%	15.9%
Q 29:	9.1%	4.5%	25%	43.2%	18.2%

**Table 4.9: Breakdown of student responses regarding Coursework and Competence Con.**

Question	Mean	Mode	Std. Deviation	Variance
Q 14:	2.4	3.0	1.109	1.230
Q 24:	4.2	5.0	.878	.771
Q 27:	3.6	3.0	1.094	1.199
Q 28:	3.0	3.0	1.363	1.860
Q 29:	3.5	4.0	1.128	1.274

A total of 25% of the respondents strongly disagreed with the statement, “My agricultural classes are difficult”, 25% disagreed, 31.8% were uncertain, 15.9% agreed and 2.3% strongly agreed. 2.3% strongly disagreed with the statement “My agricultural classes provide me with the skills needed to succeed at the collegiate level”, 2.3% disagreed, 6.8% was neutral, 40.9% agreed and a total of 47.7% strongly agreed. When asked to rank the statement “I enjoy my science classes”, 4.5% strongly disagreed, 6.8% disagreed, 31.8% was uncertain, 29.5% agreed and 27.3% strongly agreed with the statement. 22.7% of the respondents strongly disagreed with the statement “I enjoy my

math classes”, 6.8% disagreed, 34.1% was uncertain, 20.5% agreed and 15.9% strongly agreed. A total of 9.1% of the respondents strongly disagreed with the statement, “I enjoy my language arts classes”, 4.5% disagreed, 25% was uncertain, 43.2% agreed and 18.2% strongly agreed.

### *Agriculture and Me*

**Table 4.10: Questions with regards to Agriculture and Me**

Questions centered around students opinions involving agriculture
Q 8: Agriculture is important to my survival.
Q 19: I can financially support my lifestyle with a career in agriculture.
Q 26: I plan to pursue a career in agriculture.
Q 30: I plan to attend an 1860/1890 Land Grant Collegiate Institution.
Q 31: The agricultural industry has a lot to offer me.

**Table 4.11: Breakdown of student responses regarding Agriculture and Me**

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q 8:	2.3%	0%	20.5%	15.9%	61.4%
Q 19:	2.3%	4.5%	9.1%	36.4%	47.7%
Q 26:	4.5%	4.5%	13.6%	20.5%	56.8%
Q 30:	4.5%	9.1%	65.9%	18.2%	2.3%
Q 31:	2.3%	0%	6.8%	38.6%	52.3%

**Table 4.12: Breakdown of student responses regarding Agriculture and Me Con.**

Question	Mean	Mode	Std. Deviation	Variance
Q 8:	4.3	5.0	.963	.928
Q 19:	4.2	5.0	.961	.924
Q 26:	4.2	5.0	1.132	1.283
Q 30:	3.0	3.0	.745	.556
Q 31:	4.3	5.0	.813	.661

When asked to rate the following statement, “Agriculture is important to my survival”, 2.3% strongly disagreed, 0% disagreed, 20.5% was uncertain, 15.9% agreed and 61.4% strongly agreed. A total of 2.3% strongly disagreed with the statement “I can financially support my lifestyle with a career in agriculture”, 4.5% disagreed, 9.1% was neutral, 36.4% agreed and a total of 47.7% strongly agreed. 4.5% of the respondents

strongly disagreed, 4.5% disagreed, 13.6% was uncertain, 20.5% agreed and 56.8% strongly agreed with the statement, “I plan to pursue a career in agriculture”. When asked about “attending an 1860/1890 land-grant collegiate institution ”, 4.5% strongly disagreed, 9.1% disagreed, 65.9% was uncertain, 18.2% agreed and 2.3% strongly agreed with the statement. 2.3% of the respondents strongly disagreed with the statement “The agricultural industry has a lot to offer me”, 0% disagreed, 6.8% was uncertain, 38.6% agreed and 52.3% strongly agreed.

### *Influence and Support*

**Table 4.13: Questions with regards to Influence and Support**

<b>Questions centered around students support and influence regarding agriculture</b>
Q 12: My parents/guardians encourage me to pursue a career in agriculture.
Q 18: My agricultural teacher(s) promote(s) agricultural careers.
Q 21: My guidance counselor has recommended that I pursue an agriculture related career.
Q 32: My friends plan to pursue a career in agriculture.
Q 33: My parents are supportive regardless of my career choice.
Q 34: Members of my family stress the importance of agricultural careers.

**Table 4.14: Breakdown of student responses regarding Influence and Support**

<b>Question</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
Q 12:	9.1%	11.4%	34.1%	18.2%	27.3%
Q 18:	0%	0%	4.5%	15.9%	79.5%
Q 21:	15.9%	20.5%	31.8%	25%	6.8%
Q 32:	2.3%	9.1%	31.8%	38.6%	18.2%
Q 33:	4.7%	14%	4.7%	16.3%	60.5%
Q 34:	36.4%	18.2%	31.8%	11.4%	2.3%

**Table 4.15: Breakdown of student responses regarding Influence and Support Con.**

<b>Question</b>	<b>Mean</b>	<b>Mode</b>	<b>Std. Deviation</b>	<b>Variance</b>
Q 12:	3.4	3.0	1.264	1.600
Q 18:	4.75	5.0	.533	.283
Q 21:	2.8	3.0	1.123	1.376
Q 32:	3.6	4.0	.969	.940
Q 33:	4.1	5.0	1.283	1.647
Q 34:	2.25	1.0	1.143	1.308

A total of 9.1% of the respondents strongly disagreed, 11.4% disagreed, 34.1% were uncertain, 18.2% agreed and 27.3% strongly agreed when asked to rank the following statement, “My parents/guardians encourage me to pursue a career in agriculture”. 0% strongly disagreed with the statement “My agricultural teacher(s) promote(s) agricultural careers”, 0% disagreed, 4.5% was neutral, 15.9% agreed and a total of 79.5% strongly agreed. A total of 15.9% strongly disagreed with the statement, “My guidance counselor has recommended that I pursue an agriculture related career”, 20.5% disagreed, 31.8% was uncertain, 25% agreed and 6.8% strongly agreed with the statement. 2.3% of the respondents strongly disagreed with the statement “My friends plan to pursue a career in agriculture”, 9.1% disagreed, 31.8% was uncertain, 38.6% agreed and 18.2% strongly agreed. A total 4.7% of the students surveyed strongly disagreed, 14% disagreed, 4.7% was uncertain, 16.3% agreed and 60.5% strongly agreed with the statement, “My parents are supportive regardless of my career choice”. 36.4% of the respondents strongly disagreed with the affirmation, “Members of my family stress the importance of agricultural careers”, 18.2% disagreed, 31.8% was uncertain, 11.4% agreed and 2.3% strongly agreed.

*Characteristics of Students Enrolled in Embedded Ag. Education Programs*

**Table 4.16: Questions with regards to Characteristics**

<b>Characteristics of students enrolled in Ag. Ed. programs</b>
Q 35: I have a supervised agricultural experience (SAE) project.
Q 36: Someone in my family has an agricultural related job.
Q 37: I have a mentor within the agricultural industry.
Q 38: I am involved in 4-H.
Q 39: I am involved in FFA.
Q 40: I have attended the National FFA convention.
Q 41: I serve on my FFA or 4-H chapter's leadership team.
Q 42: Recruiters from various colleges of agriculture visit my school.
Q 43: I participate in FFA and 4-H competitions.
Q 44: I participate in the Miami-Dade County Fair and Expo Animal or Horticulture contest.
Q 45: I volunteer at an animal shelter.
Q 46: I volunteer at an animal hospital.
Q 47: I volunteer at my school's farm.

**4.17: Breakdown of student responses regarding Characteristics**

<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>Mean</b>	<b>Mode</b>	<b>Std. Deviation</b>	<b>Variance</b>
Q 35:	60.5%	39.5%	1.3	1.0	.494	.245
Q 36:	18.6%	81.4%	1.8	2.0	.393	.155
Q 37:	41.9%	58.1%	1.5	2.0	.499	.249
Q 38:	11.9%	88.1%	1.8	2.0	.327	.107
Q 39:	88.4%	11.6%	1.1	1.0	.324	.105
Q 40:	18.2%	81.8%	1.8	2.0	.390	.152
Q 41:	29.5%	70.5%	1.7	2.0	.461	.213
Q 42:	23.8%	76.2%	1.7	2.0	.431	.186
Q 43:	58.1%	41.9%	1.4	1.0	.499	.249
Q 44:	65.9%	34.1%	1.3	1.0	.480	.230
Q 45:	25%	75%	1.75	2.0	.438	.192
Q 46:	4.5%	95.5%	1.95	2.0	.210	.044
Q 47:	72.7%	27.3%	1.2	1.0	.450	.203

Students were asked to indicate yes or no in accordance with the statement, “I have a Supervised Agricultural Experience (SAE) project”. A total of 60.5% of the respondents circled yes and 39.5% circled no. 18.6% of the respondents circled yes for the following statement, “Someone in my family has an agriculture-related job” and

81.4% of the respondents circled no. 41.9% circled yes in agreeance with the statement, “I have a mentor within the agricultural industry” and 58.1% circled no. A total of 11.9% of the students circled yes for the statement “I am involved in 4-H” and 88.1% circled no. 88.4% circled yes indicating “involvement in the National FFA organization” and 11.6% circle no. 18.2% of the respondents chose yes for the statement, “I have attended a National FFA convention” and 81.8% chose no. A total of 29.5% of the students circled yes for the statement, “I serve on my FFA or 4-H chapter’s leadership team” and a total of 70.5% circled no. 23.8% of the respondents said yes to the statement, “Recruiters from various colleges of agriculture visit my school” and 76.2% of the students said no. 58.1% alluded to “participating in FFA and 4-H competitions” while 41.9% did not. A total of 65.9% of the students’ circled yes-indicating “participation in the Miami-Dade County Youth Fair and Exposition animal or horticulture competitions” while 34.1% of the students circled no. A total of 25% of the students “volunteered at an animal shelter”, 75% did not. 4.5% of the students “volunteered at an animal hospital” while 95.5% of the students did not. 72.7% of the students indicated “volunteering at their schools farm” by circling yes and 27.3% chose no indicating they did not.

