

RECRUITMENT AND RETENTION STRATEGIES UTILIZED BY 1890 LAND GRANT INSTITUTIONS IN RELATION TO AFRICAN AMERICAN STUDENTS

Johnnie R. Westbrook, Graduate Research Assistant
Virginia Polytechnic Institute and State University
Antoine J. Alston, Associate Professor and Coordinator
North Carolina A&T State University

Abstract

The purpose of this study was to examine the strategies employed by 1890 land grant universities in recruiting and retaining African Americans in agricultural science. Recruitment strategies such as African American agricultural role models, secondary agricultural education, summer enrichment programs, and prior agricultural life experiences were found to be effective. The findings from this study indicate that the following retention strategies were successful in retaining African American students in agricultural science: funding for scholarships and employment, quality advisement, and a network system with mentors.

Introduction

The mission of the 1890 Land Grant System is to produce graduates who are leaders in and who contribute to the fields of teaching, extension, and research (The Council of 1890 Presidents/Chancellors, 2000). The 1890 land grant universities were established to educate African Americans in agriculture, engineering, and home economics. According to the Patterson Institute report, approximately 65 percent, or 2.3 million, of the nation's 18-24 year-old African American population resides in the South and 67 percent, or 83,145, of the nation's African American first-time, full-time freshmen attended four-year colleges in the South (The Council of 1890 Presidents/Chancellors).

Lack of interest in agriculture is a major concern in regards to African American enrollment in agriculture. According to the Food and Agricultural Education Information System, approximately 4,209 African American students of the 119,034 enrolled in agricultural related fields come from 1890 land grant institutions (Food and Agricultural Education Information System, 1999). The National Association of State Universities and Land Grant Colleges (NASULGC) reported an increase of two percent from 3.49 million to 3.55 million students from 1990-2000 at land grant

universities. Minority enrollment at land grant universities rose 34.8 percent and white enrollment declined 12.4 percent. Asians led all minority groups with an increase of 47 percent and Hispanics were second with an increase of 39.3 percent. Additionally, Native Americans increased by 34.6 percent and African Americans rose by 24.1 percent (NASULGC, 2003). African Americans comprise less than 3 percent of the United States agricultural workforce.

Several factors affect enrollment, recruitment, and retention at 1890 land grant institutions. The 2000 Strategic Plan discussed the following factors that influence declining enrollment: resources, competition, technology, political attitudes, interest in agriculture, and financial pressures (The Council of 1890 Presidents/Chancellors, 2000).

Recruitment Strategies

The following strategies can be utilized by 1890 land grant universities: visit by recruiters, visit community and junior colleges, visit churches, and visit community functions (The Council of 1890 Presidents/Chancellors, 2000). The best way to reach students is to market the university to the parents. If the parents are sold on 1890 land grant universities, then their

children will be sold. Many high school counselors do not encourage African American students to attend HBCU's (Historically Black Colleges and Universities) because they lack information regarding the universities (The Council of 1890 Presidents/Chancellors). Recruiters need to visit high schools and market their programs to guidance counselors and teachers. Many community colleges offer a two-year transfer program, which means the student, completes his or her first two years fulfilling general college requirements at the community college and then transfers to a four-year college or university. College transfer programs would be an excellent place to recruit students. In order for 1890 land grant universities to meet the needs of students, a collaborative effort is needed from the universities, parents, counselors, teachers, and other professionals involved in education (The Council of 1890 Presidents/Chancellors).

Retention Strategies

Dyer and Breja (1999) reported that retention could be predicted by examining the criteria by which students were admitted. Enrollment in secondary agriculture classes and agricultural experience were two factors that appeared to have a more accurate predictive value of student retention (Dyer & Breja).

African American students who are surrounded by African American professors are more likely to remain in the agricultural field because they have role models or mentors. The purpose of a role model or mentor is to help students establish contacts, develop networks and uncover career opportunities. Additionally, a support network is needed for African American students to be successful. The support network consists of African American role models, supportive instructors, a level playing field and having their individual needs met. At PWIs (Predominantly White Institutions), there are few or no African American professors and the African American students have to rely on intrinsic motivation to succeed (Bowen, 2002).

