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Factors That Influence African Americans To Enroll In Agricultural Science Programs

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FACTORS THAT INFLUCENCE AFRICAN AMERICANS TO ENROLL IN
AGRICULTURAL SCIENCE PROGRAMS

By

Levar Desmond Graham

A Thesis
Submitted to the Faculty of
Mississippi State University
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in Agricultural and Extension Education
in the Department of Agricultural Information Science and Education

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FACTORS THAT INFLUENCE AFRICAN AMERICANS TO ENROLL IN
AGRICULTURAL SCIENCE PROGRAMS

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The purpose of this study is to identify the factors that most influence African Americans to enroll in agricultural science programs at 1890 and 1862 Land Grant universities.

A survey instrument was designed which collected the factors, demographics, and attitudes that influenced minority enrollment in agricultural sciences at 1890 and 1862 universities. The data was collected at land grant universities in the southern states of Alabama, Georgia, Louisiana, Mississippi, and Florida. These states were chosen because their close proximity to Mississippi State University and their willingness to participate in this study.

The population in this study consists of African American undergraduate students at 1890 and 1862 Land Grant universities. The students were selected from colleges within the university where the agriculture component is taught. The findings were based on the data collected from the 172 undergraduate African American students enrolled in agriculture majors at 1890 and 1862 land grant universities.

DEDICATION

This Thesis is dedicated to my late grandfather Herman Carter Sr. whom I believe still watches over me everyday, my late grandmother Sarah Carter, my late little brother Marcus Graham, all whom I miss very much. This study is also dedicated to my mother Gloria Graham, my father Moses Graham, and all who supported my education at Mississippi State University.

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CHAPTER I

INTRODUCTION

Minorities have been and continue to be under-represented in most areas of the agricultural sciences. Between 1999 and 2004 minority enrollment at land grant universities have significantly declined (Food and Agricultural Education Information System (FAEIS), 2004). Based on this information, minorities are not only underrepresented in academic departments at land-grant universities, but also in professional roles in agricultural industries, and in governmental agencies such as the United States Department of Agriculture (USDA). The recruitment and retention of minority students in the agricultural sciences is very important due to the low numbers of African Americans enrolled in the agriculture sciences. This will constitute a major challenge for both 1890 and 1862 universities to persuade students of ethnic minority groups to enroll in the agricultural sciences.

Background

Between 1995 and 2000, a result of streamlining and downsizing, the USDA permanent workforce has decreased by almost 15,000 employees (15%), from 99,000 to 84,000 (USDA, 2000). Although the representation of minorities has steadily improved at

a slow rate, enrollment numbers in agricultural programs across the country indicate that agriculture, as a major, does not appeal to minority students. The USDA (2000) reported that from 1993 to 1999, minority employment in the agriculture industry increased from 9.4% to 10.8%, Hispanic employment increased from 4.1% to 4.8%, employment of Asian Pacific Islanders increased from 1.7% to 2.0%, and that of American Indians increased from 2.4% to 2.6%. Moreover, the USDA (2000) suggested that the agricultural system needs a highly-educated, diverse work force that encourages the exchange of ideas which not only broadens the scope of problem solving, but also improves the possibility that the problems will be solved.

Colleges of agriculture are challenged to seek new and innovative ways to appeal to minority students. The recruitment process can begin with discovering and identifying what has the greatest influence on minorities' decision to select agriculture as a major.

According to the National Research Council (1988), agricultural education has a long history in American education. Most Americans know very little about agriculture and its social and economic importance and significance in the United States (U.S.). Colleges of agriculture design and facilitate recruitment strategies to introduce the opportunities available to students (Morgan, 2000). Other college-related sources of influence that affect students' decisions to select agriculture as a major are the reputation of the college and faculty, facilities, geographical location, cost of tuition, and financial incentives in the form of scholarships (Donnermeyer & Kreps, 1994).

Although agricultural education is popular at the secondary level with other ethnic groups such as Caucasians, the post-secondary sector has experienced problems with

recruiting minorities. Colleges of agriculture at 1862 land-grant institutions have found it difficult to recruit and retain minority students within their agricultural programs. The belief is that agricultural programs are only designed to train individuals for farming and production agriculture, causing potential students to stray away from the field. One of the problems identified is that when minorities hear the word “agriculture,” they associate it with slavery (Morgan, 2000).

The low numbers of minorities enrolled in college agricultural programs has led to a nationwide concern. In the fall of 1999, there were only 4,209 minorities out of 119,034 enrolled in agricultural-related fields (FAEIS, 1999). Admission requirements for many universities have made students hesitant to enroll in vocational classes, including agricultural education, while at the secondary level. A study by Talbert and Larke (1992) on minority agricultural education students in Texas secondary agriculture programs revealed that minorities perceived more barriers to enrolling in agricultural courses and had negative attitudes toward agriculture and agricultural occupations. With increased graduation requirements and state-mandated tests, minority students have been pressured to focus more on basic studies. The misconception is that if you are enrolled in a vocational class, then you will not be adequately prepared for standardized tests and not able to pass the entrance requirements for many universities. Many educators are trying to find ways to make minorities, particularly African Americans, aware of the myriad of options available in the field of agriculture.

Studies by Marshall (1989) and Valverde (1988) suggested stereotyping, discrimination, and constraints imposed by self, family, lack of career aspirations, and

lack of confidence as causes for lack of representation by minority groups in professional roles. Donnermeyer and Kreps (1994) found that students already exposed to agriculture tended to enroll in agricultural majors more often than students without exposure.

Literature and past research suggest that minorities experience significant cultural and institutional barriers that may restrict their preparation for educational programs and choosing a career. Lam (1987) identified interpersonal reasons, school factors, socioeconomic status, and family issues as barriers that discourage students from enrolling in secondary agriculture classes when attending high school. Kotrlik (1987) found that parents were the dominant influence on students' decisions whether to enroll in agriculture classes when attending high school. Students also tend to seek the advice of teachers, parents, counselors, friends, and other students.

Bohr, Pascarella, Nora, and Terenzini (1995) noted that the majority of African-American students pursue post-baccalaureate degrees and education at predominately white institutions (PWI's). Of the 4,009 colleges and universities in the U.S., PWI's represent 3,904 of the institutions. Furthermore, 80% of minorities attending college are enrolled at PWI's (Chronicle of Higher Education Almanac, 1998). The decrease in agricultural enrollments has had a profound effect on many institutions, notably land-grant institutions. Land-grant institutions were created through the Morrill Acts of 1862 and 1890. While the initial purpose of the institutions was to educate citizens in the areas of agriculture, home economics, and the mechanical arts, several 1890 land-grant institutions have lost agricultural science programs due to the lack of funds needed for program innovations, student recruitment, and faculty development (Morgan, 2000).

University faculty and administrators are seeking ways to diversify their programs to include more minorities and help them to be aware of the potential opportunities that exist for them. In response to this crisis, 1862 Land Grant Universities have created more innovative programs and offering special incentives to help with the recruitment and retention of minorities in the agricultural sector. Shade (1993) defined the worldview of minorities as cautious, suspicious, and apprehensive. This resulted from the past prejudices and injustices that minorities faced and the negative outlook by other ethnic races. Shade's perception of minorities is supported by research of Parham and Austin (1994), who found that the stereotypical occupational structure that exists in American society influences minorities' career outlook. History and other related research have shown over the years that minorities have been portrayed as having deficiencies that prevent them from succeeding in academia and occupations that require intensive thinking and problem solving. According to Parham and Austin (1994), individuals select jobs in which they visualize themselves, but if no other familiar faces or colors are there, is the determination still there?

The United States has undergone a major demographic change with the racial and ethnic composition of its people within the past eighteen years. Because of the demographic shift, the changes have led to an increase in the number of minorities pursuing higher education and enrolling in institutions of higher learning. Johnston and Packer (1987) predicted that the nation would be increasingly culturally diverse in the years ahead, and that people of color would account for more than five-sixths of the net additions to the workforce. Hodgkinson (1998) noted that if we look into the future in

terms of ethnic composition, we would see the population increasing by 9 million for Hispanics, 3.8 million for African Americans, 3.8 million for Asians, and 266,000 for Native Americans over the next 10 years. Hodgkinson also noted that another sign indicating that diversity exists is that there are 215 nations in the world, and the U.S. has at least one individual from each living within it.

In 1998 U.S. college enrollment was estimated to be 14,367,520 students. Of that number, minority students represent 1,505,565 (10.6%), and Hispanic students 1,166,108 (8.2%) (Chronicle of Higher Education Almanac, 1998). Ethnic minorities including African Americans, Hispanics, and Asians represent a small, though recently growing percentage of 1890 and 1862 land-grant college enrollment, about 5% percent in 1984 and 10% in 1993 (U.S. Department of Education, 1993). Additional data by the United States Department of Education in 1993 revealed that of all U.S institutions of higher learning, ethnic minorities account for slightly more than 20% of undergraduates and about 14% of the graduate students.

Diversity is a practical agenda that recruiters must address if graduates are to remain prized recruits for businesses and organizations that have sought them in the past (Carnevale & Fry, 2000). The presence of minority students in the university setting is very important. Many factors influence minorities to enroll in agricultural science programs and select agriculture as a major. Minorities are attracted for a variety of reasons. Much data have been collected on the factors that lead students to enroll in college and the college selection process. Past research has shown that guidance counselors, parents, friends, family members, and former teachers have the most

influence on minorities to enroll in college and aid in selecting a particular major. As land grant universities enter the 21st century, the opportunities for minorities will increase, and there is a need to attract them to universities, place them into the world of agriculture, and prepare them with the skills deemed necessary to be highly competent citizens in the workforce (Carnevale & Fry, 2000).

Theoretical Framework

The theoretical framework for this study is based on Eddy (1957) who determined that intentions to participate in an activity could be predicted based on knowledge, observation, or other information regarding a specific issue. In this study, minority students' intent to major in agriculture or become involved in an agricultural career may be predicted by analyzing their belief about agriculture and their experience.

Minorities are under-represented in the agricultural sciences and in agricultural professional roles (Wardlow, Graham, & Scott 1995). Minorities experience more barriers to enrolling in agricultural courses and have more negative attitudes toward agriculture and agricultural occupations (Talbert & Larke, 1992). The road to professional status in the agricultural industry is through formal education, namely at land-grant institutions which offer programs of study. According to Bekkum (1993), the agricultural industry places considerable importance on the background and experience of graduates. The primary forum and recruitment tool for agricultural professionals is through 1862 Land Grant institutions because they are the largest and most widespread.

Enrollment at land-grant universities, and employment in the agricultural industry, might be increased if it is known why minorities are not pursuing degrees in the agricultural sciences. In order to improve recruitment, agricultural educators must understand what motivates students to enroll in agricultural science programs, this will help recruiters develop strategies to recruit and retain minorities. Faculty within colleges and universities have used past research on college choice to develop methods to recruit students. They consider the factors that students' rate as most important when marketing the campus and their respective programs (Chapman, 1981). Colleges and academic departments within the university work hard to recruit students who qualify for admission and students who have the ability to succeed in the different programs that are offered.

Statement of the Problem

It is imperative that we diversify the agricultural sciences as well as other fields in the agriculture industry. Diversity in the workforce creates an organization that is enriched with people from different cultures and that have different experiences, lifestyles, backgrounds, perspectives, and ideas (USDA, 2000).

The factors influencing the enrollment of minorities into agricultural science programs at land-grant institutions is a concern, especially as the nation becomes more diverse and moves into the 21st century. There has not been any prior research conducted that concentrates on the factors that influence minorities to enroll in agricultural science programs at land-grant institutions. Agricultural educators need to understand the concerns and issues that minority students face. This study will attempt to gather data on

the perceptions of minority students enrolled in the agricultural sciences at 1890 and 1862 land-grant institutions.

Purpose of the Study

The purpose of this study is to identify the factors that most influence African Americans to enroll in agricultural science programs at 1890 and 1862 land grant universities. It is intended that this study will provide the groundwork for the development of a conceptual framework giving implications for the recruitment of and structuring the African American experiences in the agricultural sciences. To increase the numbers of African Americans in the agricultural sciences, it is imperative that administrators, colleges of agriculture faculty, and other faculty and staff members be informed of the perceptions of minorities enrolled in agricultural programs at land-grant institutions.

Answers to the following research questions were sought in this study.

1. What are the demographic characteristics of African American students enrolled in the agricultural sciences at the 1890 and 1862 land grant universities?
2. What are the students' past experiences related to agriculture?
3. What are the factors that influence African Americans to enroll in agricultural science programs?
4. What were the factors that influenced African Americans to enroll at their present university?

5. How do attitudes of African American students attending 1890 and 1862 land grant universities compare in regards of their relationship with their academic advisor?
6. How do attitudes of African American students attending 1890 and 1862 land grant universities compare in regards of their relationship with their professors?
7. How do attitudes of African American students attending 1890 and 1862 land grant universities compare in regards of their relationship with students within their department?
8. How do attitudes of African American students attending 1890 and 1862 land grant universities compare in regards to their satisfaction with their agricultural science program experience?

Significance of the Study

The data in this study will assist or help agricultural educators, administrators, and other faculty personnel gain a better understanding of minority students. Agricultural scientists need to understand the concerns and potential barriers that minority students face within agriculture science programs.

Definition of Terms

The researcher has identified the following terms in an effort to assist the reader in comprehending the contents of this study:

Agriculture Majors: Students that are in the study that consist of plant science, soil science, general agriculture, food science, agriculture education, agriculture economics, and forestry this excludes the human sciences.

Agricultural science programs: Programs (i.e. animal and dairy science, plant science, soil science, general agriculture, food science, agricultural education, agricultural economics, agricultural engineering, poultry science, agricultural communications, entomology, and forestry) that are taught at 1890 and 1862 land-grant universities.

Minorities: African-American students enrolled at 1890 and 1862 Universities.

1862 land-grant institutions: Institutions of higher education established in the United States under the provisions of the Morrill Act. The Act authorized the granting to each state of 30,000 acres of public land for each senator and each representative of the state in Congress at that time. The lands were provided to be sold or used for profit and proceeds used to establish at least one college per state. The emphasis stressed at these universities is to promote scientific and classical studies, including military tactics to teach branches of learning related to agriculture and mechanic arts (Harris, 2004).

1890 land-grant institutions: In 1890 the Morrill-McComas Act provided for the establishment of segregated *Land Grant* colleges within the sixteen southern and border states practicing both de jure and de facto racial discrimination. One of the primary goals of the 1890 historically black land grant institutions, were to shape the current struggles and challenges faced by the institutions inadequate research budgets and inadequate resources for serving the needs of minority farmers suffering devastating losses of land and livelihood are two significant challenges tied to the legacy of racial discrimination. In

turn historically black land grant institutions have developed distinctive strengths that are increasingly being called upon to serve the challenges confronting communities in the rural south (Harris, 2004).

Limitations

This study is limited to the following:

The data collected from this study only included minorities from selected 1862 Land Grant institutions and the 1890 land grant institution enrolled in agriculture. It is possible that minority students' responses from other institutions would differ from the ones used in this study based on the location and programs available.

CHAPTER II

REVIEW OF THE LITERATURE

The review of literature in this study covers seven aspects: (a) Development of agriculture in the U.S., (b) Creation and mission of land-grant institutions, (c) Minorities in agriculture, (d) College enrollments, (e) Experiences of minorities on college campuses, (f) Minorities in the agricultural industry, (g) Views on minority recruitment.

