ABSTRACT


The emphasis on college entrance examination scores for college admissions by land grant institutions can be detrimental to rural high school students interested in pursuing higher education in agricultural degree programs. Rural high school students from agriculturally intensive and socioeconomically distressed counties often demonstrate lower college entrance examination scores than their urban counterparts. Through looking at the North Carolina top ten farm cash receipt counties, students residing in these counties exhibit significant score deficits on the SAT and ACT when compared with the students in the urban counties comprising Research Triangle Park (RTP). When observing these three variables: agricultural intensity, rural designation, and level of socioeconomic distress, it can be noted that they all negatively impacted student scores on the SAT and ACT college entrance examinations (Project 1). With decreased college entrance examination scores these aforementioned students are often unsuccessful in gaining admissions to universities offering B.S. degrees in agricultural and life sciences due to significantly lower scores on college entrance examinations such as the ACT. The A.S.P.I.R.E. (ACT Supplemental Preparation In Rural Education) Program is an initiative that partners the College of Agriculture and Life Sciences at NC State University with the North Carolina Cooperative Extension Service to
bridge these apparent deficits in rural high school students’ performance on the ACT College Entrance Examination in order to increase these students’ admissions rates. Through participation in the A.S.P.I.R.E. course, students have been shown to increase their ACT score on average by approximately 3.5 points on the ACT’s 36 point scale (Project 2). Through participation in the second round of the A.S.P.I.R.E. course, students have been shown to increase their ACT score on average by 1.5 points on the ACT’s 36 point scale (Project 3).
The Development, Implementation, and Assessment of the A.S.P.I.R.E. (ACT Supplemental Preparation In Rural Education) Program- A Cooperative Extension Program to address ACT College Entrance Score Examination Deficits in Rural High School Students Interested in Pursuing Agricultural & Life Science Studies at a Land Grant Institution

by
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A thesis submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the degree of Master of Science

Poultry Science

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BIOGRAPHY

Mindy was born to Lee and Monica Herman in Statesville, NC at Davis Memorial Hospital on October 3, 1990. She has a fraternal twin sister, Jenna, and a little brother, Trey. Growing up on her family’s farm Mindy developed a love for all animals, big and small. She spent much time exploring her interest in animals by working on the family’s beef and poultry farm, horseback riding, and breeding Border Collie puppies. The family farming venture, located in Alexander county, consists of a cow-calf/stocker operation and broiler houses under contract with Tyson Foods Inc. Mindy attributes her work-ethic, responsibility, and determination to growing up and working alongside her family on their farm.

While in high school Mindy participated in FFA on Career Development Teams and also in leadership positions. She competed on the Poultry Judging, Livestock Evaluation, Creed Speaking, Parliamentary Procedure, and Agricultural Sales Career Development Events. Mindy also help various leadership positions such as Sentinel, Vice-President, and President of her local FFA chapter. Through FFA she was able to develop personal development skills and leadership proficiencies that have helped her throughout her collegiate career and also feels will further help her in the future.

She furthered her animal related experiences by pursuing a Bachelor’s of Science degree in Poultry Science at North Carolina State University, which she completed in the fall of 2011. Her interest in other areas of agriculture spurred her to receive minors in: Animal Science,
Agriculture Business Management, and Extension Education in addition to her B.S. in Poultry Science. While an undergraduate, she was a member of the Poultry Science Club, Animal Science Club, and the Collegiate FFA.

In January of 2012, Mindy became a Master of Science candidate in Poultry Science at the Prestage Department of Poultry Science at NC State University in Raleigh, North Carolina. Under the direction of Dr. Jackie Golden and Dr. Kenneth Anderson, she attended and presented at the 101st Poultry Science Association Annual Meeting Conference in Athens, Georgia and also at the 102nd Poultry Science Association Annual Meeting Conference in San Diego, California. After graduation, Mindy plans to pursue a career with North Carolina Department of Agriculture and Consumer Services.

2012-2013 North Carolina State University Poultry Judging Team
Mindy Herman, Coach Dr. Ken Anderson, Courtney Bumgarner, B.A. Curry, Tyler Earl

Poultry Science Association 101st Annual Meeting
Mindy Herman, Dr. Jackie Golden, Dr. Ken Anderson, Colleen Crozier, Kelsey Arrufat
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2011 Fall Graduation Commencement
Mindy Herman, Dr. Jackie Golden, Katie McCraw
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CHAPTER I

LITERATURE REVIEW
1.1 THE ACT AND SAT

College admissions committees consider several factors when trying to determine whether or not to admit an applicant to an institution of higher education (Lane, 2009). These admission officers have numerous criterions to use during the selection process (Stemler, 2012). Students are usually asked to submit high school transcripts, letters of recommendation, test scores, documentation of extracurricular activities, and an essay for the admission committee’s consideration (Mattern, 2011). Many colleges and universities have increased their academic entrance requirements (Raven, 1992), such as adding more required high school courses and raising the minimum high school grade point average needed for college admission (McCurdy, 1982). Institutions offering degrees at a postsecondary level utilize this information to help them make the best decision about whether or not the applicant will succeed at that particular postsecondary institution (Mattern, 2011). One very important admissions condition is the student’s performance on college entrance examinations (Lane, 2009). College entrance examinations, like the ACT and SAT, are often required or recommended for college admission to nearly all of the nation’s 4-year colleges and universities (Klasik, 2013). Admission rates have been found to steadily increase with higher college entrance examination scores (Francis, 2012). Inclusion of such examinations in the college admission process is believed to “offer a more efficient, valid, or at least supplementary means for selecting the most appropriate candidates” (Edwards, 2012, p. 90).