Conceptual Framework

Inclusion will serve as the conceptual framework for the research study. The philosophy that brings students, families, educators, and community members to create schools and social institutions based on acceptance, belonging, and community is known as Inclusion (Bloom, Perlmutter, & Burrell, 1999). The goal of inclusion is to establish collaborative, supportive, and nurturing communities of learners that are based on giving all students the services and accommodation they need to learn, as well as respecting and learning from each other's individual differences (Salend, 2001). The following four principles have shaped the concept of inclusion: diversity, individual needs, reflective practice, and collaboration. The four principles will be discussed in the paper.

The U.S. Census Bureau estimates that the United States population will increase by over 50 percent by 2040 from what it was in 1990 (The Council of 1890 Presidents/Chancellors, 2000). The African American population will increase by more than 50 percent during the same time period (The Council of 1890 Presidents/Chancellors). Furthermore, African Americans are predicted to make up 15 percent of the United States college student enrollment by 2010, compared to nine percent in 1995. By 2015, African American college enrollment is expected to increase by eight percent, compared to a five percent increase for whites. Former President Bill Clinton has pointed out: "As education and diversity become increasingly important in the 21st century, graduates of historically black colleges and universities will continue to be at the vanguard of America's progress" (The Council of 1890 Presidents/Chancellors, p. 9).

Diversity in the workplace should resemble diversity in the United States; however, in agricultural fields, minorities represent less than 5 percent of the workforce. Minorities represent approximately 25 percent of the United States population. The agricultural industry needs to work harder to recruit underrepresented minorities (The Council of 1890 Presidents/Chancellors, 2000).

In order for all students to be successful, their *individual needs* must be met. African American students have unique needs and the 1890 land grant universities can help meet these needs because of their diverse faculty. Davis (1991) studied the importance of social support networks and minority undergraduate students' academic success-related outcomes. Davis contended that social support positively related to an individual's health and well-being. African Americans at HBCUs differ in intellectual and psychological development from African Americans at PWIs (Predominantly White Institutions). African Americans at HBCUs develop stronger relationships with fellow students, professors, and advisors. Additionally, they have a greater satisfaction in their academic performance; they are more involved with organizations; and have a greater desire to succeed. African Americans attending PWIs tend to be separated from, are less social, and stay to themselves (Wardlow, Graham, & Scott, 1995).

Reflective practices involve reviewing recruitment and retention strategies for African American students. The 1890 land grant universities need to review their existing recruitment and retention strategies to determine their effectiveness. Strategies that are weak need to be eliminated and new strategies developed. Universities need to work harder at retaining students because they are the future physicians, attorneys, engineers, teachers, and business leaders (The Council of 1890 Presidents/Chancellors, 2000).

Collaboration is an important aspect of inclusion theory. Everyone plays a role in the education of students. In the baseball movie, *Field of Dreams*, Kevin Costner stated "If you build it, he will come" (Suarez, 1988). This statement applies to HBCU's because of their historical prestige. However, 1890 universities are smaller than their 1862 counterparts and are not in the public eye. Recruiters at 1890 land grant universities must publicize their schools and establish partnerships with community entities such as schools, churches, and non-profit civic organizations in order to increase

their African American agricultural student enrollments.

Purpose and Objectives

Given the low enrollment of African Americans studying agricultural science, the purpose of this study was to examine the strategies employed by 1890 land grant universities in recruiting and retaining African Americans in agricultural science. In order to accomplish the aforementioned purpose, the following research questions were developed.

1. What recruitment strategies are utilized/considered by 1890 land grant universities in attracting African American students into agricultural science?
2. What retention strategies/variables are utilized/considered by 1890 land grant universities in retaining African American students in agricultural science?
3. What are the demographic characteristics of 1890 land grant university agricultural science administrators?

Methodology

The population for this study consisted of all deans, associate deans, and department chairs at sixteen 1890 land grant universities' ($N = 63$) agricultural schools/departments. At the time of this study, an instrument suitable to meet the research objectives was not found. A five-part instrument was developed by the researcher based on the research questions of this study with the aid of an exhaustive literature review. The validity of the instrument was established by means of content validity. Brown (1983) defined content validity as "the degree to which items on a test representatively sample the underlying content domain" (p. 487). Brown recommended using expert judges as one means of establishing content validity. A panel of experts consisting of the researcher's graduate committee reviewed the instrument for content validity. The data presented in this article were collected from

sections one (Recruitment Strategies for African American Students), three (Retention Strategies for African American Students), and five (Demographics and School of Agriculture Enrollment) of the instrument. Sections one and three consisted of Likert-type questions, while section five consisted of a series of closed and open ended questions.