Development of Agricultural Education in the United States

In 1862, almost 50% of all U.S. residents lived on farms, and almost 60% of the labor force worked on them (National Research Council, 1995). President Abraham Lincoln was considered a fierce supporter of agriculture and that eventually led him to the establishment of the United States Department of Agriculture (USDA) in 1862. During his term, the majority of the citizens were farmers. These citizens lacked knowledge and skills to be successful contributors to the agricultural industry that one day would require them to be successful farmers. Lincoln thought of the USDA as a mentoring tool established to promote scientific farming practices to persons that would enable them to be highly productive farmers. He often referred to the USDA as the “people’s department,” which provided information on subjects connected with agriculture, seeds, plants, and monetary support to aid farmers in growing their crops and

raising their animals. Other sources of monetary support existed with the implementation and passing of governmental acts created by Congress, and the establishment of different agencies and organizations with the purpose of helping to strengthen the field of agriculture. The business of the day was agriculture, and legislation helped to promote it throughout the land.

The Homestead Act was created in 1862 and gave 160 acres of public land to men at least twenty-one years of age or who were the head of a family. The settlers were to make improvements or have lived on the land for at least five years before the agreement was to become valid. The Homestead Act was an historical act because it provided an opportunity for the common person to own land, develop pride and freedom, which is the foundation of the current farming industry (Homestead National Monument of America N.D.).

The Hatch Act of 1887 authorized the payment of federal funds to each state to establish experiment stations in connection with the land-grant institution. Its purpose was to aid in inquiring, and diffusing among the people in the U.S. useful and practical information on subjects connected with agriculture and promoting scientific investigation in experiments (Prawl, Medlin, & Gross1984).

The experiment stations were established to help farmers learn the most effective and profitable ways of improving crop yields, disease control, and animal production on their farms. Through research, farmers were able to obtain valuable information that would enable them to become more productive producers of agricultural products.

The Smith-Lever Act of 1914 extended the benefits of federal aid to those colleges established under the Morrill Acts of 1862 and 1890. Its purpose was to inaugurate in connection with these colleges, agriculture extension work which shall be carried on in cooperation with the USDA in order to aid in diffusing among the people of the U.S. useful and practical information on subjects relating to agriculture and home economics and to encourage the application of the same (Eddy, 1957).

The Smith-Lever Act was designed to eliminate much of the duplication of Extension efforts among the colleges, the USDA, and other governmental agencies by creating one organization. The Cooperative Extension Service (CES) is one of the largest educational organizations that address the world's changing society. Known in the beginning as the Agricultural Extension Service, states changed to CES to reflect the mission and function of the organization. Numerous laws have been passed relating to the Cooperative Extension Service (CES) since the Smith-Lever Act. New Legislation has authorized Extension activities to include 4-H club work and education in rural health (Sanderson, 1988).

During the 1920s, Extension was active in helping to organize farm cooperatives to purchase fertilizers, and feed, and aid in the sale of crops and livestock. Many of the programs that were created continue to operate today (Sanderson, 1988). The Cooperative Extension Service served as a link for educating rural America.

In 1917, Congress further defined the federal role in agricultural education with the passage of the Smith-Hughes Act, which included special provisions for agricultural education (National Research Council, 1988). The Smith-Hughes Act of 1917 provided

federal funds to support the teaching of agriculture. The passage of this act marked the point at which vocational agriculture diverged from and largely replaced general agricultural education in the schools. The vocational agriculture programs that developed after the Smith-Hughes Act were intended to prepare young people to work as farmers.

The Creation and Mission of Land Grant Universities

America's land-grant universities offer an environment that can match the needs and interests of every type of students. As the people's universities, these institutions offer access and opportunity to millions of Americans--opening doors to a better life for many who might otherwise be denied a college education (Gray, 1997). Since 1862, the nation's state and land-grant universities have played a pivotal role in the development of our democratic society. Gray (1997) noted that these institutions are committed to providing students with challenging opportunities that enrich both their professional and personal lives and to offering a curriculum that provides both a liberal arts and a practical education.

Over the years, land-grant status has implied several types of federal support. The Morrill Act of 1862, also known as the Land-grant College Act, stimulated the states to create public universities to help develop the vast natural resources of the nation through agricultural extension programs and engineering experiment stations, while broadening opportunities for education to the working class (Harris, 2004).

The purpose of the Morrill Act of 1862 was to establish at least one college in each state where the leading object shall be, without excluding other scientific or classical

studies, to teach such branches of learning as are related to agriculture and the mechanic arts, as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life (Eddy, 1957).

The Morrill Act also provided each state with 30,000 acres of public land for each Congressman and U.S. Senator. The land was to be sold and proceeds placed in a fund to provide support for a land-grant college in each state. Introduced by a Vermont congressman named Justin Morrill, the mission of the act was to educate citizens in the areas of agriculture, home economics, and the mechanical arts. Congressman Morrill wanted to finance these fields and provide an education for all social and ethnic classes. The passage of the first Morrill Act reflected a growing demand for agricultural and technical education in the United States and provided U.S. citizens with practical education that had direct relevance to their daily lives (Harris, 2004).

In the beginning, not everyone benefited from the land-grant system. Although the first Morrill Act provided for educational facilities, minorities were not permitted to attend the original 1862 land-grant institutions. Mississippi and Kentucky were the only states to establish institutions for minorities. Under the act, Mississippi's Alcorn A&M College (presently Alcorn State University), established in 1871, was designated as the only black land-grant institution in the country. From 1866 to 1890, several southern states established normal schools to train minority teachers (Jones, 1975). Although many of these institutions were similar to land-grant institutions, the federal government was unable to gain cooperation from the southern states in the provision of land-grant support

to the minority institutions. For minorities, this signified a road to many changes that would be made in the future.

A Second Morrill Act was enacted in 1890 with the sole purpose of establishing and providing support to Negro Land-Grant Institutions in 17 southern states. These schools were referred to as 1890 institutions. The U.S. Congress appropriated \$10,000 annually, which was to be matched by each southern state. The 1890 institutions evolved into a major educational resource for the nation. For over a century, they have provided a principal means of access to higher education for minority men and women for the economic, social, and political challenges of America. Gray (1997) reported that the majority of minorities who hold Ph.D. degrees, medical degrees, law degrees, federal judgeships, and officer rank in the U.S. military did their undergraduate work at these institutions. Every year about one-third of all African Americans who get a college degree graduate from these schools, even though they enroll only 16% of all Minority college students.

Abraham Lincoln a great supporter for agriculture stated, “The land-grant university system is being built on behalf of the people, who have invested in these public universities their hopes, their support, and their confidence” (North Carolina State University Extension Service, N. D. ¶.11).

Faculties at these institutions spend the majority of their time teaching and engaged in research and scholarship activities. Research conducted at state and land-grant universities has touched the lives of every American by improving the environment, food supply, creating cleaner energy resources, reducing pollution, and promoting better health

and human development (North Carolina State University Extension Service, N. D.). Many of these research projects are translated into the classroom environment, giving undergraduate students opportunities to work with great scholars (North Carolina State University Extension Service, N. D.). The Morrill Acts have been a major educational tool and resource for America over the years by helping to prepare students for the workforce upon leaving the classroom with knowledge that has enabled them to change the face of our country and world. Today, America's land-grant institutions continue to fulfill their mission of educating students and service to the people. Through land-grant heritage, millions of students are able to study a variety of academic disciplines, far beyond the scope envisioned in its original mission (Harris, 2004).

Minorities in Agriculture

African Americans and other minorities are under-represented in many agricultural programs and occupations, though many minority groups can trace their history through the crop fields. Minorities who were once slaves began to farm upon being freed after the signing of the Emancipation Proclamation of 1863. After the Civil War, agriculture and farming were the main sources of income to support families. As a result of the opening of some institutions, minorities began to become enlightened on some issues and methods that they used to plant, grow, and produce higher crop yields that led to their success in farming (Morgan, 2000).

Booker T. Washington was one of the most influential black Americans who supported the teaching of agriculture. An educator, leader, and advocate for vocational

education, Washington believed that minorities could benefit more from a practical, vocational education rather than a college education. In 1881, Washington founded and became head of Tuskegee Normal and Industrial Institute, a vocational school for minorities in Tuskegee, Alabama that promoted the pursuit of specific vocational skills and development of proper manners and good morals (Morgan, 2000). Under Washington's leadership, the school became one of the leading minority educational institutions in the United States. In 1890, with approximately 57% of the African-American race illiterate and only 121,000 of the 1,689,000 minorities engaged in agriculture owning the land they tilled, Washington concluded, “the great body of the Negro population must live in the future as they have done in the past, by the cultivation of the soil and the most helpful service now to be done is to enable the race to follow agriculture with intelligence and diligence” (Washington, 1904, p. 18). Washington was also recognized as an eloquent speaker and a leader in the minority community and emphasized the great need for training minorities in agriculture and was quoted in his speech, *Industrial Education for the Negro* as saying:

We must incorporate into our public school system a larger recognition of the practical and industrial elements in educational training. Ours is an agricultural population. The school must be brought more closely to the soil. The teaching of history, for example, is all very well, but nobody can really know anything of history unless he has been taught to see things grow - has so seen things not only with the outward eye, but with the eyes of his intelligence and conscience. The actual things of the present are more important, however, than the institutions of

the past. Even to young children can be shown the simpler conditions and processes of growth - how corn is put into the ground - how cotton and potatoes should be planted - how to choose the soil best adapted to a particular plant, how to improve that soil, how to care for the plant while it grows, how to get the most value out of it, how to use the elements of waste for the fertilization of other crops; how, through the alternation of crops, the land may be made to increase the annual value of its products - these things, upon their elementary side are absolutely vital to the worth and success of hundreds of thousands of these people of the Negro race, and yet our whole educational system has practically ignored them. Such work will mean not only an education in agriculture, but also an education through agriculture and education, through natural symbols and practical forms, which will educate as deeply, as broadly and as truly as any other system, which the world has known. Such changes will bring far larger results than the mere improvement of our Negroes. They will give us an agricultural class, a class of tenants or small landowners, trained not away from the soil, but in relation to the soil and in intelligent dependence upon its resources. (Washington, 1903, pp. 22-23)

Washington presided over the institution until his death. Tuskegee Institute provided educational opportunities for many minorities, which would not have existed without his leadership. Though Washington did great deeds and was respected within the African-American race, he remains one of the most controversial subjects of black history due to his theory of practical and vocational education (Jones, 1975).

Charles Greene, a graduate of Hampton Institute was brought to Tuskegee Institute in 1888 by Booker T. Washington to serve as superintendent of the school's farm. Known as, "Farmer Greene," he found an opportunity to teach students and local minority farmers lessons in the best methods of farming and to develop a number of ideas in farming methods and techniques. Greene taught the students to plant and put out onion sets in the fall, introduced some important forage plants among local farmers, and was the first to put out Bermuda sod as a pasture at the school (Jones, 1975). Greene's work helped to lay the foundation for the establishment of a definite course of study in agriculture and research in the Tuskegee Department of Agriculture (Jones, 1975).

George Washington Carver was another individual who brought much recognition to the field of agriculture. Carver was a black chemist and scientist who won international fame for his agricultural research. As a young boy, he showed a keen interest in plants and a great desire to learn and later attended Iowa State Agricultural College (now Iowa State University) pursuing a degree in agriculture. Booker T. Washington, founder of the Tuskegee Normal and Industrial Institute for Negroes, convinced Carver to come south and serve as the school's director of agriculture (Jones, 1975).

In 1896, Carver moved to Alabama to join the faculty as head of the Tuskegee Agriculture Department and director of a state agricultural experiment station. At Tuskegee, Carver directed his attention toward soil conservation and other ways to improve crop production (Morgan, 2000). He also studied and researched peanuts enabling him to develop over 300 uses that led to lectures throughout much of the country in an effort to promote peanuts. He wrote pamphlets and bulletins on applied

agriculture and distributed them to farmers across the nation. Carver also began to teach more productive agricultural practices to southern farmers, particularly minority farmers through conferences, traveling exhibits, demonstrations, and lectures. Upon his death, Carver contributed his life savings to establish a research institute at Tuskegee (Morgan, 2000).

According to Ford (1998), over the years, minority ownership of farms and the number of minority farmers have decreased drastically. From 1920 to 1992, the number of minority owned farms has decreased from 925,000 to 18,000. Ford noted that much of the decrease could be attributed to the large number of factory jobs and larger salaries that were readily available. Traditionally, factory jobs have provided for a reliable income, whereas income from farming was dependent on weather and other conditions beyond the control of the farmer. Fearing that farming would not provide enough income for raising a family, many farmers moved away from the land and toward more urban areas.

Booker T. Washington and George Washington Carver, along with other faculty at Tuskegee Institute, were instrumental in their efforts to emancipate the minority farmer from agricultural ignorance. Statistics indicate that less than two percent of the workforce is farmers, and only one percent of that group consists of minorities. Fewer students attending land-grant universities have farm backgrounds, whereas 25 years ago the majority of the students had farm backgrounds (Morgan, 2000). The farm that was once a priority seems to be just a memory.

College Enrollments

According to national data reported by the Patterson Research Institute of the College Fund/ UNCF (1997), minorities continue to be under-represented in the traditional college-aged populations despite increased college and university enrollment rates from 1976 to 1994.

Significant differences, however, exist between groups of students, which reflect differences in access to, and persistence in higher education. For example, in 1996, the college participation rate for minorities age 18-24 was 35.9%, an increase from 30.4% in 1990. Latino students made even greater gains: in 1990, the college participation rate stood at 16.8% and increased to 34.5% in 1996. The college participation rates for both groups, however, are well below those for white students: 45.1% of white high school graduates age 18-24 were enrolled in college in 1996 (NCES, 1997b) College enrollment of Asian American students, on the other hand, surpasses that of whites: 55.1% of 18-24-year olds were enrolled in college in 1990. Within this group, however, college enrollment rates vary significantly. For example, in 1990, 66.5% of Chinese Americans within the 18-24-year-old Asian population enrolled in college, compared to 26.3% of Laotian Americans. Asian-American students were also more likely than African-Americans and Latinos to enroll in four-year institutions. Of the

Asian American students enrolled in college, 60% were at four-year institutions compared to 58% of African-American college students and 44% of Latino college students (Carter & Wilson, 1997).

Similar to differences in college participation rates, racial/ethnic groups also differ in their rates of college completion. Of those who graduated from high school in 1990 and entered college seeking a bachelor's degree, by 1994, 69% of Asian American students either completed their degrees or were still enrolled, compared with 65% of the white students, 53% of the African-American students, and 54% of the Latino students (Carter & Wilson, 1997).

Factors Influencing Enrollment in Agricultural Majors

There are many possible factors influencing enrollment in agriculture majors. These include the student's background, and experiences, influences of family, friends, teachers, school or non-school organizations, perceptions of attitudes towards department, faculty, and advisors. Sivapirunthep (1999) found that parents were the major factor that influenced students to enroll in agricultural science programs. Sivapirunthep also found that half of the students that were enrolled in agriculture programs, had previous work experiences related to agriculture, were also involved in agricultural and vocational organizations, and had attended an agricultural high school.