As access to postsecondary education has increased, the reliance on college entrance examinations has also expanded (Deli-Amen, 2010). Selective colleges have placed greater emphasis on test scores in order to sort through and rank the abundant number of eligible
applicants (Alon, 2009). It has been noted that “in general, the more prestigious the institution, the more likely it is to rely solely on the examination score” in admission decisions (Edwards, 2012, p. 95). Admissions tests are used as a key component of admission selection, and while there are several tests throughout the country, the two that dominate the testing sector are the SAT and ACT (Edwards, 2012). College entrance examinations such as the SAT and ACT are often used for the purpose of standardization of students and are also important for measuring cognitive skills that will often indicate the educational outcomes (Mattern, 2011). While many argue that these exam scores are not the best indicator of future college success, they do offer insight, to some degree, the different intellectual demands that a student will likely face in college (Deli-Amen, 2010).

These tests are used prolifically in the United States where there are a variety of different standards and curricula across the country. These diverse and heterogeneous educational opportunities are what have led the United States to rely heavily upon college entrance examinations for admission decisions (Edwards, 2012). Throughout the years, however, there have been many critiques about the validity of these admission tests (Stemler, 2012; Korbin, Camara, & Milewski, 2002; Lonard & Jiang, 1999; Noble, 2004; Sternberg & the Rainbow Project Collaborators, 2006; Zwick, 2004). There have also been some unintended consequences resulting from the implementation of these tests: pressure on students to succeed, and a rapidly increasing private market for coaching students on these admission tests (Edwards, 2012).
The ACT, designed to measure academic achievement (Haertel, 2013), claims to closely follow high school curriculum and “to measure the preparedness of the test-taker for more advanced education” (Koenig, 2008, p. 153). In general, both the SAT and ACT are intended to assess students’ knowledge in subject areas and content from the national school curriculum (Edwards, 2012).

The ACT was developed in 1959 by E.F. Lindquist and Ted McCarrel (Perez, 2002) as an alternative to the SAT examination. It is comprised of four sections: Mathematics, English, Reading, and Science. The composite score is an average of the four subtest scores with a range of 1-36 (Koenig, 2008). Admission committees use college entrance examination scores to compare academic achievement of applicants and to help them draw inferences about the likelihood of a student’s success at the university level (Lane, 2009). Admission tests such as the SAT and ACT are often utilized due to “a lack of consistency in secondary school assessment processes” (Edwards, 2012, p. 90) and may be the only criterion used or employed in conjunction with other achievement measures. Nevertheless, these tests play a dominant role in admissions decisions (Edwards, 2012). Considering the importance of a score on a college entrance examination, students will need to prepare for this exam. Student performance on a college entrance examination serves as an important predictor on whether or not a student will be admitted to colleges and universities (Lane, 2009).

The SAT was first introduced in 1926 as an instrument that would “level the playing field” and therefore reduce the importance of social origins in gaining access to college (Buchmann, 2012, p. 439). Standardized college admissions tests strived to move our society away from students receiving privileges based upon their social statuses to an admission
method based on a students’ merit (Sternberg, 2012). However, instead of promoting equality in the college admission process, the SAT actually has more of an unfavorable impact on low income applicants. (Atkinson, 2009) The founders of the standardized testing movement intended to change the college admission process from relying on a social class system based on economic status to a more “meritocratic one,” however, the standardized test which they created and endorsed correlated heavily with socioeconomic status (Sternberg, 2012, p. 7).

1.2 THE IMPACT OF SOCIOECONOMIC STATUS AND STUDENT PERFORMANCE ON THE SAT/ACT EXAMINATIONS AND COLLEGE ADMISSIONS DECISIONS

A low socioeconomic status (SES) can be a barrier youth face in college achievement (Francis, 2012) and has an effect in producing differences in access to postsecondary education (Alon, 2009) and “the educational credentials that one attains” in the United States (Crosnoe, 2010, p. 81). A student’s socioeconomic background can influence exam performance (Francis, 2012) and can also dictate their educational choices (Chenoweth, 2004) and decisions (King, 2012). This leads to students from a high socioeconomic status (SES) having the resources that can help them increase their chances of going to college (Crosnoe, 2010) and consequently advantaged youth have higher rates of college enrollment and completion in comparison to lower SES students (Buchmann, 2012). Individuals from higher SES are more likely to attend college (Bleustein, 2002; Klasik, 2012) while lower SES students are more likely to directly transition into the work force or military (Blustein, 2002). College aspiration and enrollment rates vary among socioeconomic strata with the lower socioeconomic students enrolling in college at lower rates (Klasik, 2012). This difference
may be attributed to the fact that lower SES students tend to take less demanding courses, due to the unavailability of these courses while pursuing secondary education. However, the more demanding curricula affect the likelihood of college attendance and graduation (King, 2012). Lower SES students have less selective college choices, face a reduction of favorable prospects for college success (Deli-Amen, 2010), and are also more likely to leave a four year university and move to a two year school (Goldrick-Rab, 2006).