### Correlations

In this section the researcher attempted to measure relationships between variables. The correlations examined were guided by the research questions and include: (1) the existence of a relationship between career choice and parental and peer influence; (2) the existence of a relationship between extracurricular involvement and career choice; (3) the existence of a relationship between societal/peer pressure and career choice; (4) the existence of a relationship between race/ethnicity and career choice; and (5) the

existence of a relationship between career choice and industry demographical information.

### *Career Choice vs. Parental/Peer Influence*

The following question was measured (26) I plan to pursue a career in agriculture in conjunction with questions (11) My parents/guardians have a positive perception of agriculture and (17) My friends/peers have a positive perception of agriculture.

Item 26 and 11 produced a Chi-Square value of 32.717 with .008 significance, a likelihood ratio of 29.125 with .023 significance, a Phi value of .862 with .008 significance, a Cramer's V of .431 with .008 significance and a Contingency Coefficient of .653 with .008 significance. Not assuming the null hypothesis.

Item 26 and 17 produced a Chi-Square value of 25.360 with .064 significance, a likelihood ratio of 27.369 with .038 significance, a Phi value of .759 with .064 significance, a Cramer's V of .380 with .064 significance and a Contingency Coefficient of .605 with .064 significance. Not assuming the null hypothesis.

### *Career Choice vs. Extracurricular Involvement*

The following question was measured (26) I plan to pursue a career in agriculture in conjunction with questions (35) I have a Supervised Agricultural Experience (SAE) project, (36) Someone in my family has an agriculture-related job, (37) I have a mentor within the agricultural industry, (38) I am involved in 4-H, (39) I am involved in the National FFA Organization, (40) I have attended a National FFA convention, (41) I serve on my FFA or 4-H chapter's leadership team, (42) Recruiters from various colleges of agriculture visit my school, (43) I participate in FFA and 4-H competitions, (44) I participate in the Miami-Dade County Youth Fair and Exposition Animal or Horticulture

contest, (45) I volunteer at an animal shelter, (46) I volunteer at an animal hospital and (47) I volunteer at my school's farm.

Item 26 and 35 produced a Chi-Square value of 7.617 with .107 significance, a likelihood ratio of 8.963 with .062 significance, a Phi value of .421 with .107 significance, a Cramer's V of .421 with .107 significance and a Contingency Coefficient of .388 with .107 significance. Not assuming the null hypothesis.

Item 26 and 36 produced a Chi-Square value of 2.982 with .561 significance, a likelihood ratio of 4.766 with .312 significance, a Phi value of .263 with .561 significance, a Cramer's V of .253 with .561 significance and a Contingency Coefficient of .255 with .561 significance. Not assuming the null hypothesis.

Item 26 and 37 produced a Chi-Square value of 6.561 with .161 significance, a likelihood ratio of 8.178 with .085 significance, a Phi value of .391 with .161 significance, a Cramer's V of .391 with .161 significance and a Contingency Coefficient of .364 with .161 significance. Not assuming the null hypothesis.

Item 26 and 38 produced a Chi-Square value of 2.547 with .636 significance, a likelihood ratio of 4.002 with .406 significance, a Phi value of .246 with .636 significance, a Cramer's V of .246 with .636 significance and a Contingency Coefficient of .239 with .008 significance. Not assuming the null hypothesis.

Item 26 and 39 produced a Chi-Square value of 9.329 with .053 significance, a likelihood ratio of 7.973 with .093 significance, a Phi value of .466 with .053 significance, a Cramer's V of .466 with .053 significance and a Contingency Coefficient of .422 with .053 significance. Not assuming the null hypothesis.



Item 26 and 40 produced a Chi-Square value of 1.994 with .737 significance, a likelihood ratio of 2.568 with .633 significance, a Phi value of .213 with .737 significance, a Cramer's V of .213 with .737 significance and a Contingency Coefficient of .208 with .737 significance. Not assuming the null hypothesis.

Item 26 and 41 produced a Chi-Square value of 5.568 with .234 significance, a likelihood ratio of 8.305 with .081 significance, a Phi value of .356 with .234 significance, a Cramer's V of .356 with .234 significance and a Contingency Coefficient of .355 with .234 significance. Not assuming the null hypothesis.

Item 26 and 42 produced a Chi-Square value of 9.844 with .043 significance, a likelihood ratio of 9.256 with .055 significance, a Phi value of .484 with .043 significance, a Cramer's V of .484 with .043 significance and a Contingency Coefficient of .436 with .043 significance. Not assuming the null hypothesis.

Item 26 and 43 produced a Chi-Square value of 9.109 with .058 significance, a likelihood ratio of 10.595 with .032 significance, a Phi value of .460 with .058 significance, a Cramer's V of .460 with .058 significance and a Contingency Coefficient of .418 with .058 significance. Not assuming the null hypothesis.

Item 26 and 44 produced a Chi-Square value of 6.350 with .175 significance, a likelihood ratio of 7.034 with .134 significance, a Phi value of .394 with .175 significance, a Cramer's V of .394 with .175 significance and a Contingency Coefficient of .366 with .175 significance. Not assuming the null hypothesis.

Item 26 and 45 produced a Chi-Square value of 4.095 with .393 significance, a likelihood ratio of 5.129 with .274 significance, a Phi value of .305 with .393 significance,

a Cramer's V of .305 with .393 significance and a Contingency Coefficient of .292 with .393 significance. Not assuming the null hypothesis.

Item 26 and 46 produced a Chi-Square value of 1.592 with .810 significance, a likelihood ratio of 2.333 with .675 significance, a Phi value of .190 with .810 significance, a Cramer's V of .190 with .810 significance and a Contingency Coefficient of .187 with .810 significance. Not assuming the null hypothesis.

Item 26 and 47 produced a Chi-Square value of 18.377 with .001 significance, a likelihood ratio of 17.895 with .001 significance, a Phi value of .646 with .001 significance, a Cramer's V of .646 with .001 significance and a Contingency Coefficient of .543 with .001 significance. Not assuming the null hypothesis.

#### *Career Choice vs. Societal and Peer Pressure*

The following question was measured (26) I plan to pursue a career in agriculture in conjunction with questions (32) My friends plan to pursue a career in agriculture.

Item 26 and 32 produced a Chi-Square value of 16.592 with .412 significance, a likelihood ratio of 18.870 with .275 significance, a Phi value of .614 with .412 significance, a Cramer's V of .307 with .412 significance and a Contingency Coefficient of .523 with .412 significance. Not assuming the null hypothesis.

#### *Career Choice vs. Race/Ethnicity*

The following question was measured (26) I plan to pursue a career in agriculture in conjunction with item (50) Race/Ethnicity.

Item 26 and 50 produced a Chi-Square value of 29.194 with .896 significance, a likelihood ratio of 27.770 with .928 significance, a Phi value of .824 with .896

significance, a Cramer's V of .412 with .896 significance and a Contingency Coefficient of .636 with .824 significance. Not assuming the null hypothesis.

### *Career Choice vs. Industry Demographics*

The following question was measured (26) I plan to pursue a career in agriculture in conjunction with questions (2) Agricultural careers are for White men, (3) Agricultural careers are for women, (4) Agricultural careers pay well, (5) Agricultural careers are for people over 50 years of age, (6) Agricultural careers require little to no skills, (7) Agricultural careers are labor intensive/require a lot of work, (10) Agricultural careers are for people who live in rural areas, (13) There are people who look like me in the agricultural industry, (14) The agricultural industry is racially diverse and (20) There are many career opportunities in the field of agriculture.

Item 26 and 2 produced a Chi-Square value of 46.668 with .000 significance, a likelihood ratio of 19.764 with .231 significance, a Phi value of 1.030 with .000 significance, a Cramer's V of .515 with .000 significance and a Contingency Coefficient of .717 with .000 significance. Not assuming the null hypothesis.

Item 26 and 3 produced a Chi-Square value of 23.158 with .110 significance, a likelihood ratio of 26.861 with .043 significance, a Phi value of .725 with .110 significance, a Cramer's V of .363 with .110 significance and a Contingency Coefficient of .587 with .110 significance. Not assuming the null hypothesis.

Item 26 and 4 produced a Chi-Square value of 6.885 with .549 significance, a likelihood ratio of 7.823 with .451 significance, a Phi value of .400 with .549 significance, a Cramer's V of .283 with .549 significance and a Contingency Coefficient of .371 with .549 significance. Not assuming the null hypothesis.

Item 26 and 5 produced a Chi-Square value of 16.300 with .178 significance, a likelihood ratio of 16.892 with .154 significance, a Phi value of .609 with .178 significance, a Cramer's V of .351 with .178 significance and a Contingency Coefficient of .520 with .178 significance. Not assuming the null hypothesis.

Item 26 and 6 produced a Chi-Square value of 24.421 with .018 significance, a likelihood ratio of 10.893 with .538 significance, a Phi value of .745 with .018 significance, a Cramer's V of .430 with .018 significance and a Contingency Coefficient of .597 with .018 significance. Not assuming the null hypothesis.

Item 26 and 7 produced a Chi-Square value of 14.311 with .281 significance, a likelihood ratio of 15.959 with .193 significance, a Phi value of .570 with .281 significance, a Cramer's V of .329 with .281 significance and a Contingency Coefficient of .495 with .281 significance. Not assuming the null hypothesis.