Baccalaureate Minority Participation

The Food and Agricultural Education Information System (FAEIS) (2004) reported that African-Americans comprised 3.3% (2,044 of 62,776) and Caucasians (non- Hispanics) comprised 81.2% (50,976 of 62,776) of the total baccalaureate students enrolled in the fall 2004 semester at 1890 and 1862 land-grant universities. Some other major findings are given below:

- The academic area with the largest percent of minority enrollment also contained the largest percent of Asian and Hispanic enrollment. With 13% (380 of 2,867) of the African-American enrollment, related biological/physical sciences was the agricultural program academic area with the largest percent of minorities. It was also the academic area with the largest percent of Asian students with 24% (701 of 2,867).
- The agricultural program academic area with the largest percent of Hispanic students reported was animal sciences with 20% (288 of 1,379).
- African American enrollment in agricultural, renewable natural resource and forestry programs comprised 22.3% (228 of 1,018).

There were 11,859 minorities enrolled in agricultural baccalaureate programs in the fall of 2004 at 1890 and 1862 land-grant universities. Data in Table 1 show the enrollment by the ethnicity and Table 2 shows the minority enrollment by academic area.

Table 1 Baccalaureate Minority Enrollment in Colleges of Agriculture, Renewable and Natural Resources, and Forestry for the Fall Semester of 2004 in Relation to the Total Enrollment

Ethnicity	%	% of Total Enrollment
Caucasian	-	86
Unknown	31	4.3
Hispanic	20	2.7
Asian	16.3	2.2
African American	14	1.9
All Non US Citizens	7.5	1.03
Native American	6.5	0.89
Unspecified Minorities	4.2	0.58
Native Hawaiian	0.85	0.12

Note: From “The Food and Agricultural Education Information System” 2004 Can be found at http://faeis.ahnrit.vt.edu/help_desk/faqs_gen.shtml

Table 2 Baccalaureate Minority Enrollment by Academic Area for Minorities in the Colleges of Agriculture, Renewable and Natural Resources, and Forestry for the Fall Semester of 2004

Academic Area	%	Number of Minorities	Total Enrollment
Related Biological/ Physical Sciences	57.7	2,867	7,835
Food Sciences	28.2	307	1,310
General Agriculture	17.9	333	1,851
Soil Sciences	42.7	127	297

Note: From “The Food and Agricultural Education Information System” 2004 Can be found at http://faeis.ahnrit.vt.edu/help_desk/faqs_gen.shtml

Trend information for 2004 baccalaureate minority enrollment shows a slight increase since the previous year. The comparison of the minority participation of the fall of 2003 (8,964 of 62,191) to the fall of 2004 minority participation (11,800 of 62,776) increased by 31.6%, total enrollment increased by 0.9%. The FAEIS (2004) reported that minorities in all baccalaureate programs administered by colleges of agriculture and, renewable natural resources and forestry has decreased exactly to 3,222 students since 1999. In 1999 13.7% (15,022 of 109,099) compared to 18.7% (11,800 of 62,776) of baccalaureate students were classified as minorities in 2004.

Overall, enrollment in baccalaureate programs in agriculture has decreased since 1999. Although there has been an increase in minority participation in agriculture programs, their presence is very small. Minority participation decreased between 1999 and 2004 by 21.4% (FAEIS, 2004; FAEIS, 1999).

Summary of 1862 Land Grant Enrollment

The FAEIS (2004) reported that 1862 Land-grant Colleges of Agriculture, Renewable Natural Resources and Forestry enrolled 12,029 students in the fall semester of 2004 (FAEIS, 2004). African-American students comprised 1.6% (203 of 12,029) of the enrollment in agricultural, renewable natural resources and forestry programs baccalaureate programs. Tables 3 and 4 show percentages by ethnicity and academic disciplines at 1862 land-grant universities:

Table 3 Baccalaureate Minority Enrollment in the Colleges of Agriculture, Renewable and Natural Resources, and Forestry for Fall Semester of 2004 at 1862 Land Grant Universities in Relation to Total Enrollment.

Ethnicity	%	% of Total Enrollment
Caucasian	-	86.5
Unknown	31.5	4.3
Asian	16.6	2.2
Hispanic	20	2.7
African American	12.5	1.7
All Non U.S. Citizens	7.6	1.0
Native American	6.6	0.9
Unspecified Minority	4.3	0.6
Native Hawaiian	0.9	0.1
Total	100	100

Note: From “The Food and Agricultural Education Information System” 2004 Can be found at http://faeis.ahnrit.vt.edu/help_desk/faqs_gen.shtml

Table 4 Baccalaureate Minority Enrollment by Academic Area in the Colleges of Agriculture, Renewable and Natural Resources, and Forestry for the Fall 2004 Semester at 1862 Land Grant Institutions in Relation to Total Enrollment.

Academic Area	%	Number of minorities	Total Enrollment
Related Biological/ Physical Sciences	22.6	1,456	6,424
Food Sciences	16.7	202	1,205
General Agriculture	19.6	299	1,817
Soil Sciences	14.5	114	783

Note: From “The Food and Agricultural Education Information System” 2004 Can be found at http://faeis.ahnrit.vt.edu/help_desk/faqs_gen.shtml

On the graduate level, minorities comprised 15.2% of the total graduate enrollment according to the 2000 FAIES report (1,801 of 11,786). Some other major findings related to minority graduate students were:

- At the master’s levels, 401 African Americans were enrolled of 11,786 for an overall 3.4% participation rate.
- Asians comprised the largest number of master’s degree enrollment with 605, while Hispanics represented the second largest number of students enrolled with 560.
- At the doctoral level, minorities comprised 15.7% (844 of 5,345) of the total enrollment.

The percentages differ little from the national percentages. Minority participation at 1862 Land Grants had decreased to a total number of 853 students between 1999 and 2004, a 40.6% decrease over a 5-year period (FAEIS, 1999; FAEIS 2004).

Experiences of Minorities on College Campuses

The ethnic minority experience is said to be distinctly different from that of majority students at PWI's (Jones, Castellanos, & Cole 2002). Research has indicated that African Americans students may experience an additional burden of stress from other ethnic minority students that would assume the same academic and social stereotypes at a highly competitive academic institution (Jones, Castellanos, & Cole 2002).

Over the past years, researchers have paid a considerable amount of attention to the impact of attending historically black colleges and universities (HBCUs) versus attending predominately white institutions. Much that has been written on the experiences of minority college students addresses the racial discrimination that many have faced while attending predominately white institutions. Numerous researchers have commented on the difficulties many minority students face at PWI's due to racism and a lack of supportiveness. Davis (1991) studied the importance of social support networks and minority undergraduate students academic success related outcomes. Davis stated that social support positively related to health and well being. The more social support received from close relationships with family, friends, acquaintances, co-workers, and the community, the better the individual's well being. Fleming (cited in Davis, 1991) indicated that partly due to differences in social support, minorities at HBCUs differ in

their intellectual and psychological development from minorities at PWI's. Students at HBCUs develop closer relationships with faculty and students, have a greater satisfaction with their academic lives and performance, are more involved with organizations, and have a greater desire to succeed. Students were also more social and adjusted better to campus life and experiences, whereas at PWI's students tended to be separated, less social, and to themselves. Fleming (cited in Davis, 1991) noted that minorities at PWI's reported dissatisfaction with their academic lives and experience and negative attitudes toward teachers whom they felt were unjust when it came to grading and were not supportive of them in their efforts to achieve. In addition, minorities at PWI's did not have a mentor and had limited academic aspirations for achievement.

Jones, Castellanos, and Cole, (2002) concluded that ethnic minorities students in a dominant-cultured campus would experience stress on variety of levels. These included (a) social climate stresses, (b) interracial stresses, (c) racial discrimination, (d) within-groups stresses, and (e) achievement stress.

Social climate stresses referred to the student's view of campus climate that is whether the students feels isolated or underrepresented; such examples of social climate deal with not having multiculturalism incorporated in the curriculum, minimal ethnic faculty representation, and misunderstanding of diversity. From these and other social climate themes, volumes of research have been published to enhance the minority experience in the academy (Jones, Castellanos, & Cole 2002).

African Americans stress consists of two levels: Interracial stresses and racism and discrimination. Interracial stress deals with the interaction of ethnic minorities

outside of the dominant culture, whereas racism and discrimination involves being mistreated or disrespected because of one's race (Jones, Castellanos, & Cole 2002).

Interaction with Faculty and Peers

Interactions with faculty and fellow majority students have been both positive and negative (Horton & Owens, 2004). Negative experiences pertained to not feeling welcome in social encounters with majority students. A student from a focus group commented that a minority professor was tougher on minority students in a class, because of supposedly wanting to prepare them for college life.

Horton & Owens (2004) found that it was evident that students felt that positively interacting with faculty and other students helped them to remain at the university. Students' responses revealed that having faculty assist with advising was a factor that encouraged them to remain at the university. One student in their study recalled the experience of registering for classes: "When I came to register I couldn't get in like any classes and I was here all day I was really upset. Then Dr. _____.... Made me feel better."

Other positive interactions were with majority students. One student from the first focus group commented positively about an experience while living in the residence halls:

Male student: One instance my freshman year here I was kind of down, broke and I didn't have any money then. One guy [a white student], came down and was about to order pizza and he offered it to me and he asked me what kind did I want.

It was for him but he asked me what kind did I want? He was going to share with me. And I thought ...I felt real good about that.

A student- teacher commented that he had made a conscious effort to not focus on or look for negative experiences, but to block out what people had told him about predominately white universities (Horton & Owens, 2004). Horton and Owens found other experiences and interactions among faculty and peers, the expectations extended beyond interactions. The experiences included taking classes under instructors who were not supportive, instructors' stereotypical and prejudicial remarks about minorities, and financial difficulties.

Students were bothered with financial concerns that affected their academic experiences because either they had to work while attending school, spend excessive amounts of money for class projects, traveled away from the university to complete practicums, and incurred transportation costs relating to travel to practicum sites. Sometimes class activities prevented the students from working, which necessitated securing school loans. Additional concerns pertained to purchasing books for classes if the books are never used. A student from the first focus group commented that, if advising a sibling of friend to come to the university to major in education, she would tell them, "You need a car and a lot of money." The following narrative, from the focus group of student teachers reflects beliefs about financial restrictions (Horton & Owens 2004).

Male student 1: Most students are independent, on their own.

Female voice: Right. I mean, because I am. I mean... and last semester I was at a very.... A disadvantage because I didn't work. You can't ... I was in [completing a practicum in a town 28 miles from the university], I couldn't work.

Male student 1: You can't work?

Female student: I couldn't work. And that was the first six months that I have not worked. And I almost.... I cried everyday. I didn't know how I was going to make it, how I was going to get gas in my car. And my parents... they would have ... they helped me, but I just would have had ... I was at a disadvantage because I wasn't used to that, you know. (Horton & Owens p.96)

A student in the second focus group also commented about the financial restraints and not having the same level of funds that majority students had.

Male Student 2: Okay, if I give up my job then, I have to give up school. And ...and the job was not you know, interfering with my school work, so like she said ... maybe that's what I should do and I felt my own way about it. And then she told It was like may be three, three I believe... three or four African American students in the class, and she had told one of them because all of them were having the same problem... she told them she said I'm harder on you all because I know it's going to be harder on you, you know. (p.96)

In addition, students were asked to describe how they handled challenging experiences. When asked about networking with majority students to reduce financial expenses, minority students named reasons pertaining to interactions with peers. The interactions relate to what Lewis, Chesler, & Forman (2000) refer to as "interpersonal

awkwardness.” The same female student teacher who commented about costly travel to school sites also spoke on the topic of interacting with white peers.

Dr. Horton: Did you feel comfortable car-pooling with white students?

Female Student: Yes, I mean I did. No, I didn't. No I didn't. No I didn't, because we tried that. We tried that the first two weeks. And they made us feel so uncomfortable that, you know, your person that you're supervising now [another minorities students who also rode with the same group of majority students]. (p. 96)

Dr. Horton: They didn't include you all?

Female student: They didn't include us. I mean ... and we'd gone through classes for the past three or four semesters with these students and we thought, you know ... well, they're okay. But, when it came down to being around them everyday, that was a no-no. (p. 97)

Howard-Hamilton (1997) recommended to educators and administrators to learn to infuse student development theories that are applicable to the minority culture in that they are able to empower and motivate minorities to succeed on college campuses. Other authors (Harris, 1995) have pointed out that many of the present student development theories are not applicable for minority students due to cultural differences. When attempting to infuse developmental issues of minorities in existing theories. McEwen, Roper, Bryant, and Langa (1990, p. 430) suggested the following:

1. *Developing ethnic and racial identity*: inculcating ethnic diversity, information, and facts of African self-consciousness development.

2. *Interacting with the dominant culture*: discussing acculturation, assimilation, and association with white students on campus.
3. *Developing cultural aesthetics and awareness*: understanding and appreciating other's cultures as well as one's own.
4. *Developing identity*: enhancing one's own unique and diverse characteristics, societal interaction, and group identification.
5. *Developing interdependence*: establishing personal relationships amid some separation from immediate family but with development of extended campus family.
6. *Fulfilling affiliation needs*: satisfying minority students' social needs outside the campus community.
7. *Surviving intellectually*: challenging minorities to compete with those who had educational privileges preparing them for the academic rigors of college.
8. *Developing spirituality*: understanding the role and importance of religion and spirituality in the growth and development of minorities.
9. *Developing social responsibility*: coming face-to-face with real and perceived social inequalities, thus becoming social advocates on campus.

University Climate

The 1954 *Brown vs. Board of Education of Topeka, Kansas* was a monumental court decision that dramatically changed the demographic landscape of higher education (Allen, 1992). The *Brown* case mandated that all public educational divisions abolish

their segregation policies and enroll minorities in their respective institutions (Allen, 1992). After the mandate, PWI's developed recruiting initiatives and educational opportunities to attract talented minorities to their institutions (Davis, 1998). Unfortunately, many of African- American students found it difficult to adjust to the environment.

Minorities at PWI's sometimes feel the burden of discrimination. PWI's can be a hostile and non-supportive environment for Minorities, although many still attend and have graduated from them. Fleming (1984, p. 24) found that in white institutions, "from a theoretical point of view, minorities experienced feelings of disconnectedness and that a process of alienation could be observed." These students did not report that they experienced academic and social integration or feelings of belonging. These students were perplexed because they were admitted with good academic credentials and did not expect to experience feelings of an outsider. These negative experiences thwarted academic development because the environment was not inviting. Fleming concluded that faculty involvement could probably reverse these negative experiences by engaging the students in college activities that would utilize their intelligence, enthusiasm, and energy.

Horton and Owens (2004) found that students commented that university departments and organization practice policies that were more supportive of white students. These findings relate to Lewis, Chesler, & Forman (2000) findings that white students are not always aware of how their behaviors negatively affect Minorities. Other authors termed the experiences as "exclusion and marginality" (Lewis, Chesler, &

Forman 2000). For example, when selecting entertainers to come to the campus, the university chose mainstream groups that mostly majority students listened to.

Financial Aid and Demographics

The escalating cost of higher education prohibits many minority students from considering higher education. A recent pronouncement from the U.S. Department of Education (1995) regarding minority scholarship programs will make it more difficult for many minorities to afford college. Hytche (1992) concluded that just as athletic departments and programs can develop attractive financial packages to attract students, so can the agricultural systems. He stated that we should solicit funds from alumni, the agribusiness sector, corporations, faculty, and federal agencies to help with providing money. In addition, cooperative education and paid internship programs could contribute to the financial package of the students to play a significant role in attracting and retaining minorities. It would also enable them to be part of the career decision-making process.