A parent’s “location in the socioeconomic structure has a strong impact on students’ achievement” (Sirin, 2005, p. 438). Higher SES students have a primary advantage because their parents’ socioeconomic statuses grant them access to resources that increase their demonstrated ability as they approach high school. The parent’s location within the socioeconomic tiers also has a secondary effect on students by shaping the decisions that students and parents make within their existing opportunities (Crosnoe, 2010). The increased resources high SES students have access to during their secondary education, “allow them to make decisions, or have decisions made for them, in high school that cumulatively increase their chances for going to college” (Crosnoe, 2010, p. 82)

Family income is correlated with SAT scores and college outcomes “so much that the apparent predictive power of the SAT actually reflects the proxy effects of socioeconomic status” (Atkinson, 2009, p. 665-666). Youth who have opportunities for “more and better education tend to do better on the standardized tests that measure the learning that such education produces” (Sternberg, 2012, p. 7). Many professional test preparation companies charge hundreds of dollars for their test preparation services. According to the Princeton Review’s website, private tutoring for the ACT can range in price from $115/hour to
$275/hour depending on which package the individual chooses (The Princeton Review, 2013). It appears that the more privileged students do benefit from college entrance examination tutoring because they have resources to financially access college entrance examination coaching (Mattern, 2011). These students’ scores actually reflect the educational opportunities they were afforded, which vary dramatically across the United States (Sternberg, 2012). Students from high socioeconomic statuses use expensive test preparation such as private classes or tutors and are capable of taking the test multiple times, which puts them at a marked advantage over low socioeconomic students in performing better on standardized tests and thus in access to postsecondary education (Alon, 2009). The SAT and ACT are both susceptible to coaching and it has been demonstrated that students’ scores on these exams can be significantly improved through “rigorous coaching” (Perez, 2002, p. 23). Test preparation companies indicate that the primary reason students’ scores can be boosted through coaching is due to the “predictability of the exams’ formats and their narrow range of content” (Perez, 2002, p. 23). Learning what to expect and how to select an answer from the response choices enables students to improve their scores (Blackey, 2009). The expenses associated with test preparation can be absorbed more easily by more socioeconomically advantaged families and students from advantaged families are more likely to enroll in private test preparation courses which corresponds to as much as a 30-40 point SAT score gain. Such a score improvement would increase the students’ chances of getting into the “most selective colleges and universities” (Buchmann, 2012, p. 455). Seventy percent of privileged seniors will use some type of test preparation compared to less than fifty percent of lower SES students (Alon, 2009). Score improvements through coaching
“exacerbate the inequities already present with college admissions exams” and favor higher-income students (Perez, 2002, p. 23). Therefore, high socioeconomic status (SES) leads to higher test scores through increased knowledge of test taking strategies (Sackett, 2009). Students from socioeconomically disadvantaged backgrounds are often unaware of test preparation options or they are “financially constrained from taking advantage of them” and thus will be less likely to use some type of test preparation (Buchmann, 2012). In addition, to the cost that is associated with test preparation, there is also the added cost of actually taking the college entrance examinations multiple times and submitting the test scores to the colleges and universities that the student wishes to apply to (Mattern, 2011). If a student fails to take a college entrance examination, it could mean the end of that student’s college hopes, limited opportunity for admission, and reduced eligibility for college scholarships (Klasik, 2013).

Much of the variation in standardized testing scores reflects the differing levels of opportunities that were made available to students. The fact that our society is becoming “increasingly polarized socioeconomically” further handicaps socioeconomically disadvantaged students (Sternberg, 2012, p. 13). Francis (2012, p. 46) stated that “it may be necessary to have programs to improve the quality of public primary and secondary schooling, so that a wider range of individuals” across the socioeconomic levels are better positioned to experience college achievement and then successfully transitioning into the work force.
1.3 LOWER SOCIOECONOMIC STATUS IN RURAL AREAS

SES describes an individual’s or family’s “ranking on a hierarchy according to access to or control over some combination of valued commodities such as wealth, power, and social status” (Sirin, p. 418, 2005, p. 418). Socioeconomic status can influence many different things in an individual’s life, including their educational and occupational opportunities (Ali, 2005). However, “a high-quality education not only enhances individuals’ capability to generate income but also contributes to their general well-being” (Liao, 2013, p. 109). Education is also a key component in facilitating economic growth and in contributing to social equity (Liao, 2013). In addition to these financial benefits associated with education, individuals can be also positively influenced by education through better health, greater civic engagement, and higher rates of employment (Baum & Ma, 2007; Perna, 2006).

Rural students typically have a lower SES and this difference in SES between rural and urban students is influential in the rural-urban difference noted in educational outcomes (Fan, 1999). In fact, among the country’s 250 poorest counties, 244 are rural (Monk, 2007). “The United States is becoming a nation of two classes – one with resources and access to the opportunity structure and one without” (Blustein, 2002, p. 311). Poverty rates are higher in rural areas when compared with youth from nonrural areas (Griffin, 2011). Additionally, rural areas have historically been the highest in America for poverty rates (Lichter, 2007). Thus, low incomes in rural areas are likely to be the greatest obstacle rural youth face in going to college (Grimard, 2004).

Low income families often lack the economic resources that are necessary for their children to pursue postsecondary education (Moller, 2011). Whether or not students took the
necessary steps to prepare themselves for college (e.g., took the ACT/SAT, took courses to prepare for college entrance examinations, visited colleges, received guidance from their school, applied to college, and applied for financial aid) can largely be explained by the student’s SES background (Roderick, 2011). Taking a college entrance examination, like the ACT, is a critical step that is often missed by low income students (Roderick, 2011). Financial resources are a huge barrier that can influence a student’s college decisions (King, 2012) and many low income families are unaware of the amount of financial aid that is available to them, and choose not to pursue the government financial aid (Bozick, 2007).