Item 26 and 10 produced a Chi-Square value of 35.719 with .003 significance, a likelihood ratio of 32.138 with .010 significance, a Phi value of .901 with .003 significance, a Cramer's V of .450 with .003 significance and a Contingency Coefficient of .669 with .003 significance. Not assuming the null hypothesis.

Item 26 and 13 produced a Chi-Square value of 25.384 with .063 significance, a likelihood ratio of 28.429 with .028 significance, a Phi value of .760 with .063 significance, a Cramer's V of .380 with .063 significance and a Contingency Coefficient of .605 with .063 significance. Not assuming the null hypothesis.

Item 26 and 14 produced a Chi-Square value of 8.813 with .921 significance, a likelihood ratio of 10.314 with .850 significance, a Phi value of .448 with .921

significance, a Cramer's V of .224 with .921 significance and a Contingency Coefficient of .408 with .921 significance. Not assuming the null hypothesis.

Item 26 and 20 produced a Chi-Square value of 7.754 with .458 significance, a likelihood ratio of 8.079 with .426 significance, a Phi value of .425 with .458 significance, a Cramer's V of .300 with .458 significance and a Contingency Coefficient of .391 with .458 significance. Not assuming the null hypothesis.

## **Chapter V**

### **Summary, Conclusions, Implications, Recommendations and Reflections of the Researcher**

#### **Purpose**

The purpose of this research was to discover factors that influence Black and Latino high school students to pursue careers in agriculture.

#### **Objectives**

The research was lead by the following objectives: (1) Assess factors that influence Black and Latino high school students to pursue careers in agriculture; (2) Assess barriers that prevent Black and Latino high school students from pursuing careers in agriculture; (3) Identify characteristics of Black and Latino high school students that are interesting in pursuing an agricultural or related career; (4) Examine the relationship between career choice and extracurricular involvement for Black and Latino high school students; and (5) Discover if race, ethnic origin or background has any influence on career choice.

#### **Research Questions**

The following research questions were evaluated:

1. Do Black and Latino high school students make career decisions based parental and peer perceptions/beliefs?
2. Is there a relationship that exists between extracurricular involvement and career choice?
3. Do societal and peer pressures affect career choice?
4. Does race, ethnic origin or background have any influence on career choice?

5. Do Black and Latino high school students make career decisions based on industry demographics?

### **Hypothesis**

The following hypothesis was tested:

1. Black and Latino students do not make career decisions based on parental and peer and perceptions of agriculture.
2. There is no relationship between extracurricular involvement and career choice.
3. Societal and peer pressure do not affect career choice.
4. Race, ethnic origin and background do not influence career choice.
5. Black and Latino high school students do not make career decisions based on the demography of the agricultural industry.

### **Summary of Methods and Procedure**

#### *Summary of Methods*

The research questions were addressed by a descriptive correlational research design as the researcher attempted to discover relationship between variables and depict their strength and directions. Although five institutions were identified, only one school participated in the study and a comparison of all responses was conducted.

Students enrolled in high school agricultural education programs served as the unit of analysis, and the target population was high school students. Independent variables included race/ethnic background and experience/involvement whereas dependent variables were the factors of influence. Variables such as age, grade, gender and home location served as control variables for the purpose of this research.

The instrument used was modified and altered from a previous instrument used in a prior study, and featured three parts with questions surrounding agricultural literacy, factors influencing career choice, barriers to pursuing careers in agriculture, extracurricular involvement and demographical questions.

The instrument was assessed for validity by a panel of experts at The Pennsylvania State University. A pilot test was conducted using the questionnaire and produced a .70 statistical reliability.

The Don Dillman Total Design Method (TDM) was used to collect data, and was modified to meet the needs of the study.

This research met the compliance requirements set forth by the Office of Research Protections (ORP) at The Pennsylvania State University. The Institutional Review Board reviewed all items for the protection, rights and welfare for all participants.

#### *Summary of Procedure*

Institutions were identified by the researcher due to their accessibility to a greater number of Black and Latino student populations. Research approval was then received by The Pennsylvania State University's Institutional Review Board, and by the Miami-Dade County Public School Board's Research Review Committee.

A total of three schools declined participation in the study and the two participating schools were then followed up with. A packet was then mailed out to the primary agricultural instructor at each school containing participant recruitment forms, participant letters, informed consent forms and detailed instructions regarding the distribution of these materials. Surveys were only issued to students' who returned their informed consent form, and students were given six weeks to complete and return the



questionnaire. Additional students were given the opportunity to participate in the study provided that they turned in their informed consent form and follow-up reminders went out one week, three weeks and five weeks after the initial survey was received and all documents were either sent via U.S. Postal Service registered mail or hand delivered by the researcher.

The data was coded and computed using the Statistical Package for Social Science (SPSS). Data was examined using descriptive statistics, and means, modes, standard deviations, variances and frequencies were produced. Correlations (Pearson Product Moment) were used to test the significance of relationships involving dependence and were indicative of predicting relationship to be exploited by the researcher. One-sample t-tests were calculated, and used to compare means of the sample and the distribution of the means being tested.

### **Summary of Findings by Research Questions**

#### **Biographical data**

Females were more represented in the sample than males, a total of 70% were females and 30% were male.

Respondents' ages ranged from 14 years of age to 19 years of age and older. More students were 15 years of age, totaling up to 25.6%.

Majority of the participants reported being in the 9<sup>th</sup> and 12<sup>th</sup> grade level. A total of 32.6% of the students were in the 9<sup>th</sup> grade and 37.2% were in the 12<sup>th</sup> grade.

A total of 74.4% of the students that participated in the study reported living in an urban area. 10.3% reported living in a rural area and 15.4% reported living in a suburban area.

Participants were representative of a number of racial and ethnic groups. 27.9% reported being Hispanic – Other and 23.3% reported being Other. Individuals that chose Hispanic – Other were nationals of a number of Hispanic nations, and individuals indicating they were Other were multiracial, belonging to a number of racial/ethnic groups.

### *Perceptions of Agriculture*

There were more respondents who were neutral with the statement “Agriculture is farming”. Totalling up to 28.6%, 21.4% strongly disagreed with the statement and 21.4% disagreed. A total of 75% of the participants strongly agreed with the statement “Agriculture is important to the U.S. economy”. 20.5% of the participants agreed with the statement. More respondents were neutral about the statement “My parents/guardians have a positive perception of agriculture” as indicated by 31.8%. 29.5% of agreed with the statement and 18.2% strongly agreed with the statement. A total of 39.5% reported being neutral about the statement “People in the agricultural industry look like me”. 25% disagreed and 15.9% strongly disagreed. 41.9% agreed and 32.6% strongly agreed with the statement, “Anyone can pursue a career in agriculture”. A total of 27.3% indicated being neutral about the statement “The agricultural industry is racially diverse”. 20.5% strongly disagreed, 20.5% disagreed and 18.2% strongly agreed with the statement. 29.5% agreed and 29.5% strongly agreed with the statement “My friends/peers have a positive perception of agriculture”. 25% indicated being neutral with the statement. A total of 47.7% reported being neutral with the statement “The portrayal of agriculture in the media is positive”. 45.5% were neutral about the statement “The media influences my

perceptions of agriculture”. A total of 63.6% of the students in the sample strongly agreed to “Have a positive perception of agriculture”.

### *Perceptions of Agricultural Careers*

A total of 65% of respondents strongly disagreed with the statement “Agriculture careers are for white men”. 34.1% strongly disagreed with the statement “Agricultural careers are for women”. 22.7% reported being neutral with the statement. 41.9% strongly agreed with the statement “agricultural careers pay well”. A total of 37.2% agreed with the statement. 50% of the participants strongly disagreed with the statement “Agricultural careers are for people over 50 years of age”. A total of 56.8% strongly disagreed with the statement “Agricultural careers require little to no skills”. 36.4% agreed and 28.6% strongly agreed with the statement “Agricultural careers are labor intensive/require a lot of work”. A total of 38.6% strongly disagreed with the statement “Agricultural careers are for people who live in rural areas”, and 29.5% disagreed. 69.8% of the students in the sample strongly agreed with statement “There are many career opportunities in the field of agriculture”.

### *Coursework and Competence*

A total of 31.8% of the students in the sample reported they were neutral with the statement “My agricultural classes are difficult”. 25% strongly disagreed with the statement and 25% disagrees with the statement. 47.7% strongly agreed and 40.9% agreed with the statement “My agriculture classes provide me with the skill needed to succeed at the collegiate level”. A total of 31.8% were indicated they were neutral with the statement “I enjoy my science classes”. 29.5% agreed and 27.3% strongly agreed with

the statement. 34.1% were neutral with the statement “I enjoy my math classes”. A total of 43.2% indicated agreeing with the statement “I enjoy my language arts classes.

### *Agriculture and Me*

A total of 47.7% strongly agreed with the statement “Agriculture is important to my survival”. A total of 36.4% agreed with the statement. 47.7% strongly agreed and 36.4% agreed with the statement “I can financially support my lifestyle with a career in agriculture”. A total of 56.8% of the respondents strongly agreed with the statement “I plan to pursue a career in agriculture”. 65.9% indicated being neutral with the statement “I plan to attend an 1860/1890 land-grant institution”. A total of 52.3% of the students in the sample agreed with the statement “The agricultural industry has a lot to offer”.

### *Influence and Support*

A total of 34.1% of the respondents sampled in the study indicated being neutral with the statement “My parents/guardians encourage me to pursue a career in agriculture”. 27.3% strongly agreed with the statement. 79.5% strongly agreed with the statement “My agricultural teacher(s) promote agricultural careers”. A total of 31.8% reported being neutral with the statement “My guidance counselor has recommended that I pursue a career in agriculture”. A total of 38.6% of the participants agreed with the statement “My friends plan to pursue a career in agriculture”. 60.5% agreed with the statement “My parents are supportive regardless of my career choice”. A total of 36.4% strongly disagreed with the statement “Members of my family stress the importance of agriculture”.