Lack of financial aid in the form of grants and scholarships is a major deterrent to minorities' choice to attend college (Stewart, Russell, & Wright, 1997). A large proportion of federal grants to minorities have been replaced by loans. Loans are often a disincentive for many minorities who are reluctant to incur large debts (Thomas & Thurber, 1999).

The reduction in grant and scholarship-based aid, coupled with rising costs of tuition, room and board and related college cost, makes it extremely difficult for many

minorities to attend college. College and universities with a commitment to increasing minority enrollment must find ways to provide financial aid to students when they are making admissions decisions (Thomas & Thurber, 1999).

Culture, Race, and Minority Perceptions of Faculty

McCray (1994) noted that culture refers to the totality of the ways of life of a people and includes the basic conditions of existence, behavior, style of life, values, preferences, and the creative expressions that emanate from work and play. It is a toolkit that provides people with stories, symbols, and world-views that will enable people to solve problems that they may encounter. Gibbs (1988, p.12) asked the question, “Would it remain necessary to implement programs to enrich a specific ethnic group?” According to Gibson and Ogbu (1991), how students handle cultural differences depends on how school officials integrate those differences into the mainstream culture. As early as 1903, DuBois felt that it was too bad that we have to use the word “cultural” for so many meanings. In modern scientific thought, it means that millions of men and women who for three centuries have shared common experiences, common sufferings, and have worked many days and nights for their survival and progress must not be lost. Education is a one way to overcome obstacles and prepare for the future. When students are involved in learning, they are able to capitalize off their negative experiences motivating them to doing better (McCray, 1994).

Minorities have a limited amount of established resources to affirm their identity and to connect with their cultural heritage at PWI's. As a result, minorities often find it

“necessary to create their own cultural networks to remedy their exclusion from the wider white oriented university community” (Allen, 1992, p. 29). Wardlow, Graham, and Scott (1995) found that African Americans expected more than they were actually receiving from PWI’s. The authors also found that this contributed to minority students segregating themselves from other groups.

Wardlow, Graham, and Scott (1995) conducted a qualitative study on minorities’ perceptions of agriculture, the influencers in the career-decision making process, and the barriers encountered by minorities pursuing education and careers in agriculture. In nearly all the cases in the study, many were influenced to pursue agriculture while in high school and college by professionals in the field. Community based professionals in agriculture, such as a high school agriculture teacher or an agriculture extension agent, were identified as important influencers. A respondent stated:

I made my mind up in high school. I noticed that the Ag teacher had the respect of the students and most all of the teachers. They made more money because they worked longer. I chose agriculture when I got into college because (an agriculture professor) talked me into it. Many of my friends in agriculture were majoring in education. I chose that because of the people . . . and an Ag teacher in high school (p. 3).

After making the decision to continue their education, many of the respondents in the study also noted the barriers they had encountered during their pursuit of their agricultural degree (Wardlow, Graham, & Scott et al., 1995). They perceived many of the

barriers to be based on race. Nearly all who had studied agriculture at a PWI reported encountering race-related bias in college classes. One respondent stated:

I went to a predominately white institution, so it was definitely some isolation that occurred there. I had one instructor who, once he found who I was (minority student), I had made the highest score (previously in class)...I had a very difficult time making a “C” after that (p. 4).

A second respondent described a similar situation at an 1862 Land Grant institution:

You walk in the classroom and the teacher tells you point blank, “You are going to make a “C.” It makes no difference, you can make straight one hundreds on the tests, and they’re going to find something wrong with your paper (p. 4).

A third respondent described his experience in a college class:

When I started class, the teacher looked up at me and said, “I see two D’s and a possible F.” I looked around the room and there wasn’t but two minorities in there and I realized who he was talking about (p. 4).

A fourth respondent described his experiences with instructors in university classrooms:

They talk to the other side of the room and never talk to your side. The way they never ask you a question and assume you don’t know the answer. You may know the answer, but they don’t even give you the chance to give you the chance to give the answer. You really can’t put on paper what people are doing to you, but you can feel it if you are in that class (p. 4).

The majority of the participants studied believed that adults with whom they came into contact often had an impact on their decision. They further noted that influence may not lead to an immediate decision to enroll in agricultural programs. According to the participants, minority youth tend to follow the experiences of successful older youth from the community. They discussed a “pipeline effect” in which students would pursue specific studies at specific institutions if older peers have had positive experiences in those institutions. They agreed that negative experiences could affect the pattern in a negative way. The respondents in this study also believed that it was important for students to see agriculture as providing good economic opportunity for a career, and that the general level of awareness about agricultural opportunities must be raised by providing more exposure of youth to successful agricultural professionals. Teachers were identified as a great influence and the need for minority agriculture teachers in high school was voiced. Adults in the study felt that students are in need of role models and that minority agriculture professionals should be available to serve as role models.

Minorities in the Agriculture Industry

The Office of Human Resources Management (OHRM) in the USDA developed a Student Employment Program Report (SEPR). SEPR is an important recruiting resource designed to help agencies eliminate the under-representation of minorities and women in the Department of Agriculture (USDA). OHRM's student report (2000) indicated that USDA's recruitment of students remained almost constant for 2000 while strides were made with efforts to hire minorities. American Indians showed a large increase in the

number of students and in their percentage in the student population. American Indians represented 302 students, an 83% increase from 164 in 1999. African American students had a slight percentage increase of 1.5%. Hispanic students decreased by 2.9% overall but they increased their numbers in the career experience program which leads to permanent status. White and Asian student employment remained almost constant representing 64.5% and 4% respectively. African Americans represented 35.5% of the student employment in the USDA. This was an increase over 1999 percentage of 34.2%.

Other highlights in OHRM's student employment report (2000) were:

- The representation of American Indians in USDA raised from 164 students in 1999 to 302 students in 2000.
- The representation of white students remained almost constant. They represented 64.5% of all students in 2000. White students numbered 3,432.
- The representation of Hispanic students in the Career Experience Program increased from 91 students in 1999 to 103 students in 2000.
- The representation of Asian students in USDA raised slightly from 211 students in 1999 to 212 students in 2000.
- The percentage of African Americans increased from 16.8 percent in 1999 to 18.3% in 2000. African Americans constitute 76 students.

The overall student employment covered in this report decreased by 14 positions from 5,334 students in FY 1999 to 5,320 students in August 2000. However, the total number of students in most minority groups increased. All minority groups increased for

2000. Data in Table 5 represent the student employment trend 1999 and 2000 reported by the USDA:

Table 5 Student Employment for the USDA in 1999 by Ethnicity

Year	Total	White	Black	Hispanic	Asian	Native American
2000	5,320	3,432	976	398	212	302
1999	5,334	3,512	894	553	211	164

Note: United States Department of Agriculture. (2000). Student employment program report. Office of Human resources Management, USDA. Washington, D.C.

Views on Future Minority Recruitment in the Agricultural Sciences

Hytche (1992) asserted that a national initiative focusing on minority human expertise development must be our priority for the agricultural sciences if the discipline intends to play its role in maintaining a stable professional workforce. He contended that necessary steps needed to be taken and could be classified into four segments: early intervention, pre-college intervention, college, and post-baccalaureate programs. Some examples of the four segments that Hytche proposed to help attract minorities:

Early Intervention (Pre-High School) Programs

Saturday Academy: A faculty member could devote three or four hours one Saturday per month to bring at-risk minorities students onto campus and expose them to some of the activities of Agriculture in the Classroom of the USDA. The time could also

be used for students to conduct independent science experiments, stimulate their thinking, and enhance their interest in and perception of agriculture.

Motivational Sessions: Faculty could conduct motivational sessions with minorities. The lives of many of our minority youth are devoid of positive experiences. Sessions in goal setting, leadership development, and social values could prepare them for outstanding future careers. Many minority youth need constant reminders that there are opportunities for them.

Pre-college Intervention

Minority Research Assistance Program: In this program, minority high school juniors and seniors who are in the upper third of their classes are invited to spend the summer on campus with scientists. They will conduct independent science projects and computerized literature searches and are provided a laboratory science orientation to the agricultural sciences. They are also paid a stipend.

Summer Scholars Program: Outstanding students are invited to spend time on campus for one to two months to participate in some agricultural science activities for college credit. This will provide an opportunity for faculty to observe student performance; for students to establish contacts; develop mentor relationships and decide on career options; and for universities to award scholarships to deserving minorities students.

College

Effective Mentoring Program: We have many first-generation minority college students and the number will continue to rise. Many of these students lack role models, and their history and knowledge of agriculture are reminders of the enslavement and work that they were once required to do in the fields. The students are without supportive families, and many who have graduated indicate that their greatest fortune was finding a mentor with whom they built a positive relationship.

Post-baccalaureate Programs

Hytche (1992) noted that, although the undergraduate enrollment has recovered that was lost in the early 1980s, the Minority enrollment in graduate programs is still on the decline. The lack of mentors at schools that offer most of the graduate programs may be contributing factor. Few minority doctorates are being awarded, so there is a lack of existing faculty for the students to look to for guidance. An increasingly diverse graduate student body is the most important means toward a more diverse faculty. The belief is that the majority of minorities will attend only HBCUs, and if they do not have the programs, it results in a shortage of minority faculty. Expanding and diversifying enrollments in colleges of agriculture is the most important means of diversifying faculty ranks to meet the challenges in the future.

Reevaluation of Entrance Requirements

Many minorities are casualties of standardized testing, and the perils of growing up as a minority. The scores that students achieve on the Scholastic Aptitude and American College tests often do not reflect the academic potential of students, particularly Minorities. The summer scholars program mentioned above could provide the opportunity for a more effective evaluation of selecting students that have an interest and desire to pursue the field.

High Profile Recruitment and Marketing Initiatives

Hytche (1992) stated that most educators are engaged in some initiatives to recruit minorities. However, he noted that we as agricultural educators need to go beyond the traditional approach of recruiting and embark upon a national advertising program similar to that done by the National Science Foundation, the U.S. Army, and others. Hytche (1992) suggested minority audiences be targeted with specially designed, high profile, nationally televised advertisement and develop appropriate career oriented recruitment brochures and videos that could be distributed in the high schools.

His last suggestion was that we not rely exclusively on recruitment contact and referral slips, but rather, we should establish and maintain constant contact with prospective students and parents through letters, postcards, telephone calls, and when feasible, personal contact.

Liaison Relationships

Liaison relationships should be established between the 1862 land-grant institutions and the institutions with significant undergraduate minority enrollments such as the 1890 land-grant institutions. This could be accomplished through summer internship and/or joint research activities in which minorities could participate (Hytche, 1992).

Hytche (1992) concluded by stating that we are doing a good job of educating the majority population, but he emphasized the great need to diversify the agricultural sciences. Minorities still lag behind in terms of percentage of college graduates in the agricultural sciences. If change is to occur, colleges and universities must help to reduce the barriers, which can be accomplished through better recruitment, admission policies, and attractive financial aid packages. In addition, the colleges and universities will need to be more innovative and establish support services such as mentoring, advising, and outreach programs for minority students to help them deal with the potential issues that they may encounter within their departments and on the campus.

Summary

African Americans have been involved in agriculture since the 1800's; through the Morrill act of 1890 African Americans have educated each other in the field of agriculture because of people such as Booker T. Washington and George Washington Carver, African Americans can embrace the opportunities in agriculture and in other science fields. However, today it is assumed that African Americans are drawing away from agriculture because that associated it with slavery. It is not why there are few

minority students enrolled in agriculture sciences. Baccalaureate minority participation at 1862 land grant universities is small for a variety of reasons.

Some African American students are comfortable attending a 1890 Land Grant school because of the more likely chance they will sit in a classroom with other people of color. It is also possible that family members or friends may have had negatives experiences at an 1862 Land Grant university and have encourage the student to attend a 1890 or an HBCU as a result of their experience. Their experience may have created a perception to the student that they will experience the same experience if they attend a predominantly white university.

We do know from previous studies (Sivapirunthep, 1999) that are cited in the review of literature parents are a major influence that could possible determine what a student could choose as a major of study. Most minority students come from low income families, and are looking for universities that can award scholarships, and grants to pay for school. Some minorities also want to choose a university that is close to home to be with their families.

It is important to increase more students in the agricultural science programs. This will create a more diverse workforce in the agriculture industry. Liaison relationships between 1890 and 1862 land grant universities are important this could have an impact on the student to attend graduate school that the 1862 after graduation.

CHAPTER III

METHODOLOGY

The methodology chapter is divided into seven primary sections: (a) the design of the study, (b) setting for data collection, (c) population, (d) instrumentation, (e) pilot study, (f) data collection, and (e) data analysis.

Minorities have been and continue to be under-represented in most areas of the agricultural sciences. The purpose of this study is to identify the factors that most influence minorities to enroll in agricultural science programs at 1890 and 1862 Land Grant universities.

Answers to the following research questions were sought in this study.

1. What are the demographic characteristics of African American students enrolled in the agricultural sciences at the 1890 and 1862 land grant universities?
2. What are the students' past experiences related to agriculture?
3. What are the factors that influence African Americans to enroll in agricultural science programs?
4. What were the factors that influenced African Americans to enroll at their present university?

5. How do attitudes of African American students attending 1890 and 1862 land grant universities compare in regards of their relationship with their academic advisor?
6. How do attitudes of African American students attending 1890 and 1862 land grant universities compare in regards of their relationship with their professors?
7. How do attitudes of African American students attending 1890 and 1862 land grant universities compare in regards of their relationship with students within their department?
8. How do attitudes of African American students attending 1890 and 1862 land grant universities compare in regards to their satisfaction with their agricultural science program experience?

Design of the Study

This study used a quantitative approach in researching the problem of identifying the factors that led minorities to enroll in agricultural science programs at 1862 and 1890 land-grant institutions. The researcher used a descriptive survey method. A survey instrument was designed which collected the factors, demographics, and attitudes that influenced minority enrollment in agricultural sciences at 1890 and 1862 universities.

Setting for Data Collection

The setting for the data collection in this study is 1890 and 1862 land grant universities in the southern states of Alabama, Georgia, Louisiana, Mississippi, and

Florida. These states were chosen because their close proximity to Mississippi State University and their willingness to participate in this study. The universities that are in this study are as follows:

1890 Universities	Location
Alabama A&M University	Normal, AL
Alcorn State University	Alcorn State, MS
Florida A&M University	Tallahassee, FL
Fort Valley State University	Fort Valley, GA
Southern University and A&M College	Baton Rouge, LA

1862 Universities	Location
Auburn University	Auburn, AL
University of Florida	Gainesville, FL
Louisiana State University	Baton Rouge, LA
Mississippi State University	Starkville, MS
University of Georgia	Athens, GA

Population

The population in this study consists of African American undergraduate students at 1890 and 1862 Land Grant universities. The students were selected from colleges within the university where the agriculture component is taught.

Instrumentation

The instrument was designed after an extensive review of literature to collect data on the factors that influence minorities to enroll in agricultural science programs at 1862 and 1890 land-grant institutions. In planning and designing the survey instrument, the researcher used a similar instrument created by Sivapirunthep (1999). After searching

literature on minorities in higher education and in the agricultural sciences, these studies was used to compare questions and items that should be asked to gather data in this study.

The instrument (Appendix A) was divided into three parts: demographic information, college experiences, and attitudes towards advisors, faculty, and students. The five-page survey contained sections to gather information on the student's influence, experiences, attitudes, and demographic information.