1.4 RURAL VS. NONRURAL STUDENTS AND SCHOOLS

The opportunity to obtain higher education has played an enormous role “in developing a diverse and skilled labor force, reducing dependency, poverty, and increasing economic growth and social mobility” (Liao, 2013, p. 128). Despite the tremendous increase in the number of students pursuing higher education, rural students continue to face underrepresentation at universities (Liao, 2013).

Rural schools suffer from low socioeconomic opportunities and therefore have fewer school resources than urban schools (Beck, 2005). Many research endeavors have been devoted to examining the inequality between rural and urban schools. The evidence from these studies has shown that rural students’ academic performance is inferior to that of urban students (Liao, 2013; Broomhall, & Johnson, 1994; DeYoung, 1985; Greenberg & Teixeria, 1995; Roscingo & Crowley, 2001; Young, Fraser, & Wollonough, 1997). It has been hypothesized that rural students encounter more academic obstacles than their urban peers including low family socioeconomic status, inadequate educational resources, and less

Students from urban areas have exhibited higher score performance on the mathematics, reading, and science sections of the ACT in comparison to rural students (Fan, 1999). College applicants living in urban areas were more likely to retake the SAT a second, third, or fourth time, as compared with rural students (Vigdor, 2003). It has been shown that there is a tendency for students to improve their scores with retaking the exam, which reflects benefits associated with exam familiarity or increase in knowledge since prior test administrations (Vigdor, 2003).

Rural parents aren’t the only ones with lower educational expectations of their children. When compared with urban students, rural youth have lowered educational and career aspirations for themselves, as well (Griffin, 2011; Irvin, 2012; Bajema, 2002; Demi, 2010). The difference between the aspirations of rural and nonrural youth can be attributed to the lower SES of many rural families (Bajema, 2002). A greater percentage of urban students plan on attending college compared with rural students (Apostal, 1991). In conjunction with this finding, expectations for earning a bachelor’s degree are more common among higher socioeconomic parents and students when compared to lower socioeconomic students (Goldrick-Rab, 2011).

SES has been shown to be positively related to students’ school achievement and it is perceived that there is a difference between rural students and their metropolitan counterparts in this aspect, with rural students usually having lower SES (Fan, 1999). Researchers feel as though this constraint may impact students’ expectations and behaviors and cause low
socioeconomic children to perform worse in middle and high school (Moller, 2011). Rural students are likely to value their education less, and therefore perform worse in school, when compared to urban students. (Coe, Howley, & Hughes, 1989a).

There is a tendency for youth to leave their rural communities once they receive a college degree. As a result of this tendency, some rural families actually discourage their children from attending college in an effort to keep them from leaving their rural communities (Howley, 2009). Research has indicated that rural youth may lower their educational aspirations to maintain connections to their home communities and families (Irvin, 2011). Thus, rural youth are more likely to experience conflicts when trying to decide whether to stay in the community where they grew up or to leave and pursue postsecondary education (Grimard, 2004).

Rural education has often been called inferior to urban education (Bajema, 2002; Anderson, 2008) due to the fact that rural schools tend to offer a more narrow school curriculum and limited access to college preparatory programs and career/college counseling (Byun, 2011). The inferiority of rural education has been influenced by the “declining rural economy” which has “affected the lives of students who attend schools in rural areas” (Raven, 1992, p. 10). Researchers claim that “worsening economic conditions in the rural areas of America have led to a severe shortage of resources for residents of rural areas” (Raven, 1992, p. 10).

Low income students often do not have access to the information and guidance that they need to be able to effectively find their way through the college application process (Roderick, 2011). Along these lines, rural students are less likely than urban youth to talk
with their guidance counselors when making decisions in high school (Irvin, 2011) and are often left to make decisions about higher education on their own, without professional assistance (Schultz, 2004).

Due to reduced student enrollment in rural areas, high schools receive less funding and thus have fewer resources. It is difficult for rural schools to offer students specialized courses and services with limited amounts of educational resources (Howley, 2009). In fact, rural schools are often faced with financial constraints (Harde, 2010), therefore they tend to offer a more limited curriculum, have fewer libraries and programs for special populations, and also employ fewer support personnel for educational services (Raven, 1992). These constraints lead to rural youth having less access to advanced courses while in high school compared to nonrural youth (Irvin, 2011). Urban students are also more likely to utilize private tutoring than their rural counterparts (Zhang, 2013). Rural schools, often have a below average share of highly trained teachers. Teachers in rural schools are only about half as likely to have graduated from a top-ranked college or university when compared to teachers from urban areas (Monk, 2007). Many researchers feel that a potential contributor to rural-urban differences in educational outcomes for students may be due to the differences between rural and urban schools’ availability of resources; including: books, computers, art and science supplies, course offerings, and adequately heated and air conditioned buildings (Fan, 1999). Urban students also typically have, at their disposal, a greater number and diverse curricula offerings within their schools (Raven, 1992).
1.5 RURAL YOUTH AS FIRST GENERATION COLLEGE STUDENTS