### *Characteristics of Students Enrolled in Embedded Ag. Education Programs*

A total of 60.5% of the students in the sample indicated having an “SAE project”. 81.4% responded “No” to having someone in their family with an agricultural related job. A total of 58.1% indicated that they did not have a mentor within the agricultural industry. A total of 88.1% of the participants were not involved in 4-H. 88.4% of the students were in involved in FFA. A total of 81.8% reported having attended the National FFA Convention. 70.5% indicated that they did not serve on their FFA or 4-H chapter’s leadership team. A total of 76.2% reported that recruiters from various colleges of agriculture had not visited their school. A total of 58.1% indicated participating in FFA and 4-H competitions. 65.9% participated in Animal and Horticulture contest at the Miami-Dad County Fair and Exposition. A total of 75% indicated they did not volunteer at animal shelters. 95.5% indicated not volunteering at animal hospitals. A total of 72.7% of the students in the sample volunteers at their school’s farm.

### *Correlations*

#### *Career Choice vs. Parental/Peer Influence*

Item 26 and 11 produced a Chi-Square value of 32.717 with .008 significance. Item 26 and 17 produced a Chi-Square value of 25.360 with .064 significance

#### *Career Choice vs. Extracurricular Involvement*

Item 26 and 35 produced a Chi-Square value of 7.617 with .107 significance. Item 26 and 36 produced a Chi-Square value of 2.982 with .561 significance. Item 26 and 37 produced a Chi-Square value of 6.561 with .161 significance. Item 26 and 38 produced a Chi-Square value of 2.547 with .636 significance. Item 26 and 39 produced a Chi-Square value of 9.329 with .053 significance. Item 26 and 40 produced a Chi-Square value of

1.994 with .737 significance. Item 26 and 41 produced a Chi-Square value of 5.568 with .234significance. Item 26 and 42 produced a Chi-Square value of 9.844 with .043 significance. Item 26 and 43 produced a Chi-Square value of 9109 with .058 significance. Item 26 and 44 produced a Chi-Square value of 6.350 with .175 significance. Item 26 and 45 produced a Chi-Square value of 4.095 with .393 significance. Item 26 and 46 produced a Chi-Square value of 1.592 with .810 significance. Item 26 and 47 produced a Chi-Square value of 18.377 with .001 significance.

#### *Career Choice vs. Societal and Peer Pressure*

Item 26 and 32 produced a Chi-Square value of 16.592 with .412 significance.

#### *Career Choice vs. Race/Ethnicity*

Item 26 and 50 produced a Chi-Square value of 29.194 with .896 significance.

#### *Career Choice vs. Industry Demographics*

Item 26 and 2 produced a Chi-Square value of 46.668 with .000 significance. Item 26 and 3 produced a Chi-Square value of 23.158 with .110 significance. Item 26 and 4 produced a Chi-Square value of 6.885 with .549 significance. Item 26 and 5 produced a Chi-Square value of 16.300 with .178 significance. Item 26 and 6 produced a Chi-Square value of 24.421 with .018 significance. Item 26 and 7 produced a Chi-Square value of 14.311 with .281 significance. Item 26 and 10 produced a Chi-Square value of 35.719 with .003 significance. Item 26 and 13 produced a Chi-Square value of 25.384 with .063 significance. Item 26 and 14 produced a Chi-Square value of 8.813 with .921 significance. Item 26 and 20 produced a Chi-Square value of 7.754 with .458 significance.

## Conclusions

A convenience sample was used to assess the factors that influence Black and Latino high school students to pursue careers in agriculture. The following conclusions presented are specific to the sample and should not be generalized to the larger population.

Majority of the students enrolled in the embedded agricultural education program are females and live in urban areas. Students are predominantly Black, Hispanic and Multiracial representing a number of ethnicities and nationalities.

Students are surrounded by friends/peers who have a positive perception of agriculture, and their parents/guardians appear to have a positive perception as well. There are more students who don't believe agriculture is farming. These students do believe that agriculture is vital and an important part of the U.S. economy. Few students think there are people who look like them within the agricultural industry. Not many students believe that the agricultural industry is racial diverse. Most students are indifferent about the portrayal of agriculture in the media, and its influence on their perception of agriculture. Students do feel anyone can pursue career agriculture, and have a positive perception of agriculture.

Students believe there are a plethora of career opportunities in the agricultural industry. They do think agricultural careers pay well, and do not believe careers in agriculture require little to no skills. These students do believe careers in agriculture require a lot of work. Few students feel that agriculture careers are for women. These students don't believe agricultural careers are for white men, nor do they believe they are for people over 50 years of age and those that live in rural areas.

Students enrolled in this program do enjoy their language arts classes. Most enjoy their sciences courses, but not many enjoy their math classes. Few students believe their agriculture courses are difficult. Almost all students believe that their coursework in agriculture provide them with the skills they need to succeed at the university level.

Students feel agriculture is important to their survival. They believe they can financially support their lifestyles with a career in agriculture. Almost all of the students think the agricultural industry has a lot to offer them. A great majority was indifferent about pursuing an education at an 1860/1890 land-grant institution. Students do feel the industry has a lot to offer them.

While some students are encouraged by their parents/guardians to pursue a career in agriculture, almost all students have parents whom are supportive regardless of their career choice. Few students have family members that stress the importance of agriculture, but do have peers that plan to pursue a career in agriculture. Their teachers do promote agricultural careers. Some students have guidance counselors that promote agricultural careers.

Most students are involved in the National FFA organization, while very few are involved in 4-H. Only a few students have attended a National FFA convention, and there are a handful of students who serve on their FFA or 4-H chapters leadership team. Majority of the students enrolled in this program participated in FFA or 4-H competitions. A number of students have an SAE project and participated in the Miami-Dade County Fair and Expo animal or horticulture competitions. Most students do volunteer on their school's farm. Hardly any students volunteer at an animal hospital while very few volunteer at an animal shelter. Most students did not have a family



member employed within the agricultural industry. A great majority reported not having a mentor within the agricultural industry, and very few students indicated recruiters have visited their institutions.

On the basis of question (11) My parents/guardians have a positive perception of agriculture we reject the null hypothesis with a 5% chance of probability error, and conclude students make career decisions based on parental perceptions of agriculture. On the basis of question (17) My friends/peers have a positive perception of agriculture, we fail to reject the null hypothesis and conclude students do not make career decisions based on peer perceptions of agriculture.

On the basis of question (35) I have a Supervised Agricultural Experience (SAE) project we fail to reject the null hypothesis. On the basis of question (37) I have a mentor within the agricultural industry we fail to reject the null hypothesis. On the basis of question (38) I am involved in 4-H we fail to reject the null hypothesis. On the basis of (39) I am involved in the National FFA Organization we fail to reject the null hypothesis. On the basis of question (40) I have attended a National FFA convention we fail to reject the null hypothesis. On the basis of (41) I serve on my FFA or 4-H chapter's leadership team we fail to reject the null hypothesis. On the basis of question (43) I participate in FFA and 4-H competitions we fail to reject the null hypothesis. On the basis of question (44) I participate in the Miami-Dade County Youth Fair and Exposition Animal or Horticulture contest we fail to reject the null hypothesis. On the basis we fail to reject the null hypothesis. On the basis of question (45) I volunteer at an animal shelter we fail to reject the null hypothesis. On the basis of question (46) I volunteer at an animal hospital

we fail to reject the null hypothesis. We can conclude that there is no relationship between extracurricular involvement and career choice.

On the basis of question (36) Someone in my family has an agriculture-related job we reject the null hypothesis with a 5% chance of probability error. On the basis of question (42) Recruiters from various colleges of agriculture visit my school we reject the null hypothesis with a 5% chance of probability error. On the basis of question (47) I volunteer at my school's farm we reject the null hypothesis with a 5% chance of probability error. We conclude that there is a relationship between extracurricular involvement and career choice.

On the basis of question (32) My friends plan to pursue a career in agriculture we fail to reject the null hypothesis, and conclude societal and peer pressures do not affect career choice.

On the basis of item (50) Race/Ethnicity we fail to reject the null hypothesis, and conclude race, ethnic origin and background do not have any influence on career choice.

On the basis of question (3) Agricultural careers are for women we fail to reject the null hypothesis. On the basis of question (4) Agricultural careers pay well we fail to reject the null hypothesis. On the basis of question (5) Agricultural careers are for people over 50 years of age we fail to reject the null hypothesis. On the basis of question (7) Agricultural careers are labor intensive/require a lot of work we fail to reject the null hypothesis. On the basis of item (13) There are people who look like me in the agricultural industry we fail to reject the null hypothesis. On the basis of item (14) The agricultural industry is racially diverse we fail to reject the null hypothesis. On the basis of item (20) There are many career opportunities in the field of agriculture we fail to

reject the null hypothesis. We can conclude Black and Latino students' do not make career decisions based on the demographics of the agricultural industry.

On the basis of question (2) Agricultural careers are for White men school we reject the null hypothesis with a 5% chance of probability error. On the basis of question (6) Agricultural careers require little to no skills school we reject the null hypothesis with a 5% chance of probability error. On the basis of questions (10) Agricultural careers are for people who live in rural areas school we reject the null hypothesis with a 5% chance of probability error. We can conclude Black and Latino students' make career decisions based on the demographics of the agricultural industry.

### **Implications**

Students' lack of exposure to agriculture outside of their embedded programs may have caused their impartial beliefs about agriculture itself, and the possibility of regarding it as farming.

Their response to the question, "There are people who look like me in the agricultural industry" followed a normal distribution with most of the students Disagreeing with the statement, followed by those who were neutral. The same distribution was almost experienced with the questions, "The agricultural industry is racially diverse". Perhaps students are using their personal accounts and interactions as a means to respond to questions.