Part I was used to gather information on respondent's experiences as well as information on influences on selection on college/ university and major, questions 11-14 contain statements that are on a Likert type scale. Part II was designed to gather respondent's attitudes towards academic advisor, professors, other faculty, students, university climate, and overall satisfaction. Part III was used to gather demographic data. The respondents were asked to answer nine questions answer yes or no, or fill in the blank.

Pilot Study

The pilot study was conducted at North Carolina Agricultural and Technical State University and Texas A&M University. The dean at North Carolina A&T and the associate dean at Texas A&M University were contacted by email requesting permission to distribute surveys to African American students in the agricultural sciences. Thirty students were surveyed at North Carolina A&T and 20 were surveyed at Texas A&M, both the dean and associate dean distributed and collected the surveys.

The survey instrument was pilot-tested in accordance with the techniques by Dillman (1978). Dillman (1978) suggested that: the group reviews the survey to ensure that it accomplishes the objectives of the study. Next the group provides substantive knowledge of the survey topic, and that the group consists of individuals from the population being studied. The pilot-study was utilized to: (a) eliminate ambiguities in the overall structure of the instrument, (b) determine whether the questions were worded appropriately, and (c) determine whether the survey would elicit responses that would allow respondents to provide the necessary information required for the study.

Data Collection

Initial preparation for the collection of data for this study began with approval from the Institutional Review Board for Research Using Human Subjects (IRB). After completing the necessary forms and submitting a proposal of the study, the researcher also attached a copy of the instruments that would be used to gather data to the IRB. When approval was granted (Appendix C), the researcher began the data collection process. The data collection in this study was completed through the use of a survey developed by the researcher. The survey targeted African American students at 1890 and 1862 Land Grant Universities.

The students selected as respondents in this study were enrolled in agricultural programs. After gaining approval to send packets to the deans and associate deans with surveys with stamped envelopes for the students to send back to the researcher. The researcher included a cover letter (Appendix B) to the survey that explained the

importance of the study, and the significance that occurred as a result of them participating in giving their perceptions and input. It was further explained that no one was obligated to complete the survey, and anyone interested in participating would do so on a voluntary and willing basis.

An informed consent form was included within the survey instrument packets for the respondents to return to the researcher. The consent form was used to explain and clarify several items and questions that the students might have questions before they were willing to participate. The consent form provided the name of the researcher, the topics, and a brief summary of the study. The form also helped to ensure the confidentiality of the respondents' answers. The data collection procedures along with the risks and the benefits of the study were also explained on the form.

Data Analysis

The data collected through the survey instrument in this study were analyzed using the Statistical Package for Social Sciences (SPSS) Version 10.0. Each research question to the study was answered through the survey questions contained in the instrument. Research questions 1 and 2 were analyzed through descriptive statistics. Research questions 3 and 4 were analyzed through means and rank; these questions have been reversed coded to make the higher means the most selected by the respondents. Research questions 5, 6, 7, and 8 were analyzed through descriptive statistics and Pearson's Chi-Square Test of Independence. The strength of correlation was measured by the directional measure "Eta" to describe questions 5, 6, 7, and 8. The strength of

correlation will be established according to Davis (1971). This was used to determine the strength of the relationship of each question in contrast to 1890 and 1862 land grant universities. Table 6 shows the strength of correlation according to Davis.

Table 6 The Davis (1971) Conventions

The Magnitude of a Correlation	Characterization
± 0.70 or higher	A Very Strong Association
$\pm 0.50 - 0.69$	A Substantial Association
$\pm 0.30 - 0.49$	A Moderate Association
$\pm 0.10 - 0.29$	A Low Association
$\pm 0.01 - 0.09$	A Negligible Association
± 0.00	No Association

CHAPTER IV

FINDINGS

The purpose of this chapter is to present the findings of the study. The findings are based on the data collected from the 172 undergraduate African American students enrolled in agriculture majors at 1890 and 1862 land grant universities. The presentation of the findings is organized around the specific research questions.

Pilot Study

The pilot study took place at North Carolina A&T University and Texas A&M University. Reliability was determined by the test – retest item correlation procedure. The first administration of the instrument yielded 38 responses. The retest yielded 35 responses. The surveys were administered at an average interval of 10 days.

The test-retest item correlation ranged from $r = .750$ to $r = 1.00$. To estimate overall reliability for the instrument, individual question correlation coefficients were converted to Fischer's Z, and the mean for all questions was then converted back to r (Hopkins & Glass, 1978). The acceptable r was at a minimum of .750. The overall test-retest reliability for the instrument was $r = .990$. The r for each item is presented in Appendix D.

Research Question One

Research question one was to describe the demographic characteristics of African American students enrolled in the agricultural sciences at the 1890 and 1862 land grant universities. While means were used to describe the age of these undergraduate students, frequencies and percentages were used to describe their gender, major, classification, and parental information.

Age

The mean age of the respondents was 22.1 years. The age range of the students was between 18 and 50 years.

Gender

At 1890 land grant universities 56 or 46.7% of the respondents were male and 64 or 53.3% were female. At 1862 land grant universities 11 or 21.2% were male and 41 or 78.8% were female. Table 7 shows the frequencies and percentages of respondents by gender.

Table 7 Frequencies and Percentages of Respondents by Gender

Gender	<u>1890</u>		<u>1862</u>	
	f	%	f	%
Male	56	46.7	11	21.2
Female	64	53.3	41	78.8
Total	120	100	52	100

Major

Respondents reported 14 separate majors. The frequency and percentage of students in each major are presented in Table 8. Twenty-three (19%) of the students at 1890 land grant universities were majoring in agribusiness. At the 1862 land grant universities, 13 (26%) of the students were majoring in animal science.

Table 8 Frequencies and Percentages of Respondents by Major

Major	<u>1890</u>		<u>1862</u>	
	f	%	f	%
Agriculture Education	9	7.5	5	9.8
Agriculture Business	23	19.2	2	3.9
Agriculture Economics	18	15.0	7	13.7
General Agriculture	10	8.3	0	0
Plant and Soil Sciences	18	15.0	5	9.8
Animal Science	15	12.5	13	25.5
Agronomy	3	2.5	0	0
Food Science	15	12.5	4	7.8
Nutrition	5	4.2	1	2.0
Entomology	0	0	1	2.0
Biological Science	0	0	8	15.7
Agricultural Communications	0	0	1	2.0
Aquaculture	0	0	2	3.9
Environmental Sciences	4	3.3	2	3.9
Total	99	100	51	100

Classification by Undergraduate Class Level

The students that attended both 1890 and 1862 land grant universities were predominately seniors. Table 9 shows the frequencies and percentages of respondents by class level.

Table 9 Frequencies and Percentages of Respondents by Class Level

Classification	<u>1890</u>		<u>1862</u>	
	f	%	f	%
Senior	56	47.1	21	41.2
Junior	28	23.5	15	29.4
Sophomore	25	21.0	4	7.8
Freshmen	10	8.4	11	21.6
Total	119	100	51	100

Parental Information

Seventy-four (43.3%) of the respondents stated that both of their parents attended college, 37 (21.6%) of the respondents stated that only their mother attended college, 11 (6.4%) of the respondents stated that only their father attend college, and 49 (28.7%) of the respondents stated that neither of their parents attended college. Table 10 shows the frequencies and percentage of respondent's parents who attended college.

Table 10 Frequencies and Percentages of Respondents Parents who Attended College

Parents attending college	<u>1890</u>		<u>1862</u>	
	f	%	f	%
Yes, both parents attended college	45	37.8	29	55.8
Only mother attended college	25	21.0	12	23.1
Only father attended college	9	7.6	2	3.8
Neither parents attended college	40	33.6	9	17.3
Total	119	100	52	100

Seventeen (9.9%) of the respondents stated that both of their parents attended their university, 19 (11.0%) of the respondents stated that only their mother attended their university, 13 (7.6%) of the respondents stated that only their father attended their university, and 123 (71.5%) of the respondents stated that neither of their parents attended their university. Table 11 shows the frequencies and percentages of students attending their parents' university by university type.

Table 11 Frequencies and Percentages of Students Attending their Parent's University

Parents attended the University	<u>1890</u>		<u>1862</u>	
	f	%	f	%
Both parents attended the university	14	11.7	3	5.8
Only mother attended the university	15	12.5	4	7.7
Only father attended the university	8	6.7	5	9.6
Neither parents attended the university	83	69.2	40	76.2
Total	120	100	52	100

Thirty-one (18%) stated that their parents own, lease, or tenant farm a farm or ranch. Twenty (11.6%) of the respondents stated that their parents work for a government agriculture agency. Table 12 shows frequencies and percentage of parent's work experiences related to agriculture.

Table 12 Frequencies and Percentages of Parent's Work Experiences

Parent work experience	<u>1890</u>				<u>1862</u>			
	<u>Yes</u>		<u>No</u>		<u>Yes</u>		<u>No</u>	
	N	%	N	%	N	%	N	%
Do parents tenant farm or ranch	26	21.7	94	78.3	5	9.6	47	90.4
Do parents work for an agricultural agency	16	13.3	104	86.7	48	92.3	4	7.7

Research Question Two

Research question two was to describe African American students' past experiences related to agriculture. Frequencies and percentages were used to describe undergraduate work experiences and high school agriculture experiences.

Student Work Experiences

Thirty-Three (25%) of the respondents stated that they had farm or ranch experience on a home farm. While another 32 (18.8%) stated that they had been a farm employee. Ninety (52.3%) stated that they had other work experiences related to agriculture. One hundred and twenty-seven (74.7%) stated that they had other work experiences. Table 13 shows frequencies and percentages of student work experiences.

Table 13 Frequencies and Percentages of Students' Work Experiences

Student work experience	<u>1890</u>				<u>1862</u>			
	<u>Yes</u>		<u>No</u>		<u>Yes</u>		<u>No</u>	
	f	%	f	%	f	%	f	%
Farm or ranch experience	37	30.8	83	69.2	6	11.5	46	88.5
Other Farm employee	28	23.7	90	76.3	4	7.7	48	92.3
Other work experiences related to agriculture	70	58.3	50	41.7	20	38.5	32	61.5
Other work experiences	89	74.8	29	24.4	38	74.5	13	25.5

High School Agriculture Experiences

Eighty-two (47.4%) stated that a high school agriculture program did exist at their high school. Fifty-six (32.6%) stated that they did take agriculture courses in high school.

Table 14 shows student's high school agriculture experiences.

Table 14 Frequencies and Percentages of High School Agriculture Experiences

High School agriculture experiences	<u>1890</u>				<u>1862</u>			
	<u>Yes</u>		<u>No</u>		<u>Yes</u>		<u>No</u>	
	f	%	f	%	f	%	f	%
Did your high school have an agriculture program	55	45.8	65	54.2	27	51.9	25	48.1
Did you take any agriculture courses in high school	45	37.5	75	62.5	11	21.2	41	78.8

Participation in Agriculture Organizations

The 172 respondents were asked to indicate the activities in which they previously participated in high school. The students were asked whether they participated as an officer, a member, or did not participate. Table 15 shows student's participation in agriculture organizations at 1890 land grant universities while Table 16 shows students participation in agriculture organizations at 1862 land grant universities. At 1890 land grant universities 36% of the students participated in 4-H, while FFA had a participation percentage of 36.1%. FBLA had a participation percentage of 38.5% for students enrolled at 1862 land grant universities followed by 4-H with a participation percentage 21.1%.

Table 15 Frequencies and Percentages of Students that Participated in Agricultural Organizations at 1890 Land Grant Universities

Agriculture organizations	<u>Officer</u>		<u>Participated</u>		<u>Did Not Participate</u>		<u>Total</u>	
	f	%	f	%	f	%	f	%
4-H	19	16.1	23	19.5	76	64.4	118	100
FFA	17	14.3	26	21.8	76	63.9	119	100
FHA	5	4.3	14	12.2	96	83.5	115	100
DECA	7	6.2	9	8.0	97	85.8	113	100
OEA	3	2.7	3	2.7	107	94.7	113	100
FBEA	3	2.7	1	0.9	109	96.5	113	100
HERO	0	0	9	8.0	103	92.0	112	100
TSA	3	2.7	7	6.2	103	91.2	113	100
FBLA	9	7.7	22	18.8	86	73.5	117	100

Table 16 Frequencies and Percentages of Students that Participated in Agricultural Organizations at 1862 Land Grant Universities

Agriculture Organizations	<u>Officer</u>		<u>Participated</u>		<u>Did Not Participate</u>		<u>Total</u>	
	f	%	f	%	f	%	f	%
4-H	5	9.6	6	11.5	41	78.8	52	100
FFA	3	5.9	5	9.8	43	84.3	51	100
FHA	1	2	3	5.9	47	92.2	51	100
DECA	2	4	3	6	45	90	50	100
OEA	1	2	0	0	50	98	51	100
FBEA	0	0	0	0	50	100	50	100
HERO	1	2	0	0	50	98	51	100
TSA	0	0	0	0	50	100	50	100
FBLA	8	15.4	12	23.1	32	61.5	52	100

Research Question Three

Factors

Research question three was to identify what factors influenced African American students to enroll in agriculture science programs. Respondents were asked to identify how important each factor was in their choosing their major. To determine the level of importance, students were given items on a 7 point likert type scale that ranged from VI =

Very Important to VU = Very Unimportant. Factors receiving the highest ratings was: “It would ensure a good income,” “Successful prior experience in agriculture,” College teacher or advisor suggested it,” and “A chance to make better grades.” Factors receiving the lower ratings were: “My spouse suggested it,” “My friends were in this major,” “High school agriculture teacher suggested it,” and I was involved in organizations such as 4-H and FFA. Means and rank in Table 17 was used to determine that overall all importance in student’s choice of major.

Table 17 Means and Rank of Important Factors in Student’s Choice of Major

Important factors	<u>1890</u>		<u>1862</u>	
	\bar{X}	Rank	\bar{X}	Rank
It would ensure a good income	5.97	1	6.74	1
Successful prior experience in agriculture	5.00	2	5.40	5
I had a course related to agriculture high school	4.31	5	5.37	6
I was involved in organizations such as 4-H and FFA	3.89	7	4.45	8
College teacher or advisor suggested it	4.54	3	5.75	3
High school agriculture teacher suggested it	3.87	8	5.34	7
Chance to make better grades	4.44	4	6.09	2
My family thought this would be best	4.20	6	5.62	4
My friends were in this major	3.35	9	4.13	9
My spouse suggested it	2.56	10	3.94	10

Note: VI = Very Important, FI = Fairly Important, SI = Somewhat Important,
 U = Undecided, SU = Somewhat Unimportant, FU = Fairly Unimportant,
 VU = Very Unimportant

Individual Influences

To determine who the most influential person in the respondent's decision to enroll in an agriculture science program students were given statements on a 7 point likert type scale that range from CI= Completely Influential to CN= Completely Not Influential. Students at 1890 land grant universities reported that their top three influences were mother, college teacher or advisor, and vocational agriculture teacher. Students at 1862 land grant universities reported there three top influences were mother, college teacher or advisor, and father. Table 18 shows the means and rank of individual influence for student choice to enroll in their agricultural science program.