The original population for the study was 63; however, at several land grant universities one or two representatives were designated as the individuals to complete the instrument for the entire school of agriculture. The researcher's goal was to have every administrator respond to the instrument in order to strengthen the study. The aforementioned practice decreased the instrument population from 63 to 37 participants. A mixed mode of data collection was employed combining web based surveying with traditional mailings (Dillman, 2002).

Given the exploratory nature of this study, a post hoc reliability test was taken at the conclusion of data collection on each section of the instrument. Cronbach's alpha reliability coefficients for the instrument sections under study were as follows: section one = 0.86 and section three = 0.89. Section five was demographic in nature, thus not requiring a traditional reliability measure.

For this descriptive study, the instrument was placed on a secure, password protected website. The first round consisted of 1890 land-grant university deans, associate deans, assistant deans, and department chairs receiving a cover letter from the researcher and major professor outlining the purpose of the research containing instructions for accessing the website with an individual username and password. This was mailed on February 6, 2004. Administrators were given one week to respond to the initial instrument; two instruments were completed online. The second round consisted of all non-respondents receiving a follow-up letter emphasizing the importance of the study. The mailing was sent out on February 13, 2004 and two instruments were completed online. The third round consisted of email reminders to non-respondents on February

20, 2004. Non-respondents were given one week to respond to the instrument. Four administrators reported problems accessing the secured website and seven administrators misplaced the website address or their password to the site. Paper instruments were mailed to the administrators. The fourth round consisted of phone calls and email reminders with an attached instrument to non-respondents from February 27 - March 2, 2004. Non-respondents were given one week to respond; one instrument was completed online. The fifth round consisted of phone calls to non-respondents and emails with an attached instrument to administrators without voice mail on March 9, 2004. Six instruments were returned by mail or fax. Phone calls were made to non-respondents on March 16, 2004 and three instruments were returned two by fax and one by mail. Round seven consisted of phone calls to non-respondents on March 22, 2004 and three instruments were faxed. Two additional instruments were received by traditional mail on April 1-2, 2004. The aforementioned procedure resulted in nineteen instruments being returned via the website, mail, or fax for a return rate of fifty-one percent. In order to handle non-response error early and late respondents were compared (Miller & Smith, 1983). For this study, those who responded before the fourth round of data collection were categorized as early. No significant differences were found between early and late respondents.

Findings

Objective One

Respondents were asked to evaluate strategies utilized by 1890 land grant universities in recruiting African American students. Table 1 shows the strategies, means, and standard deviations for the 20 recruitment strategies. For the purpose of data analysis a reader should utilize the following specifications when interpreting the scale for Table 1: 1-1.49 = Never, 1.50-2.49 = Seldom, 2.50-3.49 = Sometimes, 3.50-4.49 = Frequently, and 4.50-5.00 = Very Frequently.

Table 1
Recruitment Strategies/Concepts for African American Students (N = 19)

Recruitment Strategies	<i>M</i>	<i>SD</i>
Having college faculty to actively encourage students to pursue agricultural science through various recruitment efforts.	4.00	1.03
Educating students about the job demand for African American agricultural graduates.	4.00	1.01
Secondary agricultural education teachers.	3.89	.91
Educating students about the earning potential for African American students in agriculture.	3.89	1.08
Students who have been involved in summer agricultural enrichment programs.	3.84	1.17
Students who have a strong secondary background in biological and physical science.	3.68	.89
Secondary teachers other than agriculture teachers who have an influence on the college decisions of students.	3.53	1.22
African American agricultural professionals who can recommend potential agricultural science students in their respective localities.	3.53	1.22
Guidance counselors who influence a student's college choice.	3.47	.96
Parents who directly influence the college decision of their child.	3.32	1.11
Students who grew up in a suburban area.	3.21	.65
Students who have taken secondary level agriscience education coursework.	3.16	1.03
Students who grew up in an urban area.	3.16	.79
Students with prior experience in FFA or 4-H.	3.11	1.11
Students who enjoy working with animals.	3.05	1.18
Students who enjoy working with plants.	3.05	1.13
Students who enjoy working outdoors.	3.00	1.10
Students who grew up in a rural town (population less than 10,000).	2.95	.97
Students who have prior life experience in agriculture.	2.63	1.00
Students who were raised on farms.	2.32	.83

Note. Scale: 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Frequently, 5 = Very Frequently

Administrators at 1890 land grant universities frequently utilize the following recruitment strategies/concepts when recruiting African American students into agricultural science: secondary agricultural education teachers, secondary teachers other than agricultural science teachers who have an influence on the college decisions of students, African American agricultural professionals who can recommend potential agricultural science students in their localities, having college faculty to actively encourage students to pursue agricultural science through various recruitment efforts, students who have been involved in summer enrichment programs, educating students about the job demand for African American agricultural graduates, educating students about the earning potential for African American students in agriculture, and students who have a strong secondary background in biological and physical sciences.