Another obstacle rural youth face is the fact that their parents are less likely to have postsecondary degrees due to college degree attainment rates being higher in nonrural areas than rural (Byun, 2011). Therefore, many rural kids have parents without college degrees. First generation college students, students’ whose parents do not have college degrees (Martinez, 2009), are less likely than their peers with college educated parents to participate in activities that lead to college enrollment such as discuss taking the SAT or ACT college entrance examinations or discuss their postsecondary plans with their parents (Choy, 2000). These students are often uninformed, have limited access to test preparation materials, and go on to experience anxiety about scoring low on the entrance exams (Deli-Amen, 2010). First generation college students are more likely than peers with college educated parents to score in the lowest quartile if they do take a college entrance examination (SAT or ACT) (Inkelas, 2007). Students whose parents have attended college are more likely to have access to important information and the financial resources that enable and allow them to follow more traditional college pathways (Goldrick-Rab, 2006). College educated parents are also more likely to have familiarized their children with college life and expectations, thus creating an advantage for their children (Martinez, 2009). As parental education increases, so does the likelihood of a student attending a postsecondary institution (Schultz, 2004). Students with parents who did not attend college “cannot benefit from the first-hand experiences of their parents in the college choice process” (Thomas, 2004, p. 207). First-generation college students tend to lack college decision making knowledge leaving the high school framework more responsible in helping students understand and interpret entrance exams (Deli-Amen,
However, often times, high schools cannot provide adequate college counseling to their students and without one-on-one assistance, students are limited in their ability to make informed decisions regarding their futures and college plans (Deli-Amen, 2010).

Unfortunately, first generation students leave college at double the rate of their non-first-generation counterparts (Hudley, 2009). The same attrition rate can be applied to rural communities, where poor rural students drop out at twice the rate of the national average (Irvin, 2011). In fact, rural students have the highest dropout rates in the country (Irvin, 2012). Researchers have found that parental education can actually predict college attrition in students (Martinez, 2009).

First generation college students have reported feeling less academically prepared for college, had lower college entrance examination scores, and exhibit lower aspirations for obtaining a college degree (Martinez, 2009). Thus, having parents who did not attend college reduces the likelihood of going to college (Choy, 1999). The familial influence is one of the strongest impacts on students’ college decisions (King, 2012). Parents who have goals and expectations that support post-secondary education for their children are more likely to have children who will enroll in post-secondary institutions (Demi, 2010). If students feel that they have parental support, they are more likely to attend college (King, 2012). However, rural parents have lower educational expectations for their children (Byun, 2011). Economically stressed parents are more pessimistic about their children’s future successes, including educational predictions (Crosnoe, 2002).
1.6 AGRICULTURE STUDENTS AND COLLEGE

Career ambition and career attainment from youth who grew up on farms has been a significant concern of rural sociologists in the United States for some time (Lyson, 1979). Agricultural sectors today are increasingly specialized, commercialized, and competitive to the point that more “aspiring farmers and farm managers throughout the country are beginning to view college as a necessary occupational prerequisite” (Lyson, 1979, p. 775) even though rural students have been found to take more vocational courses while in secondary schooling when compared with their urban counterparts (Raven, 1992).

Nationally, in recent years, student enrollments within Colleges of Agriculture have been suffering despite the fact that there have been increasing opportunities in food and agricultural sciences for graduates (Russell, 1993). Historically, students who go on to pursue post-secondary education within a College of Agriculture are from rural communities (Raven, 1992; Reisch, 1986). Students within these rural communities face limited educational opportunities, including a severe shortage of resources, and the declining rural economy further hinders the lives of students attending rural schools (Raven, 1992).

Many colleges and universities have increased their academic entrance requirements for incoming students (Raven, 1992). This challenges high school youth who are attempting to pursue strenuous academic tracks with increasingly competitive college entrance requirements (Russell, 1993). With students being required to take such rigorous courses while in high school, this leaves less room in their course schedules to take vocational classes such as agricultural classes. This leads to a reduction in the pool of students who have an interest in studying post-secondary agriculture education (Russell, 1993).
Considering that student enrollment within Colleges of Agriculture have been primarily comprised of rural high school students who face extreme secondary educational challenges and conditions (Raven, 1992), Colleges of Agriculture need to address this issue by focusing a portion of their resources on rural youth development needs (Russell, 1993). Not only will Colleges of Agriculture suffer if the current trend of decreased enrollment is not reversed, so will the agricultural industries they serve (Russell, 1993). “A serious brain drain away from agriculture is underway. With fewer youth going into agriculture, the long-term future of the agricultural industry is in question” (Russell, 1993, p. 1)

1.7 SUMMARY

Through decreased educational opportunities and poor socioeconomic endeavors, rural high school students face a marked disadvantage when applying to college. A major obstacle that they face in their quest for post-secondary education is in the form of a college entrance examination, such as the ACT and SAT. With decreased scores compared to their urban counterparts, they are often denied admission to four year colleges and universities.
1.8 REFERENCES


[http://books.google.com/books?hl=en&lr=&id=cigyiVNt8nIC&oi=fnd&pg=PA1955&dq=Rethinking+the+SAT:+The+future+of+standardized+testing+in+university+admissions&ots=vFee0vYbYi&sig=61VZBjpDlkximdOPsIGudA2O3Co#v=onepage&q=Rethinking%20the%20SAT%3A%20The%20future%20of%20standardized%20testing%20in%20university%20admissions&f=false].
CHAPTER II

COLLEGE ENTRANCE EXAMINATION SCORE DEFICITS IN AG-INTENSIVE, RURAL, SOCIOECONOMICALLY DISTRESSED NORTH CAROLINA COUNTIES: AN INHERENT RISK TO THE POST-SECONDARY DEGREE ATTAINMENT FOR RURAL HIGH SCHOOL STUDENTS
This work has appeared as a publication: “College Entrance Examination Score Deficits in Ag-Intensive, Rural, Socioeconomically Distressed North Carolina Counties: An inherent risk to the post-secondary degree attainment for rural high school students” in the North American Colleges and Teachers of Agriculture Journal