Table 18 Means and Rank of Individual Influence for Student Choice to Enroll in an Agriculture Science Program

Individual Influences	<u>1890</u>		<u>1862</u>	
	\bar{X}	Rank	\bar{X}	Rank
College teacher or advisor	5.41	2	6.42	2
Vocational agriculture teacher	5.34	3	5.65	7
Mother	5.52	1	6.56	1
Former Student	5.08	5	6.27	3
Relative	5.02	6	6.22	4

Table 18 (continued)

Individual Influences	1890		1862	
	\bar{X}	Rank	\bar{X}	Rank
Father	5.20	4	6.27	3
Dean of agriculture	4.95	8	5.67	6
County extension agent	4.63	9	4.94	12
College friend	4.99	7	6.18	5
Veterinarian	4.80	14	4.35	13
Clergy	3.65	16	3.98	15
High school friend	4.50	11	5.29	9
Home economics teacher	3.68	15	4.02	14
Brother	4.13	13	5.04	10
Sister	4.57	10	4.96	11
Principal or guidance counselor	4.30	12	5.52	8

Note: CI = Completely Influential, MI = Mostly Influential, SI = Somewhat Influential, U = Undecided, SN = Somewhat Not Influential, MN = Mostly Not Influential, CN = Completely Not Influential

Research Question Four

Research question four was to identify the important factors that persuaded students to enroll at their present university. Each question was in the form of a 7- point likert type scale. The scale ranged from VI = very important to VU = very unimportant.

The three most important factors at 1890 land grant universities were scholarships, reputation of college and faculty, and preference to attend an 1890. At 1862 land grant universities, the three most important factors were reputation of college and faculty, scholarships, and cost of tuition. Table 19 shows means and ranks of factors that persuaded students to enroll at their present university.

Table 19 Means and Ranks of Factors in Regard to Student's decision to Enroll at their College

Factors that influence student choosing their college and universities	1890		1862	
	\bar{X}	Rank	\bar{X}	Rank
Preference of 1890	5.02	3	4.91	10
Scholarships	5.37	1	6.03	2
Reputation of college and faculty	5.20	2	6.40	1
Cost of Tuition	4.97	4	5.38	3
Size of the university	4.77	5	4.97	9
Student teacher ratio	4.23	6	5.09	7
County life	3.79	9	5.17	6
Close to home	4.13	8	5.35	4
Mother attended the university	2.64	12	2.28	14
City life	4.19	7	5.31	5
My father attended this university	2.41	14	3.11	13
Far from home	3.48	10	4.02	12

Table 19 (continued)

Factors that influence student choosing their college and universities	1890		1862	
	\bar{X}	Rank	\bar{X}	Rank
High school councilor suggested it	2.68	11	5.04	8
Preference of 1862	2.57	13	4.42	11

Note: VI = Very Important, FI = Fairly Important, SI = Somewhat Important, U = Undecided, SU = Somewhat Unimportant, FU = Fairly Unimportant, VU = Very Unimportant

Research Question Five

Research question 5 asked, “How do perceptions of African American students attending 1890 and 1862 land grant universities compare regarding their relationship with their academic advisor?” This was analyzed by interpreting the relationship of Eta that was made according to the Davis Conventions (Davis, 1971).

The respondents were asked to indicated agreement with the statements by selecting SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, and SD = Strongly Disagree.

Eta was used to see whether relationships existed. All relationships were low. Table 20 shows the correlation of student’s attitudes of their advisor at 1890 and 1862 land grant universities.

Table 24 in Appendix E shows the percentages of student's attitudes of their advisor at 1890 and 1862 land grant universities.

Table 20 Student's Attitudes and Perceptions of their Academic Advisor at 1890 and 1862 Land Grant Universities

Statement	Eta	Strength
My advisor has an open door policy	0.073	Negligible
My advisor is friendly	0.105	Low
My advisor want me to graduate on time	0.152	Low
My advisor does more than scheduling my classes	0.139	Low
My advisor is willing to help me after hours	0.058	Negligible
My advisor want me to broaden my understanding of agriculture by exploring other subjects outside my current major such as horticulture, poultry science, and agribusiness	0.235	Low
My advisor recommends professors that are knowledgeable in their field and are willing to help students	0.085	Negligible
My advisor encourages me to seek challenges in my coursework, internships, and research experiences	0.250	Low
My advisor is very knowledgeable in his/her field	0.044	Negligible
I see my advisor as a mentor	0.154	Low

Research Question Six

Research question six asked, “How do attitudes of African American students attending 1890 and 1862 land grant universities compare in regards of their relationship with their professors?” The interpretation of the relationship of Eta was according to the Davis Conventions (Davis, 1971). Eta was used to see whether relationships existed.

The respondents was asked to indicate their agreement with the statements provided by selecting SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, and SD = Strongly Disagree. The first statement, “My professors see me as a person and not a number,” had a moderate association of 0.361. The remaining statements were either low or negligible. Table 21 shows correlation and strength of student attitudes of their professors at. Table 25 in Appendix F shows the percentages of student’s perceptions of professors at 1890 and 1862 land grant universities.

Table 21 Student's Attitudes and Perceptions of their Relationship with their Professors at 1890 and 1862 Land Grant Universities

Statement	Eta	Strength
My professors see me as a person and not a number	0.361	Moderate
My professors have an open door policy	0.224	Low
My professors want their students to succeed in and out of class	0.184	Low
My professors treat every student fairly	0.135	Low
My professor are willing to help me after hours if necessary	0.128	Low
Overall I have a wonderful relationship with my professors	0.252	Low
Other staff on campus, such as those in financial aid and the registrar's office are professional and helpful	0.235	Low

Research Question Seven

Research question seven asked, "How do perceptions of African American students attending 1890 and 1862 land grant universities compare in regards to their relationship with students at their university?" Interpretation of the relationship of Eta

was according to the Davis Conventions (Davis, 1971). Eta was used to see whether relationships existed.

The respondents were asked to indicate their agreement with the statements provided by selecting SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, and SD = Strongly Disagree. The first statement, “I feel respected by students of all ethnic backgrounds at my university,” had a moderate association (Eta = 0.333) with type of university. The second statement, “I feel accepted at my university,” had a moderate association (Eta = 0.363). The remaining statements were either lower or negligible. Table 22 shows the correlation and strength of student’s attitudes of their relationship with students within their department at 1862 land grant universities. Table 26 in Appendix G shows the percentages of student’s attitudes of their relationship with students in their department at 1890 and 1862 land grant universities

Table 22 Student's Attitudes and Perceptions of their Relationship with other Students at 1890 and 1862 Land Grant Universities

Statement	Eta	Strength
I feel respected by students of all ethnic backgrounds at my university	0.333	Moderate
I feel accepted at my university	0.363	Moderate
I feel that my university campus atmosphere is very friendly	0.168	Low
I have never experience any type of discrimination in my department	0.281	Low

Research Question Eight

Research question eight asked, "How do perceptions of African American students attending 1890 and 1862 land grant universities compare in regards of their satisfaction with their agricultural science program experience?" Interpretation of the strength of Eta was according to the Davis Conventions (Davis 1971). Eta was used to see whether relationships existed.

The respondents was asked to indicate their agreement with the statements provided by selecting SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, and SD = Strongly Disagree. Each statement had a negligible association.

Table 23 shows the relationship regarding to students overall satisfaction in their agricultural science program at 1862 land grant universities. Table 27 in Appendix H shows percentages of student's level of satisfaction at 1890 and 1862 land grant universities

Table 23 Student's Overall Satisfaction in their Agricultural Science Program at 1890 and 1862 Land Grant Universities

Statement	Eta	Strength
I am happy with my overall experiences at my university	0.094	Negligible
I am happy with my curriculum in my program	0.013	Negligible
I am happy with the professors within the department	0.058	Negligible

CHAPTER V

SUMMARY, CONCLUSIONS, DISCUSSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study is to identify factors, and influences, of African Americans enrolled at both 1890 and 1862 land grant universities. This study was designed to gather data from anonymous respondents through an instrument in the form of a questionnaire booklet. The accessible population was students enrolled at 1890 and 1862 land grant universities in Alabama, Florida, Georgia, Louisiana, and Mississippi. The researcher received letters from university deans at each university granting permission for the researcher to conduct this research. Each permission letter can be found in Appendix I. The data were collected from 172 respondents. There were 8 research questions in this study. A summary of the findings follows each research question.

Research question one was to describe the demographic characteristics of African American students enrolled in the agricultural sciences at the 1890 and 1862 Land Grant universities. The age of respondents at both land grant universities was between 18 and 50 years of age. At both land grant universities the majority of the students were female. At both land grant universities the majority of students were seniors. The most reported major by students at 1890 land grant universities was agribusiness. At 1862 land grant

universities the most reported major was animal science. Students at both land grant universities reported that almost half of their parents did attend college. Parents of students that attended 1890 land grant universities were more likely to own, lease, or tenant farm a farm or ranch than students from 1862 land grant universities. Parents of students that attended 1862 land grant universities were more likely to work for a government agriculture agency than students from 1890 land grant universities.

Research question two was to identify African American's students past experiences related to agriculture. One – fourth of the students had farm or ranch experience on a home farm, while a smaller amount of students stated that they were a farm employee. However, more than half of the students stated that they do have other work experience related to agriculture. The majority of the students have other work experiences not related to agriculture. Almost half of the students reported that a high school agriculture program did exist at their high school. However, a majority of students did not take high school agriculture courses. The top three agriculture organizations that students participated in were 4-H, FFA, and FBLA.

Research question three sought to identify what factors influenced African American students to enroll in agriculture science programs. At 1890 land grant universities, more respondents reported, “It would ensure a good income,” “Successful prior experience in agriculture,” and “College teacher or advisor suggested it.” At 1862 land grant universities more respondents reported, “It would ensure a good income,” “Chance to make better grades,” and “College teacher or advisor suggested it.” The students also were asked to determine who was the most influential person in their

decision to enroll in a agriculture science program. The top three choices identified by students who attend an 1890 land grant university were mother, college teacher or advisor, and vocational agriculture teacher. The top three choices from students that attended a 1862 land grant university was mother, college teacher or advisor, and father.

Research question four asked students to identify what important factors persuaded them to enroll at their present university. The major three factors identified by students at 1890 land grant universities were scholarships, reputation of college and faculty, and preference to attend an 1890 land grant university. The three major factors identified by students at 1862 land grant universities were reputation of college and faculty, scholarships, and cost of tuition.

Research question five identified the comparisons of African American student's attitudes of their relationship of their advisor at both 1890 and 1862 land grant universities. Each statement had a low or negligible association. However, more students at 1890 land grant universities had a positive agreement towards their advisors.

Research question six identified the comparisons of African American student's attitudes of their professors at both 1890 and 1862 land grant universities. The first statement, "My professors see me as a person and not a number," had a more agreement from students that attend 1890 students than students at 1862 land grant universities, had a moderate association ($\text{Eta} = 0.361$). The second statement, "My professors have an open door policy," had a low association ($\text{Eta} = 0.224$). The third statement, "My professors want their students to succeed in and out of class," had a low association ($\text{Eta} = 0.184$). The sixth statement, "Overall I have a wonderful relationship with my professors," had a

low association of ($\text{Eta}=0.252$). The seventh statement, “Other staff on campus, such as those in financial aid and the registrar’s office is professional and helpful,” had a low association ($\text{Eta}= 0.235$) with university type.

Research question seven identified comparisons of African American student’s perceptions of students within their department. The first statement, “I feel respected by students of all ethnic backgrounds at my university,” had a moderate association ($\text{Eta}= 0.333$) with university type. The second statement, “I feel accepted at my university,” had a moderate association ($\text{Eta}= 0.363$). Both statements had more agreement from students that attend 1890 land grant universities than students from 1862 land grant universities. The third statement, “I feel that my university campus atmosphere is friendly,” had a low association ($\text{Eta}= 0.168$). The fourth statement, “I have never experienced any type of discrimination in my department,” had a low association ($\text{Eta}= 0.281$). This statement also has more agreement from students from students attending 1890 land grant universities.

Research question seven identified comparisons of African American student’s perception of overall satisfaction in their agriculture science program. Each statement had a negligible association

Conclusions

The following conclusions were drawn from the findings of the study summarized in the previous section.

1. There were more females studying agricultural science at both 1890 and 1862 land grant universities. Students at 1890 land grant universities are more likely to major in agribusiness. Students at 1862 land grant universities are more likely to major in animal science. Student at both land grant universities have parents that did attend college. However, parents of students that attend 1890 land grant universities were more likely to attend the same university in which their son or daughter attended.

2. Students at 1890 land grant universities were more likely than students enrolled at 1862 land grant universities to have other work experience related to agriculture outside of farm or ranch experience. They were also more likely to have other work experiences not related to agriculture. Students at 1862 land grant universities were more likely to have agricultural programs in high school, and were more likely than students enroll at 1862 land grant universities to enroll in the agricultural courses. Students from 1890 land grant universities were more likely to be involved 4-H, FFA, and FBLA.

3. Students at 1890 land grant universities enrolled in their program to ensure a better income, because they had a successful experience related to agriculture, and college teacher and advisor suggested it. Students at 1862 land grant universities enrolled in their program to ensure a better income, chance to make better grades, and college teacher or advisor suggested it.

Mother, college teacher or advisor and vocational agriculture teacher are the top three individual influences for students to enroll in their program at 1890 land grant universities. At 1862 land grant universities, mother, college teacher or advisor and father were the main influences for students.

4. Students at 1890 land grant universities reported that scholarships, reputation of college and faculty, and preference to attend 1890 land grant universities were important in choosing their university. At 1862 land grant universities, the reputation of the college and faculty, scholarships, and cost of tuition, were the most important factors that aided students in their decision to enroll at their university.

5. Students at 1890 land grant universities were more likely to have a positive attitude towards their advisor.

6. Students at both 1890 and 1862 land grant universities shared almost similar positive attitudes towards their professors.

7. Students at both 1890 and 1862 land grant universities shared almost similar attitudes towards other students at their university.

8. Students possessed similar attitudes regarding to their overall satisfaction at both 1890 and 1862 land grant universities.

Discussion

This study showed that African Americans are less likely to have farm or ranch experience on a home farm. Their parents were also less likely to work in an agricultural related field. This is supported by Morgan (2000) who found that less than two percent

of the workforce is farmers, and only one percent of that group consists of minorities. This is comparable to the parents and student work experiences revealed in the findings which showed that parents were less likely to work for an agricultural agency or other related work. Morgan (2000) further stated that fewer students attending land-grant universities have farm backgrounds, whereas 25 years ago the majority of the students had farm backgrounds. In this study students were less likely to have experience on a farm or ranch. According to Ford (1998), over the years, minority ownership of farms and the number of minority farmers have decreased drastically. In this study parents were less likely to own, lease, or tenant farm a farm or ranch.

The most influential individual in student's choice to enroll in their major was their mother. Sivapirunthep (1999) found that parents were the major factor that influenced students to enroll in agricultural science programs.

High school agriculture and college teachers were also a major influence of students to choose their majors. Wardlow, Graham, and Scott et al. (1995) identified teachers was a great influence and the need for minority agriculture teachers in high school was voiced.

Scholarships played also a major role in student's choice of college. Stewart, Russell, and Wright (1997) stated that a lack of financial aid in the form of grants and scholarships is a major deterrent to minorities' choice to attend college. Thomas and Thurber (1999) stated that the reduction in grants and scholarship-based aid, coupled with the rising costs of tuition, room and board, and related college cost, makes it extremely difficult for many minorities to attend college.