Administrators at 1890 land grant universities sometimes utilize the following recruitment strategies/concepts when recruiting African American students into agricultural science: Parents who directly influence the college decision of their child, guidance counselors who influence a

student's college choice, students who have taken secondary level agriscience education coursework, students with prior experience in FFA or 4-H, students who enjoy working outdoors, students who enjoy working with animals, students who enjoy working with plants, students who grew up in a rural town (population less than 10,000), students who grew up in a suburban area, students who grew up in an urban area, and students who have prior life experience in agriculture. Students who were raised on farms are seldom utilized as a recruitment strategy for recruiting African American students by administrators at 1890 land grant universities.

Objective Two

Respondents were asked to assess strategies utilized to retain African American students in agricultural science. Table 2 shows the means, standard deviations, and rankings for the 18 retention strategies. For the purpose of data analysis, readers should utilize the following specifications when interpreting results for Table 2: 1-1.49 = Strongly Disagree, 1.50-2.49 = Disagree, 2.50-3.49 = Uncertain, 3.50-4.49 = Agree, and 4.50-5 = Strongly Agree.

Table 2
Retention Strategies and Variables Used for African American Students (N=19)

Retention Strategies	<i>M</i>	<i>SD</i>
Availability of scholarships and other sources of financial assistance improve student retention.	4.37	.90
Support networks including mentors increase African American student retention in agriculture.	4.26	1.15
Quality of advisement is a major factor that influences African American student retention in agriculture.	4.26	1.15
High grade point average is a good predictor for student retention.	4.21	.92
Smaller class size improves student retention.	4.16	.83
Involvement in extracurricular activities improves student retention.	4.00	.82
Participation in summer internships improves student retention.	3.95	1.03
High SAT or ACT scores are a good predictor for student retention.	3.89	.99
FFA or 4-H experience increases student retention.	3.84	.90
A combination of admission variables and learning styles influence student retention.	3.84	1.21
Secondary agricultural education coursework increases student retention.	3.74	.93
High school class rank is a good predictor of student retention.	3.74	.93
Prior work experience in agriculture increases student retention.	3.68	1.20
A student learning style influences their retention level.	3.53	1.12
Diversity improves student retention.	3.47	.96
Size of college or university influences student retention.	3.32	1.11
Size of high school influences student retention.	2.95	.71
Size of city or town influences student retention.	2.63	.96

Note. Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly Agree

Administrators at 1890 land grant universities agreed on the following retention strategies/variables to retain African American students in agricultural science: High grade point average is a good predictor of student retention, high SAT or ACT scores are good predictors of student retention, prior work experience in agriculture increases student retention, secondary agricultural education coursework increases student retention, FFA or 4-H experience increases student retention, a student's learning style influences his/her retention level, quality of advisement is a major factor that influences African American retention in agriculture, high school class rank is a good predictor for student retention, a combination of admission variables and learning styles influence student retention, participation in summer internship improves student retention, involvement in extracurricular activities improves student retention, smaller class size improves student retention, availability of scholarships and other sources of financial assistance improve student retention, and support networks including mentors increase African American student retention in agriculture.

Administrators at 1890 land grant universities were uncertain if the following retention strategies improved retention for African American students in agricultural

science: Diversity improves student retention, size of high school influences student retention, size of college or university influences student retention, and size of city or town influences student retention.

Objective Three

Table 3 displays results for the demographic and program characteristics analyzed in this study. The mean age for the administrators was 52 years. With regard to gender in this study, 74 percent were male and 26 percent female. The mean years of higher education experience for administrators was 23 and the mean years of administrative experience was nine. With regard to administrative roles, 60% were department heads or chairs, 26% were deans, 11% were associate deans, and three percent were assistant deans. Administrators were asked to provide demographics regarding their school of agriculture. Approximately 53% of the students were female and 47% were male. In respect of race or ethnicity, African Americans comprised 85%, whites, 10%; Asians, 2%; others including Native Americans, 2%; and Hispanics, less than 1%. The average agricultural enrollment at the universities was 387.