College Entrance Examination Score Deficits in Ag-Intensive, Rural, Socioeconomically Distressed North Carolina Counties: An Inherent Risk to The Post-Secondary Degree Attainment for Rural High School Students

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Abstract

The emphasis on college entrance examination scores for college admissions by land grant institutions can be detrimental to rural high school students interested in pursuing higher education in agricultural degree programs. Rural high school students from agriculturally

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intensive and socioeconomically distressed counties often demonstrate lower college entrance examination scores than their urban counterparts. Through looking at the North Carolina top ten farm cash receipt counties, students residing in these counties exhibit significant score deficits on the SAT and ACT when compared with the students in the urban counties comprising Research Triangle Park (RTP). The three variables observed in this study: agricultural intensity, rural designation, and level of socioeconomic distress negatively impacted student scores on the SAT and ACT college entrance examinations.

Introduction

Undergraduate college admissions committees consider a multitude of factors when determining the admissions status of prospective undergraduate applicants. One of the most highly considered factors for a student’s admission status at a land-grant institution is his/her performance on SAT and/or ACT college entrance examinations. College entrance examinations, such as the SAT and ACT, are often used for standardization of students, and are also important for measuring the cognitive skills that will often lead to positive educational outcomes (Mattern, 2011). Specifically, either SAT or ACT scores are used by admissions committees as a tool to compare academic achievement of applicants and to draw inferences about the likelihood of a student’s future success at the university level (Lane, 2009). Previous studies have found that low college entrance examination scores often disqualify students from admissions (Buchmann, 2012, p.438). Since many colleges and universities rely heavily upon ACT or SAT scores, many students interested in pursuing higher education in agricultural fields are denied admissions to agricultural degree programs within land grant universities. The denial is a direct result of poor performance on college entrance examinations.

A large majority of students applying to undergraduate agricultural degree programs reside in agriculturally intensive, rural, socioeconomically distressed counties. The histories of agricultural and rural communities have been “closely intertwined” (Smithers, 2005, p. 281). Furthermore, the intimate relationship between agriculturally intensive and rural communities is clearly demonstrated when examining the top ten North Carolina counties 2009 farm cash receipts. The top ten North Carolina counties that lead the state in farm cash receipts for livestock and crop production are all classified as rural counties (Webb, 2011; N.C. Economic Development Center, Inc., 2012; North Carolina).

The rural/non-rural difference in college enrollment has largely been attributed to differences in socioeconomic and demographic backgrounds of students residing in these areas (Byun, 2011). Historically, rural areas have the highest poverty rates in America as persistently poor counties (Lichter, 2007) and their rural students typically have lower socioeconomic statuses. Socioeconomic status has been found to be highly influential in rural-urban differences, noted in educational outcomes (Fan, 1999). As a result, there are unequal deviations between rural and urban schools’ availability of resources. The variations of resources include: books,
computers, art and science supplies, course offerings, and adequately heated and cooled buildings (Fan, 1999).

When compared with urban students, rural youth have lower educational and career aspirations (Griffin, 2011). Eighteen percent of U.S. students attend rural schools (Hardé, 2007) and often times these students are behind their non-rural counterparts when it comes to college enrollment and degree attainment, which many researchers have attributed to their lower socioeconomic background (Byun, 2011). Scores from the SAT college entrance examination are so highly correlated with family income and parents’ education that the predictive power of the SAT actually reflects socioeconomic status (Atkinson, 2009). Similarly, students from metropolitan areas have exhibited higher performance than rural students in mathematics, reading, and science on the ACT college entrance examination (Fan, 1999). Therefore, socioeconomic status is highly correlated with test scores; these youth from the top socioeconomic tiers are in a far better position to be accepted into these highly selective institutions (Alon, 2009).

Many professional test preparation companies charge hundreds of dollars for their test preparation services; thus more privileged students are able to benefit from college entrance examination coaching which they can afford (Mattern, 2011). Students from these high socioeconomic statuses can also utilize expensive test preparation activities such as private classes or tutors which put them at a marked advantage over low socioeconomic students in their access to postsecondary education (Alon, 2009). College applicants living in urban areas were also more likely to retake the SAT a second, third, or fourth time, as compared with rural students (Vigdor, 2003). The expenses associated with taking college entrance examinations and test preparation can be more easily absorbed by socioeconomically advantaged families (Buchmann, 2012). Enrollment in private test preparation courses corresponds to a SAT score gain of around 30-40 points which, in turn, increases a student’s chances of “getting into the nation’s most selective colleges and universities” (Buchmann, 2012, p. 455). Ultimately, high socioeconomic status (SES) leads to higher test scores through knowledge of test taking strategies (Sackett, 2009). In contrast, “students from disadvantaged backgrounds are unaware of preparation options, or are financially constrained from taking advantage of them, and will be less likely to use test preparation” (Buchmann, 2012, p. 440). Today, education is a primary means for success as an adult; therefore, the challenges that rural youth face when trying to enroll in postsecondary education corresponds to an apparent obstacle to social mobility (Crosnoe, 2002).