Students at 1862 land grant universities were less likely to feel accepted at their university, respected by other students and faculty, and overall satisfaction with university climate and satisfaction in their program. Fleming (1984, p. 24) found that in white institutions, “from a theoretical point of view, minorities experienced feelings of disconnectedness and that a process of alienation could be observed.”

Students at 1890 land grant universities were more likely to feel accepted at their university, respected by other students and faculty, and overall satisfactions with university climate and satisfaction in their program. Fleming (cited in Davis, 1991) indicated that partly due to differences in social support, minorities at historically black colleges and universities differ in their intellectual and psychological development from minorities at predominately white institutions. Students at historically black colleges and universities develop closer relationships with faculty and students, have a greater satisfaction with their academic lives and performance, are more involved with organizations, and have a greater desire to succeed. Students were also more social and adjusted better to campus life and experiences, whereas at predominately white institutions students tended to be separated, and less social. Fleming (cited in Davis, 1991) noted that minorities at predominately white institutions reported dissatisfaction with their academic lives and experience and negative attitudes toward teachers whom they felt were unjust when it came to grading and were not supportive of them in their efforts to achieve. In addition, Fleming (cited in Davis, 1991) also noted that minorities at PWI’s did not have a mentor and had limited academic aspirations for achievement. This is comparable to the feelings of students attending 1862 land grant universities in regards

to their professor, academic experiences, and their social experiences in this study. Students at 1862 land grant universities were less likely to express positive attitudes toward professor, other faculty, and other students with in their department.

Recommendations

The following recommendation is made based on the findings of this study. The recommendations are made in regards for increasing African American enrollment in agriculture science programs.

1. Parents, college teacher or advisor, and vocational agriculture teacher were major factor for the student to enroll in the agriculture sciences. Therefore, they should be included in the planning of recruitment activities.

2. Scholarships, cost of tuition, reputation of college and faculty are key factors for students to attend college. Thomas and Thurber (1999) stated that college and universities with a commitment to increasing minority enrollment must find ways to provide financial aid to students when they are making admissions decisions. Therefore, these factors should be included to attract African American students to enroll at land grant universities to pursue agriculture. It is recommended that land grant universities should implement ways to offer more scholarships to alleviate the rising cost of tuition and to attract students to enroll in to agricultural science programs.

3. It is recommended that further study should be implemented in the future with a larger population with more land grant universities involved.

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APPENDIX A
QUESTIONNAIRE

Factors that Influences African American to Enroll in Agriculture Science Programs

Part I

Experiences and Influences

1. Please circle the number indicating yes or no for each type of experience:

	Yes	No
Farm or ranch work on home farm	1	2
Other farm employee	1	2
Other work experiences related to agriculture	1	2
Other work experiences	1	2

2. While enrolled in high school, did you participate in any of the following agricultural and vocational education related activities? (Circle one for each)

	Participated as a leader or officer	Participated	Did not Participate
4-H	1	2	3
FFA	1	2	3
FHA	1	2	3
DECA	1	2	3
OEA	1	2	3
FBEA	1	2	3
HERO	1	2	3
TSA	1	2	3
FBLA	1	2	3

3. Please indicate how important the following were in choosing your major. Circle whether Very Important (VI), Fairly Important (FI), Somewhat Important (SI) Undecided (U), Somewhat Unimportant (SU), Fairly Unimportant (FU), and Very Unimportant (VU).

	VI	FI	SI	U	SU	FU	VU
Successful prior experience in agriculture	1	2	3	4	5	6	7
My friends were in this major	1	2	3	4	5	6	7
My family thought this would be best	1	2	3	4	5	6	7
High school Ag teacher or advisor suggested it	1	2	3	4	5	6	7
It would ensure a good income	1	2	3	4	5	6	7
College teacher or advisor suggested it	1	2	3	4	5	6	7
Chance to make better grades	1	2	3	4	5	6	7
I had a course related to agriculture in high school	1	2	3	4	5	6	7
I was involved in agriculture organizations such a FFA and 4-H	1	2	3	4	5	6	7
My spouse suggested it	1	2	3	4	5	6	7

4. How influential was each of the following in helping you to choose your major? Circle whether Completely Influential (CI), Mostly Influential (MI), Somewhat Influential (SI), Undecided (U), Somewhat Not Influential (SN), Mostly Not Influential (MN), and Completely Not Influential (CN).

	CI	MI	SI	U	SN	MN	CN
Mother	1	2	3	4	5	6	7
Father	1	2	3	4	5	6	7
Brother	1	2	3	4	5	6	7
Sister	1	2	3	4	5	6	7
Other relative	1	2	3	4	5	6	7
High School friend	1	2	3	4	5	6	7
County Extension Agent	1	2	3	4	5	6	7
Vocational or Ag. Teacher	1	2	3	4	5	6	7
Home economics teacher	1	2	3	4	5	6	7
Principal or guidance counselor	1	2	3	4	5	6	7
College Friend	1	2	3	4	5	6	7
College teacher or advisor	1	2	3	4	5	6	7
Former student	1	2	3	4	5	6	7
Dean or associate Dean of Ag	1	2	3	4	5	6	7
Veterinarian	1	2	3	4	5	6	7
Clergy	1	2	3	4	5	6	7

5. Please indicate the importance the following for choosing your college/university. Circle Very Important (VI), Fairly Important (FI), Somewhat Important (SI) Undecided (U), Somewhat Unimportant (SU), Fairly Unimportant (FU), and Very Unimportant (VU).

	VI	FI	SI	U	SU	FU	VU
Preference of an HBCU (1890 Land Grant University)	1	2	3	4	5	6	7
Preference of a Predominantly White University (1862 Land Grant University)	1	2	3	4	5	6	7
Scholarships and/or financial assistance	1	2	3	4	5	6	7
Preference of county life	1	2	3	4	5	6	7
Preference of city life	1	2	3	4	5	6	7
My high school counselor suggested it	1	2	3	4	5	6	7
My mother attended this university	1	2	3	4	5	6	7
My father attended this university	1	2	3	4	5	6	7
Proximity (Close to home)	1	2	3	4	5	6	7
Proximity (Far from home)	1	2	3	4	5	6	7
Student teacher ratio	1	2	3	4	5	6	7
Size of the university	1	2	3	4	5	6	7
Cost of tuition	1	2	3	4	5	6	7
Reputation of college and faculty	1	2	3	4	5	6	7

Part II**ATTITUDES TOWARD ACADEMIC ADVISOR**

6. Indicate your agreement with the statements below by circling the number indicating whether you Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD), or are Undecided (U).

	SA	A	U	D	SD
My advisor has an open door policy.	5	4	3	2	1
My advisor is friendly.	5	4	3	2	1
My advisor wants me to graduate on time.	5	4	3	2	1
My advisor does more than scheduling my classes.	5	4	3	2	1
My advisor is willing to help me after hours if necessary.	5	4	3	2	1
My advisor wants me to broaden my understanding of agriculture by exploring other subjects outside my current major such as horticulture, poultry science, and agribusiness.	5	4	3	2	1
My advisor recommends professors that are knowledgeable in their field and are willing to help students.	5	4	3	2	1
My advisor encourages me to seek challenges in my coursework, internships, and research experiences.	5	4	3	2	1
My advisor is very knowledgeable in his/her field.	5	4	3	2	1
I see my advisor as a mentor.	5	4	3	2	1

**ATTITUDES TOWARD PROFESSORS AND OTHER
FACULTY**

7. Indicate your agreement with the statements below by circling the number indicating whether you Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD), or are Undecided (U).

	SA	A	U	D	SD
My professors see me as a person and not a number.	5	4	3	2	1
My professors have an open door policy.	5	4	3	2	1
My professors want their students to succeed in and out of class.	5	4	3	2	1
My professors treat every student fairly.	5	4	3	2	1
My professors are willing to help me after hours if necessary.	5	4	3	2	1
Overall I have a wonderful relationship with my professors.	5	4	3	2	1
Other staff on campus, such as those in financial aid and the registrar's office are professional and helpful.	5	4	3	2	1

**ATTITUDES TOWARDS STUDENTS AND UNIVERSITY
CLIMATE**

8. Indicate your agreement with the statements below by circling the number indicating whether you Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD), or are Undecided (U).

	SA	A	U	D	SD
I feel respected by students of all ethnic backgrounds at my university.	5	4	3	2	1
I feel accepted at my university.	5	4	3	2	1
I feel that my university campus atmosphere is very friendly.	5	4	3	2	1
I have never experience any type of discrimination in my department.	5	4	3	2	1

OVERALL SATISFACTION

9. Indicate your agreement with the statements below by circling the number indicating whether you Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD), or are Undecided (U).

	SA	A	U	D	SD
I am happy with my overall experience at my university.	5	4	3	2	1
I am happy with my curriculum in my program.	5	4	3	2	1
I am happy with the professors within the department.	5	4	3	2	1

Part III:

Demographic Data

10. Sex: Male ___ Female ___ (Check one)

11. Please give your age: ____

Please give your major and concentration: _____

13. College Classification: (Check one)

Freshman ___ Sophomore ___
Junior ___ Senior ___

14. Did your parents attend college? (Check one)

___ Yes, my mother and father both attended college.
___ Only my mother attended college.
___ Only my father attended college.
___ Neither of my parents attended college.

15. Did your parents attend your university? (Check one)

___ Yes, my mother and father attended my university.
___ Only my mother attended my university.
___ Only my father attended my university.
___ Neither of my parents attended my university.

16. Do your parents own, lease, rent or tenant farm a farm or ranch?
(Check one)

___ Yes
___ No

17. Do your parents work for a government agricultural agency or in some any other agriculturally related field? (Check one)

___ Yes
___ No

18. Did your high school have an agriculture program? (Check one)

___ Yes
___ No

19. Did you take any agriculture courses in high school? (Check one)

___ Yes
___ No

APPENDIX B
COVER LETTER

Dear Scholar:

My name is Levar Graham and I am a graduate student majoring in Agriculture and Extension Education at Mississippi State University. I am conducting a study entitled “Factors that Influence African Americans to enroll in Agriculture Science Programs”. The purpose of this study is to identify influences and factors that persuade African American students to enroll in the agricultural sciences.

I am writing to ask your help in a study that identifies factors that influence African Americans to enroll in agriculture sciences programs. This study is part of an effort to increase minority enrollment in agricultural science programs.

It is my understanding that you are enrolled in an agricultural science program at a Land Grant University in one of the following states: Alabama, Georgia, Louisiana, Mississippi, North Carolina, Texas, and Florida. I am contacting you through your college dean to be selected to participate in this research.

Results from the survey will be used to help both 1890 and 1862 Land Grant Universities to understand factors that will encourage or influence African American students to select agriculture as a major. These results will also help Land Grant Universities adjust their recruiting and retaining methods of African American students.

Please do not write your name on the survey. Responses of the survey must be completely anonymous. Participation to take this survey is voluntary. Refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled. You may discontinue participation at any time or you may simply refuse to answer any of the questions on the survey.

However, you can help me very much by taking a few minutes to share your experiences and opinions about your agricultural science program and your university.

If you have any question or comments about this study, I will be happy to talk with you. You can email me at Ldg62@msstate.edu, or my advisor Dr. Walter N. Taylor at wntaylor@ais.msstate.edu.

If you have any questions regarding your rights as a participant in human subject’s research, please contact the Mississippi State University Office of Regulatory Compliance at 662-325-5220 or at irb@research.msstate.edu.

Please retain this for your records.

Please return the completed survey in the attached self-address stamped envelope.

Thank you very much for helping with this important study.

Sincerely,

Levar D. Graham
Graduate Student
Mississippi State University

IRB # 06-258

APPENDIX C
APPROVAL FROM THE INSTITUTIONAL REVIEW BOARD FOR
THE PROTECTION OF HUMAN SUBJECTS



November 20, 2006

Levar Desmond Graham
110 Lynn Lane Apt. 4A
Starkville, MS 39759

RE: IRB Study #06-258: Thesis Study: Factors that Influence African Americans to Enroll in Agriculture Science Programs

Dear Mr. Graham:

The above referenced project was reviewed and approved via administrative review on 11/20/2006 in accordance with 45 CFR 46.101(b)(2). Continuing review is not necessary for this project. However, any modification to the project must be reviewed and approved by the IRB prior to implementation. Any failure to adhere to the approved protocol could result in suspension or termination of your project. The IRB reserves the right, at anytime during the project period, to observe you and the additional researchers on this project.

Please refer to your IRB number (#06-258) when contacting our office regarding this application.

Thank you for your cooperation and good luck to you in conducting this research project. If you have questions or concerns, please contact me at cwilliams@research.msstate.edu or 325-5220.

Sincerely,

A handwritten signature in cursive script that reads "Christine Williams".

Christine Williams
IRB Administrator

cc: Walter N. Taylor

Office of Regulatory Compliance

P. O. Box 6223 • 8A Morgan Street • Mailstop 9563 • Mississippi State, MS 39762 • (662) 325-3294 • FAX (662) 325-8776

APPENDIX D
EACH INDIVIDUAL R IN REGARDS TO THE PILOT STUDY'S
TEST-RETEST PROCEDURE

1. R= .823	22. R= 1.000	43. R=1.000	64. R= 1.000
2. R= .869	23. R= 1.000	44. R= 1.000	65. R= 1.000
3. R=.834	24. R= 1.000	45. R= 1.000	66. R= 1.000
4. R= .869	25. R= 1.000	46. R= 1.000	67. R= 1.000
5. R= .863	26. R= 1.000	47. R= 1.000	68. R= 1.000
6. R= .884	27. R= 1.000	48. R= .993	69. R= 1.000
7. R= .801	28. R= 1.000	49. R= .990	70. R= 1.000
8. R= .953	29. R= 1.000	50. R= 1.000	71. R= 1.000
9. R= .901	30. R= 1.000	51. R= 1.000	72. R= .911
10. R= .810	31. R= 1.000	52. R= 1.000	73. R= .869
11. R= .927	32. R= 1.000	53. R= 1.000	74. R= 1.000
12. R= .912	33. R= 1.000	54. R= 1.000	75. R= .906
13. R= .982	34. R= 1.000	55. R= 1.000	76. R= .953
14. R= 1.000	35. R= 1.000	56. R= 1.000	77. R= .984
15. R= 1.000	36. R= 1.000	57. R= 1.000	78. R= .953
16. R= 1.000	37. R= 1.000	58. R= 1.000	79. R= .850
17. R= 1.000	38. R= 1.000	59. R= 1.000	80. R= .750
18. R= 1.000	39. R= 1.000	60. R= 1.000	81. R= 1.000
19. R= 1.000	40. R= 1.000	61. R= 1.000	82. R= .885
20. R= 1.000	41. R= 1.000	62. R= 1.000	
21. R= 1.000	42. R= 1.000	63. R= 1.000	

APPENDIX E
PERCENTAGES OF STUDENT'S PERCEPTIONS OF THEIR
RELATIONSHIP WITH THEIR ADVISOR

Table 24 Percentages of Student's Perceptions of their Advisor at 1890 and 1862 Land Grant Universities

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
Perceptions of advisor	%	%	%	%	%
<hr/>					
My advisor has and open door policy					
1890	60	26	11	6	4
1862	57	19	11	4	9
My advisor is friendly					
1890	68	26	6	3	3
1862	69	19	8	6	6
My advisor wants me to graduate on time					
1890	70	19	8	1	3
1862	50	33	10	4	4
Advisor does more than scheduling my classes					
1890	62	19	8	5	5
1862	47	23	15	6	9
Advisor is willing to help me after hours					
1890	50	20	16	6	8
1862	34	28	30	4	4
Advisor want me to broaden my understanding of agriculture by exploring other subjects outside my current major such as horticulture, poultry science, and agribusiness					
1890	54	24	12	3	7
1862	28	25	30	6	11
Advisor recommends professors that are knowledgeable in their field and are willing to help students					
1890	53	20	19	4	4
1862	49	19	13	11	8