Table 3
Demographic and Program Characteristics (N = 19)

Demographics	<i>N</i>	<i>M</i> or %	<i>SD</i>
Age	19	52.11	3.70
Gender			
Male	14	74%	
Female	5	26%	
Years of higher education Experience	19	23.16	5.99
Administrative Experience	19	9.16	6.82
Gender Population for the School of Agriculture			
Male		46.89%	
Female		53.11%	
Race/Ethnicity of Students			
African American		85%	
Asian		2.0%	
Hispanic		.70%	
Other/Native American		2.3%	
White		10%	
Administrative Role			
Dean	5	26%	
Associate Dean	2	11%	
Assistant Dean	1	3%	
Department Head or Chair	11	60%	
Average Agricultural Enrollment		387	

Conclusions

Based on the findings of this study, the following conclusions are offered:

1. Respondents agreed that having college faculty actively involved in the recruiting process increased the enrollment of African American students in agricultural science, in addition to parental involvement. This finding is consistent with findings reported by The Council of 1890 Presidents/Chancellors (2000) which called for the involvement of

- agricultural faculty in the recruiting process, and additionally partnering with parents to influence this process. The fourth principle of the Inclusion conceptual framework emphasizes collaboration as a means to achieve optimal learning environments for all students.
2. Respondents agreed that educating African American students regarding job opportunities in agriculture and the earning potential of graduates as successful strategies to attract African American students. The Council of 1890

- Presidents/Chancellors (2000) called for the marketing of career options to potential students. The Inclusion concept stipulates that the individual needs of students must be addressed in order to promote learning, in this case marketing career opportunities and potential salary earnings would impact their decision in relation to their professional future.
3. Respondents reported secondary agricultural education teachers and African American agricultural professionals recommending agricultural science as a field of study was an effective recruitment strategy to attract African American students. This finding is consistent with findings reported by The Council of 1890 Presidents/Chancellors (2000), Arrington (1985), and Bowen (2002) regarding the need for role models, particular ones of color as a means of increasing and maintaining diverse populations in agricultural studies. This conclusion directly concerns the diversity principle of the Inclusion concept, which in essence calls for representation of multiple groups in the learning environment.
 4. Summer enrichment programs were reported as an important recruitment strategy for African American students, this is consistent with findings reported by Goldberg (2001) and Whitley (1998). Successful summer enrichment programs involve collaboration of many entities at both the secondary and post secondary level, which directly correlates with the third principle of the Inclusion concept.
 5. Respondents sometimes agreed that prior life experiences in agriculture, FFA or 4-H experience, and coursework in secondary agriscience education improved recruiting efforts for African American students, this is consistent with findings reported by Wildman and Torres (2001).
 6. Quality of advisement and support network with mentors received high rankings with regard to retaining African American students, a conclusion supported by Bowen (2002). These components directly address the individual needs of students in relation to dynamic retention practices, which is in direct alignment with the second major principle of the Inclusion concept.
 7. Funding received the highest ranking in relation to retention strategies for African American students, which is a major issue with both land grant and non grant institutions in relation to fiscal concerns.
 8. The following retention variables: high SAT or ACT scores, class rank, and high grade point average were seen as good predictors of retention by 1890 administrators in relation to African American students, factors which Garton, Ball, and Dyer (2002) found true for students regardless of race.
 9. Respondents agreed that learning styles have a great impact upon student retention, a finding supported by Gregorc (1979). This finding is highly correlated with the reflective practice principle of the Inclusion concept in that in order for educators to adequately address the educational needs of their students, they must have a clear understanding of their respective learning styles (Bloom, Perlmutter, & Burrell, 1999).

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Sponsor an 1890 land grant university recruiting and retention conference for administrators, faculty, and staff.
2. Participate in national meetings with 1862 land grant universities to discuss recruitment and retention strategies.
3. Seek funding from the United States Department of Agriculture to sponsor summer enrichment programs, and target areas with high

populations of African American students and encourage them to consider careers in agricultural science.

4. Sponsor professional development activities related to careers in agriculture to secondary administrators, career and technical education directors, guidance counselors, and science teachers.
5. Network with agricultural professionals to identify African American students who may be interested in agricultural science.
6. Recruit African American students to become teachers of agriculture.
7. Require faculty members to participate in multicultural education in order to understand the four principles of the inclusion theory: individual needs, diversity, reflective practice and collaboration, and their collective impact upon recruitment and retention.
8. Develop a quality advising system consisting of faculty advisors and qualified student mentors.
9. Sponsor tutorial sessions for students who are struggling with their coursework.
10. Provide funding for qualified students.