Sampled students were both impartial about the media's portrayal of agriculture and its effect on their perception. Students probably were not exposed to extensive sources of media in which these sources could have no influence on their perception of agriculture.

Although almost all students believed agricultural careers were not for white men, their beliefs may be manifested into the fact that the population in which they reside in is majority Non-White as they only account for 16.3% of the population. Their interactions with individuals employed by the industry may resemble the demographics of the area they live in.

It is interesting that few students believed “Agricultural careers are for women” when 70% of the sample were females. One can only be led to believe that students’ interactions have been with industry personnel who are traditionally males.

Students’ beliefs about the labor intensity of agricultural careers may be a result of exposure to traditional production agricultural careers. More importantly, the program in which these students are enrolled comprises of three options with include pre-vet/vet assisting, animal science and horticulture.

Almost all students believed their classes provided them with the skills need to succeed at they university level. However, a number of students were impartial about the difficulty of their agriscience classes, and if they enjoyed their science and math classes. Careers in agriculture encompass a great deal of skills and include competence in science, math and writing. Their impartial beliefs about the difficulty of their agricultural classes may be due to limited exposure or limited understanding of content in other courses.

A great majority of the students in the sample were unsure about attending an 1860/1890 land grant collegiate institution. It is the belief of the researcher that students don’t understand what an 1860/1890 land grant institution is, and its role in the development and preparations of individuals who go on to pursue agricultural careers.

While students may be encouraged by their parents/guardians to pursue careers in agriculture, they may have members of their extended family who may not support their careers aspirations or understand what agriculture and a career in agriculture entails. Additionally, not all students had guidance counselors who promoted careers in agriculture. Perhaps a guidance counselor who is well rounded in their role, and aware of opportunities for all students.

Almost students indicated that someone in their family did not have an agricultural related job. A great majority of the students also indicated not volunteering at an animal shelter or animal hospital. It is clear why a number of students don't have a mentor within the agricultural and related industry, as students are not immersed in an environment that will allow them to build relationships with others that could give way to mentors in the field.

Nearly all students reported no interaction with recruiters from various colleges of agriculture. This could be why students are impartial about attending an 1860/1890 land grant institution as many of them probably don't know that colleges and universities like these exist and are unaware of the opportunities such institutions can afford them. Lack of exposure to recruiters could also make the difference between whether or not someone pursues a post secondary education.

The findings suggest several courses of action if we are to increase the number of Blacks and Latinos employed by the U.S. agricultural industry. Students sampled and enrolled in the embedded agricultural education program at William H. Turner Technical Arts High School have a positive perception of agriculture, are surrounded by peers who have positive perceptions of agriculture and have parents that are supportive regardless of

their career aspirations and choices. They believe agriculture is vital and important to our economy, and most of them plan to pursue careers in agriculture.

The future of the agricultural industry is highly dependent upon the involvement and participation of individuals of color, and keys to increasing the number of Blacks and Latinos in the field of agriculture include: (1) exposing students to professionals in the industry who can serve as possible mentors and assist them with their development in the field; (2) recruiters of various colleges and universities with colleges of agriculture visiting schools with embedded agricultural programs as majority of the students indicated no interaction with recruiters and were indifferent about attending 1860/1890 land-grant institutions; and (3) providing all students with access to guidance counselors that are resourceful and could provide students with information needed for them to advance and matriculate throughout their educational career.

Students do make career decisions based on their parents' perceptions of agriculture, and this may be a result of parents' overall authority or their inability to financially support an education they are not fond of. Students who tend to be more involved in extracurricular activities are more interested in pursuing a career in agriculture. Spending time on their school's farm may evoke a passion and love for agriculture, and in turn encourage them to pursue a career in agriculture. Consequently, not having immediate access to sources of information by way of family ties or a recruiter could produce opposite results. We can imply that students make career decisions based on some of the industry's demographics. Students' beliefs on whether or not agricultural careers are for white men, labor intensive and for people who live in rural areas do influence their choices.

It is imperative that we expose these youth to a plethora careers and employment opportunities that the agricultural industry has to offer, and the individuals who can assist them with their educational and career aspirations. We must work to improve the industries demographics as it relates to race, ethnic backgrounds and nationality. A student's decision to choose a career may be deeply rooted in conformism as they attempt to not disrupt cultural or familial norms. We must also attempt to gain the support of, and appeal to the students' family. It is then when these are combined, that we will have better success in attracting persons from Black and Latino populations in agricultural careers.

### **Recommendations for Future Research**

1. This study should be replicated to include a larger population of students to participate in the research.
2. This study should be replicated to include all high school students and not just students enrolled in embedded agricultural programs.
3. This study should be replicated to include a representative sample of male high school students.
4. This study should be replicated to include students from a number of other races, ethnic backgrounds and nationalities.
5. This study should be replicated qualitatively and focus on the factors why students chose not to pursue a career in agriculture.
6. Future research should include a follow-up study of first year students at colleges and universities.

## **Researcher's Reflections**

The researcher is a first generation American whose parents are both Haitian. Growing up in urban Miami – Dade, FL, I was afforded a number of experiences and opportunities as a young adolescent male. I was very active and involved in my community, and participated in optimistic athletics, 4 – H and FFA.

I am a graduate of William. H. Turner Technical Arts High School where I was a student in the Agriscience Academy on the Veterinary Assistant track. During my time in high school, I was active in the school community, a member and officer of the Veterinary Assistant Club, on the local livestock judging team, had a series of SAE animal projects, and competed in the local, neighboring and state fairs annually. During this time, I also secured and completed an externship with a local animal hospital in the area.

I was extremely passionate about animal agriculture, and really wanted to pursue veterinary medicine. Due to experiences in high school, I also aspired to work with the federal entity that was responsible for developing and executing policies for food, agriculture and forestry, the United States Department of Agriculture (U.S.D.A.).

After high school, I enrolled in the Department of Animal Sciences at the University of Florida pursuing a degree in Animal Sciences with an emphasis in Beef Cattle. Although I served as a College of Agriculture and Life Sciences (CALS) Ambassador, Florida Opportunity Scholars Academy of Leadership (FOSAL) Mentor and Resident Assistant, I felt immensely disconnected from the environment in which I was immersed. Typically, I was almost always the only person of color in my program's related courses, and was always the only male of color. Although I battled with the



differences in beliefs and overall life with my peers, I persevered on. I still carry fond memories of never fitting in, as I was a city boy who always wore shorts and sneakers while working cattle.

There were a number of times where I questioned my involvement and role in my degree program, and the realities of pursuing a career in agriculture. It wasn't until my run in with the National Society for Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS) when I realized that there are people of color employed by the agricultural industry, and the industry was a place for likeminded individuals. My interactions and the relationships created over time gave way to a number of internships with the U.S.D.A. and lifelong friendships.

After completion of my MS, I went on to pursue a master's degree at The Pennsylvania State University. It was then that my entire educational experience came full circle and I was compelled to discover the factors that influence Black and Latino high school students to pursue a career in agriculture. One day it struck me that out of 100 plus students in the agriscience academy, I was the only male and one of a few students who went on pursue a post-secondary education in agriculture. Based on my own experiences, I knew that the experiences of Blacks and Latinos would differ greatly from others groups, and focused on these populations as a result. It was then that I realized I was destined to further study this topic and given the inspiration for this research. In essence, my research was framed by questions and concerns I had of myself and those who I knew were coming behind me.

## Chapter VI

### Comparative Analysis

A comparative analysis was constructed in an attempt to observe if there were differences and or similarities in the opinions and beliefs of high school students as it relates to their perceptions of agriculture, and the capacity for employment within the agricultural industry. The responses of two groups were examined, both of which were from areas with high populations of people of color.

#### *Group A vs. Group B*

Group A is a sample of high school students in Miami, Florida that are representative of a very colorful America whose immigrant status and historical associations have been manifested into their opinions and beliefs surrounding agriculture. Group B is a sample of high school students from two of the most rural areas in Limpopo, South Africa facing a number of social and economic challenges whose perceptions of agriculture are rooted in the social context in which they live.

#### *Frame of Reference*

Negative stigmas seem to control public opinion, and both groups have been known to have negative perceptions of agriculture. These perceptions are fixed within opinions and beliefs tied to their homeland. Youth overlook career opportunities in agriculture because of its association to their poor perception. In the U.S., the demand for ethnic minorities in the field of agriculture exceeds its supply; opportunities for people of color in agricultural fields continue to expand but the number of those pursuing agriculture careers continues to decline (Larke & Jones, 2001, p. 39). In South Africa, though there exist an assortment of employment opportunities within agriculture in rural

areas, most youth find them unattractive and not appealing to engage in (Webster, 2012; Webster, Dumas, & Taylor, 2014). Youth that are discouraged present elements for socio-economic disasters (Webster, Dumas, & Taylor, 2014). Adolescents are deeply impacted by the world around them, and the circumstances that are present in both areas and countries could have a negative impact on the futures and expectations of our youth.

#### *Grounds for Comparison*

These two populations of interest were chosen due to the fact they involved high school students, took place in areas with agricultural activity and involve high levels of people of color. More importantly, both groups have historically had alike perceptions of agriculture and similar capacities for employment within the agricultural industry.

#### *Thesis*

The researcher believed that both Group A and B would have alike responses as it relates to their perceptions of agriculture, agricultural literacy, interest in agricultural careers, and barriers to enrollment in agricultural classes and careers. These similarities are more than likely due to the stigmas associated with agriculture that have controlled public opinion in both groups.