Table 24 (continued)

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
Perceptions of advisor	%	%	%	%	%
<hr/>					
My advisor encourages me to seek challenges in my coursework, internships, and research experiences					
1890	65	21	6	3	6
1862	40	25	15	8	13
My advisor is very knowledgeable in his/her field					
1890	71	16	9	3	2
1862	60	25	13	2	0
I see my advisor as a mentor					
1890	50	21	17	3	9
1862	40	12	27	4	17

Note: SA=Strongly Agree, A= Agree, U=Undecided, D=Disagree, SD=Strongly Disagree

APPENDIX F
PERCENTAGES OF STUDENT'S PERCEPTIONS OF THEIR
RELATIONSHIP WITH THEIR PROFESSORS

Table 25 Percentages of Student's Perceptions of Professors at 1890 and 1862 Land Grant Universities

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
Percentages of perceptions of professors	%	%	%	%	%
<hr/>					
My professors see me as a person and not a number					
1890	66	23	8	2	2
1862	28	34	25	8	6
My professor have and open door policy					
1890	56	27	13	3	1
1862	32	42	11	9	6
My professors want their students to succeed in and out of class					
1890	63	24	12	1	1
1862	42	30	8	6	4
My professors treat every student fairly					
1890	52	29	10	6	3
1862	38	30	17	11	4
My professors are willing to help me after hours if necessary					
1890	50	30	13	5	3
1862	38	34	15	8	6
Overall I have a wonderful relationship with my professors					
1890	48	29	14	5	3
1862	21	40	17	17	6
Other staff on campus, such as those in financial aid the registrar's office are professional and helpful					
1890	28	30	16	14	12
1862	39	44	10	8	0

Note: SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, SD = Strongly Disagree

APPENDIX G
PERCENTAGES OF STUDENT'S PERCEPTIONS OF THEIR
RELATIONSHIP WITH OTHER STUDENTS

Table 26 Percentages of Student Perceptions of their Relationship with Students in their Department at 1890 and 1862 Land Grant Universities

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
Student relationship's with other students	%	%	%	%	%
<hr/>					
I feel respected by students of all ethnic backgrounds at my university					
1890	49	37	11	3	1
1862	25	38	14	14	10
I feel accepted at my university					
1890	56	33	8	4	0
1862	15	54	17	10	4
I feel that my university campus atmosphere is very friendly					
1890	46	34	12	7	2
1862	21	56	8	12	4
I have never experience any type of discrimination in my department					
1890	58	26	8	6	3
1862	29	35	10	16	10

Note: SA=Strongly Agree, A= Agree, U=Undecided, D=Disagree, SD=Strongly Disagree

APPENDIX H
PERCENTAGES OF STUDENT'S OVERALL SATISFACTION
IN THEIR AGRICULTURAL SCIENCE PROGRAM

Table 27 Percentages of Student's Overall Satisfaction at 1890 and 1862 Land Grant Universities

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
Level of satisfaction	%	%	%	%	%
I am happy with my overall experience at my university					
1890	47	39	7	6	2
1862	34	48	8	6	4
I am happy with m curriculum in my program					
1890	43	32	11	10	3
1862	34	42	17	4	2
I am happy with the professors within the department					
1890	44	38	9	6	3
1862	39	39	13	4	6

Note: SA=Strongly Agree, A= Agree, U=Undecided, D=Disagree, SD=Strongly Disagree

APPENDIX I
PERMISSION LETTERS FROM DEANS AT 1890 AND 1862
LAND GRANT UNIVERSITIES



**NORTH CAROLINA AGRICULTURAL AND
TECHNICAL STATE UNIVERSITY**

*OFFICE OF THE DEAN
School of Agriculture and
Environmental Sciences*

October 12, 2006

RE: Institutional Review Board for Research Using Human Subjects (IRB)

I Dr. Alton Thompson have granted Levar Graham permission to conduct his thesis study titled, "Identifying Factors That Influences African Americans to Enroll in Agriculture Science Programs". He will send surveys to be administered to the subjects that are enrolled in the agriculture science programs at North Carolina A&T State University

Sincerely,

Alton Thompson

Alton Thompson, Ph.D.
Professor and Dean

RECEIVED
OCT 17 2006



RECEIVED

MAR 15 2007

TEXAS A&M UNIVERSITY
College of Agriculture and Life Sciences
College Station, Texas 77843-2402
(979) 845-3712
FAX (979) 845-6083

Office of the Dean

March 2, 2007

Mississippi State University
Institutional Review Board
PO Box 6223
Mississippi State, MS 39762

Fax: 662-325-8776

Dear Review Board:

Levar Graham, a graduate student majoring in Agriculture and Extension Education at Mississippi State University has our permissions to conduct his research by contacting our students. He is conducting a study entitled "Factors that Influence African Americans to enroll in Agriculture Science Programs". The purpose of this study is to identify influences and factors that persuade African American students to enroll in the agricultural sciences.

Sincerely,

A handwritten signature in black ink, appearing to read "Joe Townsend".

Joe Townsend
Associate Dean



Southern University and A&M College
Baton Rouge, Louisiana 70813

RECEIVED
MAR 05 2007

*College of Agricultural, Family
and Consumer Sciences
Office of the Dean*



*Phone: (225) 771-3660
FAX: (225) 771-5134*

March 1, 2007

Mississippi State University
Institutional Review Board for Research Using Human Subjects
P.O. Box 6223
Mississippi State, MS 39762

Dear Institutional Review Board for Research Using Human Subjects (IRB):

Levar Graham has been approved by the Southern University Institutional Review Board for Research Using Human Subjects to survey students in the College of Agricultural, Family and Consumer Sciences (CAFCS) majoring in the agricultural sciences for his thesis study titled, "Identifying Factors That Influences African Americans to Enroll in Agriculture Science Programs." He has my support to and assistance in surveying the subjects that are enrolled in the agricultural sciences programs in the CAFCS, Southern University Baton Rouge.

Sincerely,

A handwritten signature in black ink, appearing to read "Dewitt Jones".

Dewitt Jones
Dean

"An Equal Educational Opportunity Institution"



LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE
Office of the Dean • College of Agriculture

06-258

RECEIVED
FEB 02 2007

January 22, 2007

To: Institutional Review Board for Research Using Human Subjects (IRB)

From: M. E. Betsy Garrison, Associate Dean
LSU College of Agriculture

I Dr. Betsy Garrison have granted Levar Graham permission to conduct his thesis study titled, "Identifying Factors That Influences African Americans to Enroll in Agriculture Science Programs". He will send surveys to be administered to the subjects that are enrolled in the agriculture science programs at Louisiana State University.

M.E. Betsy Garrison, Associate Dean
LSU College of Agriculture

/jmg

Baton Rouge • Louisiana • 70803-5602 • 225/578-2362 • Fax 225/578-2526



Florida Agricultural and Mechanical University

TALLAHASSEE, FLORIDA 32307-4100

TELEPHONE: (850) 599-8816
FAX: (850) 599-8821

COLLEGE OF ENGINEERING SCIENCES,
TECHNOLOGY AND AGRICULTURE

ACADEMIC PROGRAMS
OFFICE OF THE ASSOCIATE DEAN
204 S. PIRRY PAIGE BUILDING

RECEIVED
MAR 08 2007

March 8, 2007

The Chair,
Institutional Review Board,
Mississippi State University
P.O. Box 6223
Mississippi State,
MS 39762

RE: "Factors that Influence African Americans to Enroll in Agriculture Science Programs"

This is to certify that Mr. Levar D. Graham has been granted permission to survey the agricultural sciences students in the College of Engineering Sciences, Technology and Agriculture, Florida A&M University, as part of his thesis study.

Should you have any questions, please do not hesitate to contact me at (850) 561-2127 or at verian.thomas@fam.u.edu.

Sincerely,

Verian D. Thomas, Ph.D.
Associate Dean

FAMU IS AN EQUAL OPPORTUNITY/EQUAL ACCESS UNIVERSITY

UF UNIVERSITY of
FLORIDA

College of Agricultural
and Life Sciences

Office of the Dean

RECEIVED

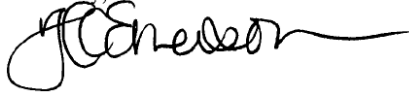
FEB 09 2007

To: Institutional Review Board for Research Using Human Subjects (IRB)

From: Charlotte Emerson
Director of Student Recruitment and Retention
College of Agricultural and Life Sciences
University of Florida
PO Box 110270
Gainesville, Florida 32611

I Charlotte Emerson have granted Levar Graham permission to conduct his thesis study titled, "Identifying Factors That Influences African Americans to Enroll in Agriculture Science Programs". He will send surveys to be administered to the subjects enrolled in the agriculture science programs at the University of Florida, College of Agricultural and Life Sciences

Sincerely,



2002 McCarty Hall
PO Box 110270
Gainesville, FL 32611-0270

Institute of Food and Agricultural Sciences
<http://www.cals.ufl.edu>
An Equal Opportunity Institution

352-392-1963
352-392-8988 Fax



**Fort Valley State
University**

A State and Land-Grant University
University System of Georgia

Department of Agricultural Instruction
College of Agriculture, Home Economics and Allied Programs

1005 State University Drive · Fort Valley, Georgia 31030-4313


RECEIVED

MAR 15 2007

March 5, 2007

Agriculture and Extension Education
Mississippi State University
Starkville, Mississippi 39759

To: Institutional Review Board for research Using Human Subjects (IRB)

From: Dr. Mark Latimore, Jr. 
Interim Head, Agricultural Instruction Department
Fort Valley State University
Fort Valley, Georgia 31030

I, **Dr. Mark Latimore, Jr.**, have granted Mr. Levar Graham permission to conduct his thesis study entitled, "Identifying Factors That Influences African Americans to Enroll in Agriculture Science Programs". He will send surveys to be administered to subjects that are enrolled in the agriculture science programs at Fort Valley State University.

Sincerely



The University of Georgia

College of Agricultural and Environmental Sciences
Office of Academic Affairs

RECEIVED

FEB 19 2007

February 12, 2007

Mississippi State University
Institutional Review Board for Research Using Human Subjects
P.O. Box 6223
Mississippi State, MS 39762

To whom this may concern:

With this letter I authorize Mr. Levar Desmond Graham, Graduate Student, Mississippi State University, Starkville, MS, to administer the **Survey of Factors that Influence African Americans to Enroll in Agriculture Sciences Programs** to students in the College of Agricultural and Environmental Sciences at the University of Georgia. Dr. Don McLellan, Director of the CAES Office of Diversity Relations, will assist in distributing the survey to UGA students. I understand that UGA-IRB has given approval to conduct the survey.

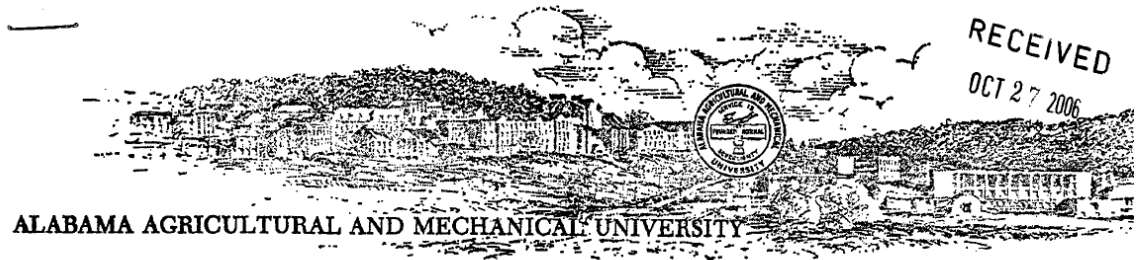
Thank you for your attention. Please contact me if you need any additional information.

Sincerely,

Josef M. Broder
Associate Dean for Academic Affairs

JMB:skh

cy: Levar Graham
Don McLellan
LaRie Sylte



ALABAMA AGRICULTURAL AND MECHANICAL UNIVERSITY

NORMAL, ALABAMA 35762

SCHOOL OF AGRICULTURAL AND
ENVIRONMENTAL SCIENCES
OFFICE OF THE DEAN AND DIRECTOR

POST OFFICE BOX 1087
TELEPHONE: (256) 851-5783
851-5781
FAX: (256) 851-5906

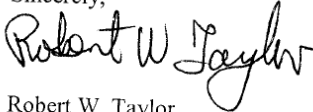
October 16, 2006

Institutional Review Board for Research Using Human Subjects (IRB)

Re: Research for Levar Graham

To Whom It May Concern:

I, Dr. Robert W. Taylor, have granted Levar Graham permission to conduct his thesis study titled, "Identifying Factors That Influences African Americans to Enroll in Agriculture Science Programs." He will send surveys to be administered to the subjects that are enrolled in the agriculture science programs at Alabama A&M University.

Sincerely,


Robert W. Taylor
Interim Dean

"A New Beginning, A New Attitude For The Year 2000 and Beyond"



COLLEGE OF AGRICULTURE
OFFICE OF THE DEAN

06-258

RECEIVED
OCT 13 2006

TO: Institutional Review Board for Research Using Human Subjects (IRB)

I, Dr. W.E. Hardy, Jr., have granted Levar Graham permission to conduct his thesis study titled, "Identifying Factors That Influences African American to Enroll in Agriculture Science Programs". He will send surveys to be administered to the subjects that are enrolled in the agriculture science programs at Auburn University.

Sincerely,

W.E. Hardy, Jr., Ph.D., J.D.

107 COMER HALL
AUBURN, AL 36849-5401

TELEPHONE:
334-844-2345

FAX:
334-844-2937

www.auburn.edu

Owing much to the past, Auburn's greater debt is ever to the future.



Office of the Dean
School of Agriculture, Research,
Extension, and Applied Sciences

www.alcorn.edu

MEMO

TO: Institutional Review Board for Research Using Human Subjects (IRB)

FROM: *Dalton H. McAfee*
Dr. Dalton H. McAfee, Interim Dean School of AREAS

DATE: March 5, 2007

RE: Levar Desmond Graham

I, Dalton H. McAfee, Ph.D, Interim-Dean School of AREAS, Alcorn State University, have granted Levar D. Graham permission to conduct his thesis study titled, "Identifying Factors That Influences African Americans to Enroll in Agriculture Science Programs". He will send surveys to be administered to the subjects that enrolled in the Agriculture Science Programs here at Alcorn State University.

DHM: lga

COLLEGE OF AGRICULTURE AND LIFE SCIENCES
Box 9760, MISSISSIPPI STATE, MS 39762-9760
PHONE: (662) 325-2110 FAX: (662) 325-8580

TO: Institutional Review Board for Research Using Human Subjects (IRB)

FROM: Dr. Vance H. Watson, Dean College of Agriculture & Life Sciences

I, Dr. Vance H. Watson have granted Levar Graham permission to conduct his thesis study titled "Identifying Factors that Influence African Americans to enroll in Agriculture Science Programs." He will send surveys to be administered to the subjects that are enrolled in the Agriculture Science programs at Mississippi State University.

Sincerely,

Vance H. Watson 10/23/06