Implications

The 1890 land grant universities have produced some of the world's greatest agricultural leaders. If this trend is to be maintained, efforts to recruit and retain talented African Americans must be continually addressed. Findings from this study can be utilized as a foundation by these universities to enhance their existing recruitment and retention efforts.

References

Arrington, L. R. (1985). Relationship of students' attitudes about vocational agriculture to selected students, school and program variables. *Journal of the American Association of Teacher Educators in Agriculture*, 26(1), 48-56.

Bloom, L. A., Perlmutter, J., & Burrell,

L. (1999). The general educator: Applying constructivism to inclusive classrooms. *Intervention in School and Clinic*, 34(3), 132-136.

Bowen, B. E. (2002). Advancing agricultural education within the context of an increasingly diverse society. *Journal of Agricultural Education* 43(1), 1-11.

Brown, F. G. (1983). *Principles of educational and psychological testing* (3rd ed). New York: Holt, Rinehart, and Winston.

The Council of 1890 Presidents/Chancellors (2000). *1890 land grant system- A strategic plan* Washington D.C.: Author.

Davis, R. B. (1991). Social support networks and undergraduate student academic success-related outcomes: A comparison of Black students on white campuses. In Allen, Epps, and Haniff (Eds.). *College in black and white: African American students in predominately white and historically black universities*. Albany, NY: State University of New York Press.

Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method*. New York: John Wiley and Sons.

Dyer, J. E., & Breja, L. M. (1999). Predictors of student retention in colleges of agriculture. *Proceedings of the 53rd Annual Central Region Research Conference in Agricultural Education*, St. Louis, MO, 93-100.

Food and Agricultural Education Information System (1999). *Fall 1999 enrollment for agriculture, renewable natural resources, and forestry*. College Station, TX: Texas A&M.

Garton, B. T., Ball, A. L., & Dyer, J. E. (2002). The academic performance and retention of college of agriculture students. *Journal of Agricultural Education* 43(1), 46-56.

Goldberg, F. (2001). *Access to the UW system follow-up*. Retrieved on October 2, 2003, from http://216.239.39.104/search?q=cache:_kIBMwHVMWOJ:www.wwsa.edu/opar/presentatio

Gregorc, A. F., (1979). Learning/teaching styles: Potent forces behind them. *Educational Leadership*, 36(1), 234-237.

Miller, L. E., & Smith, K. L. (1983). Handling non-response issues. *Journal of Extension*, 21(5), 45-50.

National Association of State Universities and Land Grant Colleges (2003). *AASCU/NASULGC enrollment report findings and trends fall 1990-fall 2000*. Washington D.C.: Author.

Nunnally, J. C. (1967). *Psychometric theory*. New York, NY: McGraw Hill.

Salend, S. J. (2001). *Creating inclusive classrooms: Effective and reflective*

practices. State University of New York at New Paltz: Merrill Prentice Hall.

Suarez, J. (1988). The movieways page-field of dreams ways. Retrieved on August 16, 2003, from <http://www.movieways.com>

Wardlow, G. W., Graham, D. L., & Scott, F. L. (1995). Barriers to professional careers as perceived by minority professionals in agriculture. *Proceedings of the 22nd Annual National Agricultural Research Conference*, Denver, CO.

Whitley, S. (1998). *NC A&T applies unique spin to student recruitment*. Retrieved on February 16, 2003, from <http://www.ncat.edu/~soa/news/jul98/videoc onference.html>

Wildman, M., & Torres, R. M. (2001). Factors identified when selecting a major in agriculture. *Journal of Agricultural Education*, 42(2), 46-55.

JOHNNIE R. WESTBROOK is a Graduate Research Assistant in the Department of Agricultural & Extension Education, at Virginia Polytechnic Institute and State University, 2270 Litton-Reaves Hall, Blacksburg, VA, 24061. jwestbrook@vt.edu.

ANTOINE J. ALSTON is an Associate Professor and Coordinator of Agricultural Education in the Department of Agribusiness, Applied Economics and Agriscience Education, at North Carolina A&T State University, 251 Carver Hall, Greensboro, NC 2741. alstona@ncat.edu