Study Area

The focus of this study is on the top ten farm cash receipt counties within North Carolina (Table 1) which is based upon the 2009 Agricultural Statistics Book by the North Carolina Department of Agriculture and Consumer Services (Webb, 2011). The top ten counties upon which this study has been conducted are the following: Duplin, Sampson, Union, Wayne,

Next, the top farm cash receipt counties in North Carolina (n=10) were classified as rural vs. urban (Figure 1). According to the North Carolina Economic Development Center’s classification of rural and urban, a county is classified as rural if it has a “population density of no more than 250 people per square mile at the time of the 2000 U.S. Census” (“NC Economic Development Center, Inc.”, 2012). It can be noted that out of the ten top agriculture producing counties in North Carolina, all are classified as rural. From the aforementioned counties (n=10), the N.C. Economic Development Center Inc. has deemed Duplin, Sampson, Union, Wayne, Robeson, Bladen, Wilkes, Johnston, Nash and Randolph counties as rural (“N.C. Rural Economic Development Center, Inc.”, 2012).

The N.C. Department of Commerce annually ranks the state’s 100 counties based upon their economic well-being, and then assigns each county a tier designation (Figure 2). The 40 most socioeconomically distressed counties in the state of North Carolina are classified as being Tier One, the next 40 as Tier Two, and the 20 least socioeconomically distressed counties are then designated as Tier Three.

The levels of socioeconomic distress of the top farm cash receipt counties (n=10) in North Carolina were then examined. The most socioeconomically distressed counties were identified as Tier One (Wayne, Robeson, Bladen, and Wilkes); an additional four counties were designated as Tier Two (Duplin, Sampson, Nash, and Randolph); leaving only two (Union and Johnston) as Tier Three (“N.C. Rural Economic Development Center, Inc.”, 2009).

Methods

We analyzed the 2009 scores on the SAT and ACT for North Carolina high school students to compare students from agriculturally-intensive, rural, and socioeconomically distressed demographics against Research Triangle Park urban high school students (North Carolina State Board of Education, 2009). We then compared these two distinct student populations’ scores with the fall 2009 freshman incoming class at North Carolina State University (NCSU). The fall 2009 NCSU freshman class data was accessed from North Carolina State University’s 2009 Freshman Profile (North Carolina State University, 2012).

The agriculturally-intensive counties examined in this study (Table 1) were selected based on their status as being in the top ten North Carolina counties for farm cash receipts according to the North Carolina Department of Agriculture and Consumer Services’ “Agricultural Statistics – 2009 Annual Statistics Book” (Webb, 2011). The North Carolina Rural Economic Development Center Inc.’s list of urban and rural counties in North Carolina was also used to designate whether these ten counties were classified as urban or rural (Figure 1). Counties analyzed in this study were considered rural if they had a population
density at the 2000 U.S Census of no more than 250 people per square mile (“N.C. Rural economic Development Center, Inc.”, 2012). Finally, the North Carolina Department of Commerce’s Economic Development 2009 Tier Rankings (“North Carolina Department of Commerce,” 2009) were utilized to denote the socioeconomic status of each of the counties examined in this study (Figure 2). The Department of Commerce classifies the state’s 100 counties based on their economic well-being and then annually assigns each county a Tier designation. The state’s 40 most distressed counties are labeled as Tier One, the next 40 most distressed counties as Tier Two, and the least 20 distressed counties are designated as Tier Three (“North Carolina Department of Commerce”, 2011).

Results

The mean score for the top ten North Carolina counties in total farm cash receipts was 952.8 on the SAT and 19.9 on the ACT (Table 2). North Carolina’s urban counties had a higher mean score, with an SAT score of 1007.9, and an ACT score of 21.4 (Table 2). Within Research Triangle Park (RTP), the college entrance examination scores increased even more. The RTP’s mean SAT score was a 1056.7, and 22.7 on the ACT (Table 2). When statistically analyzing the top ten counties against the RTP counties and NC urban counties, it can be noted that a significant statistical difference* (p<0.05) in scores on the SAT and ACT is observed.

When looking at socioeconomic status it was noted that increased economic distress and college entrance examination scores were inversely correlated. The NC Rural Tier 1 counties had a mean score of 923.23 on the SAT and 19.23 on the ACT (Table 2). As we improve socioeconomic status, and observe the Tier 2 NC Rural counties, the scores increase on the SAT and ACT, with respective scores of 980.97 and 20.57 (Table 2). The least economically distressed, Tier 3 counties had the highest overall mean scores, with 1022.45 on the SAT and 21.9 on the ACT (Table 2). After analyzing the scores between the tiers, it can be noted that there are statistical significant differences* (p<0.05) between the scores for the three different tiers.

The data clearly shows that students from rural counties exhibited significant score deficits on their SAT and ACT college entrance examinations in comparison to urban students from RTP, and that the lower socioeconomic statuses found within these rural counties is associated with students’ performance on SAT and ACT college entrance examinations.

A comparison of the 2009 NCSU fall freshmen averages on the SAT and ACT with students from the top ten NC farm cash receipt counties shows these students have significant lower scores. Due to the limitation of only one observation for the 2009 NCSU fall freshmen’s college entrance examinations, a statistical analysis could not be performed. However, you
can numerically compare the 2009 NCSU freshmen averages against the aforementioned counties (n=10) and see the educational hindrance that these rural and socioeconomically distressed students must face. The 2009 NCSU freshmen had a mean score of 1184 on the SAT and 26 on the ACT in comparison with the top ten NC farm cash receipt counties’ scores of 952.8 on the SAT and 19.9 on the ACT. This reveals that the NC farm cash receipt top ten counties were facing a score deficit of 231.2 points on the SAT and 6.1 points on the ACT (Table 2).