#### *Organizational Scheme*

Descriptive statistics were computed for both groups. Means, modes, standard deviations, variances and frequencies will be reported. The following statements and their responses will be evaluated for group A in conjunction with similar statements from group B:

#### Group A Statements to be Evaluated

1. Agriculture is farming or ranching.

2. Agriculture careers are for women.
3. Agricultural careers pay well.
4. Agricultural careers require little to no skills.
5. Agricultural careers are for people who live in rural areas.
6. My agricultural teacher(s) promote agricultural careers.
7. The media influence my perception of Agriculture.
8. My agricultural classes provide me with the competencies I need to succeed at the university level.
9. I have a positive perception of agriculture.
10. I plan to pursue a career in agriculture.
11. My friends plan to pursue a career in agriculture
12. Members of my family stress the importance of agricultural careers.

(See Appendix A for detailed view of questionnaire)

Group B Statements to be Evaluated

1. Agriculture is essentially farming.
2. Agriculture careers are for mostly women.
3. Agriculture careers pay well.
4. Agriculture is for people who live in rural areas.
5. I have a favorable perception of people in agricultural careers.
6. The media influenced my perception of agriculture.
7. Agriculture classes provide me with competencies I need to succeed in university.
8. My parents would be reluctant to allow me to enroll in agriculture classes.
9. Agriculture careers require more muscle than brain.

10. I am considering a career in agriculture.
11. My family stresses the importance of agriculture.
12. My friends have expressed interest in agriculture.

Additionally, the demographical areas in which participants lived in will be used to examine if there are differences that exist due to home location.

### *Findings*

There were a total of  $n = 44$  students represented in the sample of Group A. Majority of the respondents were female which composed of 70% of the population and the other 30% were males. All of the respondents were high school students in grades 9<sup>th</sup> – 12<sup>th</sup>, and their ages ranged from 14 years old to 19 years of age and older.

Respondents were representative of a number of racial/ethnic groups that include Hispanic – Cuban, Hispanic – Puerto Rican, Hispanic – Dominican, Black – African, Black – African American, Black – Haitian, Black – Jamaican and Black – Bahamian. There were also a number of students who identified as being multiracial, belonging to more than one racial/ethnic group.

All participants identified as living in one of the following residential areas: Rural, Suburban and Urban. A total of 10.3% of the respondents reported living in a rural area, 15.4% reported living in a suburban area and 74.4% reported living in an urban area.

A total of 21.4% strongly disagreed with the statement “Agriculture is farming”, 21.4% disagreed, 28.6% was uncertain, 19% agreed and 9.5% strongly agreed with the statement. 34.1% strongly disagreed with the statement “Agricultural careers are for women”, 13.6% disagreed, and 22.7% was neutral, 13.6% agreed and a total of 15.9%

strongly agreed. A total of 0% strongly disagreed with the statement “Agricultural careers pay well”, 0% disagreed, 20.9% was uncertain, 37.2% agreed and 41.9% strongly agreed with the statement. 56.8% of the respondents strongly disagreed with “Agricultural careers require little to no skills”, 36.4% disagreed, 4.5% was uncertain, 2.3% agreed and 0% strongly agreed with the statement. 38.6% of strongly disagreed with the statement “Agricultural careers are for people who live in rural areas”, 29.5% disagreed, 20.5% was uncertain, 6.8% agreed and 4.5% strongly agreed. A total of 0% strongly disagreed with the statement “My agricultural teacher(s) promote(s) agricultural careers”, 0% disagreed, 4.5% was neutral, 15.9% agreed and a total of 79.5% strongly agreed. 18.2% of the respondents strongly disagreed with the statement “The portrayal of agriculture in the media is positive”, 13.6% disagreed, 45.5% was uncertain, 22.7% agreed and 0% strongly agreed. A total of 2.3% strongly disagreed with the statement “My agricultural classes provide me with the skills needed to succeed at the collegiate level”, 2.3% disagreed, 6.8% was neutral, 40.9% agreed and a total of 47.7% strongly agreed. 4.5% of the respondents strongly disagreed with having “a positive perception of agriculture”, 0% disagreed, 2.3% was uncertain, 29.5% agreed and 63.6% strongly agreed. A total of 4.5% of the respondents strongly disagreed with the statement “I plan to pursue a career in agriculture”, 4.5% disagreed, 13.6% was uncertain, 20.5% agreed and 56.8% strongly agreed with the statement. 2.3% of the respondents strongly disagreed with the statement “My friends plan to pursue a career in agriculture”, 9.1% disagreed, 31.8% was uncertain, 38.6% agreed and 18.2% strongly agreed. A total of 36.4% strongly disagreed with the affirmation, “Members of my family stress the importance of agricultural careers”, 18.2% disagreed, 31.8% was uncertain, 11.4% agreed and 2.3% strongly agreed.

There was a total of  $n = 26$  students represented in Group B. 76% of the respondents in the sample were female whereas 24% identified as being male. All of the respondents were high school students in grades 9<sup>th</sup> – 12<sup>th</sup>, but there was no account for their ages.

Although all participants resided in Limpopo, South Africa, there is no record of the race or ethnic groups they belonged to.

Respondents identified as living in one of the following residential areas: Farm, Village, Township and Town/City. A total of 7.7% of the respondents reported living on a farm area, 26.9% reported living in a village, 46.2% reported living in a Township and 19.2% reported living in a town/city.

A total of 11.5% strongly disagreed with the statement “Agriculture is essentially farming”, 3.8% disagreed, 11.5% was uncertain, 38.5% agreed and 34.6% strongly agreed with the statement. 38.5% strongly disagreed with the statement “Agricultural careers are for mostly women”, 34.6% disagreed, and 15.4% was uncertain, 7.7% agreed and a total of 3.8% strongly agreed. A total of 8% strongly disagreed with the statement “Agricultural careers pay well”, 4% disagreed, 28% was uncertain, 20% agreed and 40% strongly agreed with the statement. 32.0% of the respondents strongly disagreed with “Agricultural careers require more muscle than brain”, 32.0% disagreed, 20% was uncertain, 16% agreed and 0% strongly agreed with the statement. 61.5% of strongly disagreed with the statement “Agricultural careers are for people who live in rural areas”, 11.5% disagreed, 0% was uncertain, 7.7% agreed and 19.2% strongly agreed. A total of 0% strongly disagreed with the statement “I have a favorable perception of people in agriculture careers”, 0% disagreed, 28% was uncertain, 44% agreed and a total of 28%

strongly agreed. 8% of the respondents strongly disagreed with the statement “The media influenced my perception regarding agriculture”, 24% disagreed, 12% was uncertain, 44% agreed and 12% strongly agreed. A total of 12.5% strongly disagreed with the statement “Agriculture classes provide me with the competencies I need to succeed in university”, 0% disagreed, 16.7% was uncertain, 58.3% agreed and a total of 12.5% strongly agreed. 3.8% of the respondents strongly disagreed with the statement “I am considering a career in agriculture”, 15.4% disagreed, 38.5% was uncertain, 23.1% agreed and 19.2% strongly agreed. A total of 7.7% strongly disagreed with the statement “My teachers stress the importance of agriculture” 26.9% disagreed, 30.8% was uncertain, 26.9% agreed and a total of 7.7% strongly agreed. 12% of the respondents strongly disagreed with having “My family stresses the importance of agriculture”, 36.0% disagreed, 32% was uncertain, 8% agreed and 12% strongly agreed. A total of 7.7% strongly disagreed with the affirmation, “My friends have expressed interest in agriculture”, 19.2% disagreed, 11.5% was uncertain, 26.9% agreed and 34.6% strongly agreed.

### *Linkages*

While few students in Group A believed that “Agriculture was farming”, majority of the students in Group B believed “Agriculture was farming”. There were few students in both Group A and Group B to believe “Agricultural careers are for women”. Almost all students in Group A and B feel “Agricultural careers pay well” whereas few students were undecided in both groups. Few students in Group A believe “Agriculture careers require little to no skills” in accordance with Group B where few students felt “Agricultural careers require more muscle than brain”. Most students in Group A and B



don't believe "Agricultural careers are for people who live in rural areas", however there were more students in Group B to agree with this statement than students in Group A.

Most students in Group A have "Positive perception of agriculture" and most students in Group B have "Favorable Perceptions of Agriculture", but there were far more students in Group A to agree with the statement. Almost all students in Group A believe their "Teachers promote agricultural careers", while few students in Group B believe their "Teachers stress the importance of agriculture careers". Most students in Group A were undecided about "the media influencing their perception of agriculture", and most students in Group B believe the media influenced their "Perceptions of agriculture".

Almost all students in Group A believe their "Agricultural classes provide them with the skills needed to succeed at the collegiate level" and majority of the students in Group B believe their "Agriculture classes provide them with the competencies needed to succeed in university". Almost all of the students in Group A "Plan to pursue a career in agriculture" while fewer students in Group B than in Group A are "Considering a career in agriculture". Although some students in Group A were undecided about their "Friends planning to pursue a career in agriculture", most students agreed with the statement. Most students in Group B believed their "Friends have expressed interest in agriculture". Very few students in Groups A and B felt their "Family stresses the importance of agriculture".

### *Conclusion and Implication*

The following conclusions are specific to the samples used in this content analysis. Both groups seem to have a positive perception of agriculture, feel their coursework will prepare them for success at the university level and think careers in

agriculture pay well. However, the activity of the agriculture industry in Limpopo, South Africa has an influence on the beliefs of youth in the area.

Majority of the students in Group B believe agriculture is farming. A possible explanation for this is media's influence on their beliefs, and a lack of exposure to other sources of information both within and outside of their communities. Students may view agricultural through a traditional lens, and may believe agricultural careers are for men as their interactions may have been predominantly with males employed by the industry.

Students' perception of agriculture in Group B may be shaped by agricultural activity in that area and by the media. Perhaps the students in Group B have been exposed to areas that are rural in which majority of that community is employed by agriculture.

The media's influence on the students in Group B's perception of agriculture may explain why not as many students have a favorable perception of agriculture as compared to the students in Group A. Teachers may not promote careers in agriculture because of their personal perceptions, beliefs and experiences.

Both groups of students barely had any family members to stress the importance of agriculture, which could also influence career choice. A student's decision to pursue a career in agriculture was observed by the factors that were examined in this analysis. Possible barriers to pursuing a career in agriculture may include the media's influence on student perceptions, educators failing to promote agricultural careers, and students overall beliefs of who employment in the agricultural industry is for.

Our findings suggest several courses of action. It is imperative for students to be immersed in an environment that is not only supportive but also encouraging of their

career goals. It is also important that students have access to several sources of information. The activity of agriculture for students in both groups has had some effect on how they're influenced and their beliefs of individuals who are employed within the industry.

Keys to improving how these students view agriculture and individuals employed by the industry is to diminish stigmas associated with agriculture and inclinations that may have been passed down from prior generations.

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**Appendix A**  
**Questionnaire**

**Directions:**

Below, you will find a three – part questionnaire aimed to identify the factors that influence a student’s desire to pursue a career in agriculture. Please answer the questions to the best of your ability. Questionnaires must be completed in full for you to be entered into a random drawing for one of five \$15 iTunes gift cards.

**Section I: Part A**

Rate each of the statements on a scale of one (1) to five (5) by circling the number in the appropriate box. Please only choose one number on the scale.

	<b>1 Strongly Disagree</b>	<b>2 Disagree</b>	<b>3 Neutral</b>	<b>4 Agree</b>	<b>5 Strongly Agree</b>				
1	Agriculture is farming.				1	2	3	4	5
2	Agricultural careers are for White men.				1	2	3	4	5
3	Agricultural careers are for women.				1	2	3	4	5
4	Agricultural careers pay well.				1	2	3	4	5
5	Agricultural careers are for people over 50 years of age.				1	2	3	4	5
6	Agricultural careers require little to no skills.				1	2	3	4	5
7	Agricultural careers are labor intensive/require a lot of work.				1	2	3	4	5
8	Agriculture is important to my survival.				1	2	3	4	5
9	Agriculture is an important part of the U.S. economy.				1	2	3	4	5
10	Agricultural careers are for people who live in rural areas (not in cities).				1	2	3	4	5
11	My parents/guardians have a positive perception of agriculture.				1	2	3	4	5

12	My parents/guardians encourage me to pursue a career in agriculture.	1	2	3	4	5
13	There are people who look like me in the agricultural industry.	1	2	3	4	5
14	My agricultural classes are difficult.	1	2	3	4	5
15	Anyone can pursue a career in agriculture.	1	2	3	4	5
16	The agricultural industry is racially diverse.	1	2	3	4	5
17	My friends/peers have a positive perception of agriculture.	1	2	3	4	5
18	My agricultural teacher(s) promote(s) agricultural careers.	1	2	3	4	5
19	I can financially support my lifestyle with a career in agriculture.	1	2	3	4	5
20	There are many career opportunities in the field of agriculture.	1	2	3	4	5
21	My guidance counselor has recommended that I pursue an agriculture-related career.	1	2	3	4	5
22	The portrayal of agriculture in the media is positive.	1	2	3	4	5
23	The media influences my perception of agriculture.	1	2	3	4	5
24	My agricultural classes provide me with the skills needed to succeed at the collegiate level.	1	2	3	4	5
25	I have a positive perception of agriculture.	1	2	3	4	5
26	I plan to pursue a career in agriculture.	1	2	3	4	5
27	I enjoy my science classes.	1	2	3	4	5
28	I enjoy my math classes.	1	2	3	4	5

29	I enjoy my language arts classes.	1	2	3	4	5
30	I plan to attend an 1860/1890 Land Grant Collegiate Institution.	1	2	3	4	5
31	The agricultural industry has a lot to offer me.	1	2	3	4	5
32	My friends plan to pursue a career in agriculture.	1	2	3	4	5
33	My parents are supportive regardless of my career choice.	1	2	3	4	5
34	Members of my family stress the importance of agricultural careers.	1	2	3	4	5

**Section I: Part B**

Please indicate your response by circling **Yes** or **No**.

35. I have a Supervised Agricultural Experience (SAE) project. (Yes/No)  
- If yes, how many?

36. Someone in my family has an agriculture-related job. (Yes/No)  
- If yes, what is their occupation?

37. I have a mentor within the agricultural industry. (Yes/No)  
- If yes, what is their profession?

38. I am involved in 4-H. (Yes/No)

39. I am involved in the National FFA Organization. (Yes/No)

40. I have attended a National FFA convention (Yes/No)

41. I serve on my FFA or 4-H chapter's leadership team. (Yes/No)  
- If yes, position held.

42. Recruiters from various colleges of agriculture visit my school. (Yes/No)  
- If yes, please name the schools/colleges they represented?

43. I participate in FFA and 4-H competitions. (Yes/No)

44. I participate in the Miami-Dade County Youth Fair and Exposition Animal or Horticulture contest. (Yes/No)

45. I volunteer at an animal shelter. (Yes/No)

46. I volunteer at an animal hospital. (Yes/No)

47. I volunteer at my school's farm. (Yes/No)

**Section II: Part A**

Please indicate your response by placing an **X** in the box to the right.

48. Gender:

Transgender	
Male	
Female	

49. The area I live in is considered:

Rural Area	
Suburban Area	
Urban Area	

50. Race/Ethnicity:

White (Non – Hispanic)	
Hispanic (Cuban)	
Hispanic (Puerto Rican)	
Hispanic (Dominican)	
Hispanic (Columbian)	
Hispanic (Other, indicate)	
Black (African American)	
Black (Haitian)	
Black (African)	
Black (Jamaican)	
Black (Bahamian)	
Black (Other, indicate)	
Asian (Chinese)	
Asian (Japanese)	
Asian (Vietnamese)	
Asian (Other, indicate)	
Indian	
Middle Eastern	
Native American	
Other (Please indicate)	



51. Grade level:

9 <sup>th</sup> Grade	
10 <sup>th</sup> Grade	
11 <sup>th</sup> Grade	
12 <sup>th</sup> Grade	

52. Age:

13	
14	
15	
16	
17	
18	
19 or Older	

53. Email address:

**Appendix B**  
**Forms, Correspondence and Approval Letters**

## Participant Letter

The Pennsylvania State University

**Title of Project:** Factors that Influence Black and Latino High School Students to Pursue Careers in Agriculture

Dear Future Participants,

I am writing to tell you about a study that will be conducted at The Pennsylvania State University. I am a graduate student in the Department of Agricultural Economics, Sociology and Education studying the factors that influence Black and Latino high school students to pursue a career in agriculture.

The purpose of this study is to determine the factors that influence Black and Latino students enrolled in high school embedded agricultural programs to pursue a career in agriculture. This study is unique as it seeks to identify factors for Black (African – American, Caribbean) and Latino (Cuban, Puerto Rican, Dominican and etc.) students as their immigrant status and historical ties to homeland differ from other groups

As the principal investigator of this project I have created the research design, will complete the data collection and disseminate papers related with this research. It is important to know that the intent of this letter is not to tell you to participate in this study. It is your decision to take part in this study and your involvement is voluntary. Your participation in this study will be beneficial to the research in the academy as we attempt to discover the factors that influence Black and Latino students to pursue careers in agriculture.

If you are interested in learning more about this study, please review the enclosed information from Jonathan Dumas and complete the **enclosed form(s)**. You can also contact the researcher at (786) 325 – 0150 or jad497@psu.edu.

You do not have to respond if you are not interested in participating in this study. No one will contact you if you chose not to participate. Your participation in this study is confidential should you chose to participate. If you choose to participate in this study a questionnaire will be administered during your vocational agriscience course and will require **30** minutes of your time. Participants who complete the survey will be entered in a random drawing for one of five \$15 iTunes gift cards in return for their time. Five participants will have a chance to win a \$15 iTunes gift card.

**Please be advised that parental consent is required for individuals who are under the age of 18 and wish to participate in the research study.**

Thank you for your consideration.

Sincerely,



Jonathan Dumas

## **Participant Recruitment Form**

The Pennsylvania State University

**Title of Project:** Factors that Influence Black and Latino High School Students to Pursue Careers in Agriculture

You have been invited to participate in a research study aimed to determine the factors that influence Black and Latino students enrolled in high school agricultural programs to pursue a career in agriculture.

The purpose of this study is to uniquely identify factors that prevent and promote agricultural careers to Black and Latino students as their immigrant status and historical ties to their homeland differ from other racial groups. The researcher hopes to shed light on the recruitment and retention efforts and paradigms for Black and Latino students in the agricultural industry, and determine if there are relationships that exist.

A questionnaire will be administered to determine the factors that influence Black and Latino high school students to pursue careers in agriculture.

Participants will be asked to answer likert-scale questions (based on rank), dichotomous questions (yes or no), filter questions (questions that determine if participant is qualified to answer a subsequent question) and open-ended questions (encouraging participants answer based on personal knowledge).

Participation in this research study will only require thirty (30) minutes of the participant's time. Additionally, participants may be followed-up with should the researcher have any questions about a specific questionnaire.

Participants will be entered in a random drawing for one of five \$15 iTunes gift cards in return for their time.

Your participation in this research is confidential. The data will be stored and secured at 009 Ferguson Building University Park, PA 16802 in a locked file cabinet. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared.

Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer.

Take as long as you would like to make your decision. We will be happy to answer any questions you have about this study. Please contact the principal investigator or advisor should you have any questions about this project or if you have a research related problem. If you have any questions concerning your rights as a research subject, you may contact The Pennsylvania State University Institutional Review Board (IRB) at 814-865-1775.

**Please be advised that parental consent is required for individuals who are under the age of 18 and wish to participate in the research study.**

**Principal Investigator:** Jonathan Dumas  
**Address:** 009 Ferguson Building  
University Park, PA 16802  
**Email:** [jagdumas@gmail.com](mailto:jagdumas@gmail.com)  
**Work Phone:** 814 – 863 - 0416

**Advisor:** Nicole Webster, Ph.D.  
**Address:** 204B Ferguson Building  
University Park, PA 16802  
**Email:** [nsw10@psu.edu](mailto:nsw10@psu.edu)  
**Work Phone:** 814 – 863 – 2695

**Informed Consent Form for Social Science Research**  
The Pennsylvania State University

**Title of Project:** Factors that Influence Black and Latino High School Students to Pursue Careers in Agriculture

**Principal Investigator:** Jonathan Dumas  
**Address:** 009 Ferguson Building University Park, PA 16802  
**Email:** [jagdumas@gmail.com](mailto:jagdumas@gmail.com)  
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**Work Phone:** 814 – 863 - 2695

<b>ORP OFFICE USE ONLY</b> <b>DO NOT REMOVE OR MODIFY THIS BOX</b> <b>IRB# 41200 Doc. # 1001</b> The Pennsylvania State University Institutional Review Board Office for Research Protections Approval Date: 01-29-2013 JDM Expiration Date: 01-28-2014 JDM
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**Purpose of the Study:**

The purpose of this study is to determine the factors that influence Black and Latino students enrolled in high school agricultural programs to pursue a career in agriculture.

**Procedures to be followed:**

Participants will be asked to answer questions based on measurement (likert Scale, rating or rank), dichotomous questions (yes or no), filter questions (questions that determine if participant is qualified to answer a subsequent question) and open-ended questions (encouraging participants answer based on personal knowledge). Participants may also be followed-up with should the researcher have any questions about a specific questionnaire.

**Duration/Time:**

Participation in this research study will only require thirty (30) minutes of the participant's time.

**Statement of Confidentiality:**

Your participation in this research is confidential. The data will be stored and secured at 009 Ferguson Building University Park, PA 16802 in a locked file cabinet. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared.

The Pennsylvania State University's Office for Research Protections and Institutional Review Board, and the Office for Human Research Protections in the Department of Health and Human Services may review records related to this project.

**Right to Ask Questions:**

Please contact Jonathan Dumas at (814) 863 – 0416 with questions, complaints or concerns about this research. You can also call this number if you feel this study has harmed you. If you have any questions, concerns, problems about your rights as a research participant or would like to offer input, please contact The Pennsylvania State University’s Office for Research Protections (ORP) at (814) 865-1775. The ORP cannot answer questions about research procedures. Questions about research procedures can be answered by the research team.

**Compensation for participation:**

Participants will be entered in a random drawing for one of five \$15 iTunes gift cards in return for their time.

**Risk and Benefits:**

There are no reasonably foreseeable discomforts or risks associated with participating in this study.  
Your participation in this study may add to the current literature in the field.

**Voluntary Participation:**

Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusing to participate or withdrawing early from the study will involve no penalty or loss of benefits you would be entitled to otherwise. Grades will not be affected should students decide not to participate.

*If you agree to take part in this research study and with the information outlined above, please sign your name and indicate the date below. Please be advised that parental consent is required for individuals who are under the age of 18 and wish to participate in the research study.*

*You will be given a copy of this form for your records.*

I give permission for my child, \_\_\_\_\_, to participate in this research study.

\_\_\_\_\_  
Parent or Guardian Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Participant Assent Signature (13 and older)

\_\_\_\_\_  
Date

**Subject: XXX'S Participation in Research Study**

Good Morning XXX,

My name is Jonathan Dumas, a 3rd Year Masters Student at the Pennsylvania State University Pursuing a Dual-Title Degree in Agricultural and Extension Education, and International Agriculture and Development. I received a Bachelor's of Science in Animal Science from the University of Florida, and I am a graduate of William. H. Turner Technical Arts High School (where I was enrolled in the Agriscience Academy, Veterinary Assisting option and member of the Miami, Sr FFA chapter and Amelia Earhart 4-H club).

I am writing you in an effort to gain your support. I am completing my masters' thesis on the factors that influence Black and Latino High School Students to pursue careers in agriculture and related industries, and would like to use the students in your agricultural programs as my sampling frame.

I'd enjoy the opportunity to talk with you in depth about the study, and the role your students will play in its findings.

Please feel free to contact me via phone at 786.325.0150 or by email at [jad497@psu.edu](mailto:jad497@psu.edu) with any questions, comments or concerns.

Thank you,

Jonathan

Enclosed: RRC Approval Letter



**Subject: Research Study Participation Follow-Up**

Good Afternoon XXX,

I trust this message finds you well.

I was given the "Go Ahead" by XXX and was told you will be my point of contact.

What I need at this point is the total number of students enrolled within the Academy of XXX. I will send you the participant letter, participant recruitment form, Penn State's Research Approval Letter (for you to keep) and the informed consent form via U.S. mail once I receive those numbers.

I am attaching MDCPS Research Review Committee Approval letter, and all the documents mentioned above.

Please let me know if there are any questions. Feel free to call me on my cell: [786.325.0150](tel:786.325.0150) or email me.

Thank you so much for all of your help and assistance as it is greatly appreciated.

Thank you,

Jonathan

Enclosed: Participant Letter, Participant Recruitment Form, Informed Consent Form, IRB Approval Letter & RRC Approval Letter

Dear Jonathan,

The Institutional Review Board (IRB) has approved the above referenced study. You may begin your research. The study's most recent approval letter and corresponding materials (e.g., most recently approved informed consent form(s), recruitment materials, data collection instruments, etc.) may be accessed in PRAMS.

To access your documents:

- Please log into PRAMS (<http://www.prams.psu.edu>)
- In the left hand blue side menu, expand the "Human" link [click on the plus sign]
- Click on "Protocol Folder Active"
- Select your Protocol ID [IRB number]
- Select the "Documents" tab to view documents related to the research study

If a funding source requires a signature on the approval letter, please do not hesitate to contact me.

Thank you,

Joyel

Joyel D. Moeller | Research Compliance Specialist IV

The Pennsylvania State University | Office for Research Protections | The 330 Building,  
Suite 205 University Park, PA 16802 | Direct Line: (814) 865-7957 | Main Line: (814)  
865-1775

Fax: (814) 863-8699 | [www.research.psu.edu/orp](http://www.research.psu.edu/orp)



# Miami-Dade County Public Schools

*giving our students the world*

**Superintendent of Schools**  
Alberto M. Carvalho

**Assessment, Research, and Data Analysis**

**Miami-Dade County School Board**

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Dr. Marta Pérez

Raquel A. Regalado

June 19, 2013

Mr. Jonathan Dumas  
130 Farmstead Lane, Apt. 148  
State College, PA 16803

Dear Mr. Dumas:

I am pleased to inform you that the Research Review Committee (RRC) of the Miami-Dade County Public Schools (M-DCPS) has granted you approval for your request to conduct the study: "Factors that Influence Black and Latino High School Students to Pursue Careers in Agriculture" in order to fulfill the requirement of your Master's Thesis at Pennsylvania State University.

The approval is granted with the following conditions:

1. **Participation of the schools targeted in this study is at the sole discretion of each principal.**

**NOTE:** Even with the approval of the RRC, it is still the responsibility of the Principal as the gatekeeper of the school to decide whether to participate or not. As stated in the Board rule, "... the principal of the individual school has the privilege of deciding if RRC-approved research will be conducted within his/her school."

A copy of this approval letter must be presented/and or shared with the principal of each targeted schools.

2. This research project is conducted to fulfill the requirements of a Master's Thesis. The study will involve surveying students in vocational education at two M-DCPS schools.
3. The participation of all subjects is **voluntary**. The anonymity and/or confidentiality of all subjects must be assured.
4. Student consent forms must be secured prior to the beginning of the study.
5. Disruption of the school's routine by the data collection activities of the study must be kept at a minimum. Data collection activities must not interfere with the district's testing schedule.
6. All research and data collection activities must be done with the knowledge and approval of the principal at each targeted school.

Assessment, Research, and Data Analysis • 1450 N.E. 2nd Ave. • Suite 222 • Miami, FL 33132  
305-995-7512 • 305-995-2691 (FAX) • [www.dadeschools.net](http://www.dadeschools.net)

**It should be emphasized that the approval of the Research Review Committee does not constitute an endorsement of the study. It is simply a permission to request the voluntary cooperation in the study of individuals associated with M-DCPS.**

It is your responsibility to ensure that appropriate procedures are followed in requesting an individual's cooperation, and that all aspects of the study are conducted in a professional manner. With regard to the latter, make certain that all documents and instruments distributed within M-DCPS as a part of the study are carefully edited.

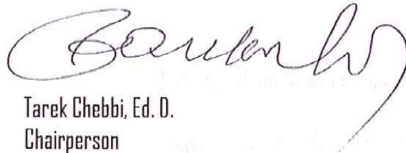
The approval number for your study is shown below. This number should be used in all communications to clearly identify the study as approved by the Research Review Committee. The approval expires on the date shown below. During the approval period, the study must adhere to the design, procedures and instruments which were submitted to the Research Review Committee.

Finally, as indicated in your application, please submit to the RRC an abstract of the research findings by **July, 2014**.

**If there are any changes in the study as it relates to M-DCPS, the RRC must be notified in writing. Substantial changes may necessitate resubmission of the request. Failure to notify me of such a change may result in the cancellation of the approval.**

If you have any questions, please call me at 305-995-7512. On behalf of the Research Review Committee, I want to wish you every success with your study.

Sincerely,



Tarek Chebbi, Ed. D.  
Chairperson  
Research Review Committee

TC:bf

APPROVAL NUMBER: 1897

APPROVAL EXPIRES: 06/30/2014

***Note: The researcher named in this letter of approval will be solely responsible and strictly accountable for any deviation from or failure to follow the research study as approved by the RRC. M-DCPS will NOT be held responsible for any claim and/or damage resulting from conducting this study.***