**Discussion and Conclusions**

Due to the aforementioned educational challenges that many students from agriculturally-intensive, rural, and socioeconomically distressed counties face, we hypothesized that students residing in counties with these designations would exhibit significant score deficits on the SAT and ACT when compared with the averages of the urban counties comprising Research Triangle Park (RTP). Statistical analysis of the data collected in this study confirmed that the three variables examined: agricultural intensity, rural designation, and level of socioeconomic distress negatively impacted student performance on both the SAT and ACT college entrance examinations.

An analysis of the data indicated that the NC top ten farm cash receipt counties had lower scores on the SAT and ACT when compared with the 2009 NCSU freshman average. These students also scored lower than their urban counterparts’ average from the Research Triangle Park. It was further noted that regardless of which variable was examined, rural designation or agricultural intensity, as socioeconomic distress levels increased (moving from Tier Three to Tier One) the average scores on the SAT and ACT continued to drop.

The significant deficits in college entrance examination scores of agriculturally intensive counties raises a severe challenge for land grant universities to carry out their original mission to “teach agriculture, military tactics, and the mechanic arts, as well as classical studies, so that members of the working classes could obtain a liberal, practical education” (Cornell University, 2010). If land-grant institutions are to remain true to their original undertaking, they must make themselves accessible to the students within the states they serve.

Currently, a large majority of students from agriculturally-intensive counties in North Carolina who wish to pursue higher education in agricultural fields of study are not competitive for admissions to land grant institutions offering such degree programs because of score deficits on the ACT and SAT. As a result, many traditional agricultural degree programs are downsizing or even closing due to limited undergraduate student populations. This poses a direct threat to the future development of agriculture across the U.S.A.

Within each land-grant institution (Cornell, 2010), a Cooperative Extension System provides
educational programming in five key areas: sustaining agriculture and forestry, protecting the environment, maintaining viable communities, developing responsible youth, and developing strong, healthy and safe families (NC Cooperative Extension, 2012). If the Cooperative Extension System is going to achieve the goals of each of these five key areas, it is imperative that the next generation of Cooperative Extension leaders help to bridge the deficit in SAT and ACT test scores in rural and socioeconomically distressed counties. The Cooperative Extension System can help develop future agricultural students in these communities by removing the current college entrance examination score roadblock that prevents many students from such areas from gaining admissions to land-grant universities. This goal can be accomplished through supplemental education from these institutions.

North Carolina State University and the North Carolina Cooperative Extension Service are partnering to provide an opportunity for students who are interested in pursuing a Bachelors Degree in agricultural and/or life science degree programs who live in agriculturally intensive counties. To help these students increase their ACT College Entrance Examination Scores and improve their chances of being accepted into college, a special program, ACT Supplemental Preparation in Rural Education (A.S.P.I.R.E.) has recently been launched through the College of Agriculture and Life Sciences at North Carolina State University and the North Carolina Cooperative Extension System. The purpose of A.S.P.I.R.E. is to raise scores on the ACT College Entrance Examination in order to increase the number of rural high school students pursuing higher education in agriculture. The North Carolina Extension agents, who will teach this program, will be trained through a Master Trainer Course offered through the Princeton Review. These agents will be instructed on how to teach the skills, strategies, and tactics for tackling the ACT. After the A.S.P.I.R.E. agents are trained, they will teach the ACT test preparation skills to rural high school students across the state of North Carolina. The A.S.P.I.R.E. program is a new approach and after completion of the program, the results will be analyzed to determine the efficacy of implementing ACT preparation to rural high school students through the use of North Carolina Extension agents.

**Summary**

The importance of college entrance examination scores for admissions by land grant institutions are often the leading factor for students not being accepted into college. Rural high school students from agriculturally intensive counties are more likely to have a lower socioeconomic status which further impedes their access to resources that could improve their SAT or ACT scores. With increased scores these students, from the aforementioned counties, a potential higher acceptance rate to colleges and universities could be achieved. Land grant institutions must assist students from rural, socioeconomically distressed, and agriculturally intensive counties in bridging deficits on college entrance examination scores in order to improve their chances of gaining admissions to post-secondary education in agricultural fields.
Table 1. The 2009 top ten NC counties in total farm cash receipts.

<table>
<thead>
<tr>
<th>County</th>
<th>Thousand Dollars worth of farm cash receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duplin</td>
<td>876,984</td>
</tr>
<tr>
<td>Sampson</td>
<td>841,595</td>
</tr>
<tr>
<td>Union</td>
<td>419,882</td>
</tr>
<tr>
<td>Wayne</td>
<td>336,947</td>
</tr>
<tr>
<td>Robeson</td>
<td>333,624</td>
</tr>
<tr>
<td>Bladen</td>
<td>295,088</td>
</tr>
<tr>
<td>Wilkes</td>
<td>259,885</td>
</tr>
<tr>
<td>Johnston</td>
<td>237,316</td>
</tr>
<tr>
<td>Nash</td>
<td>198,926</td>
</tr>
<tr>
<td>Randolph</td>
<td>196,837</td>
</tr>
</tbody>
</table>
Figure 1. *North Carolina map classifying rural and urban counties.*

Source: N.C. Rural Economic Development Center, Inc.
Figure 2. *North Carolina map showing 2009 county economic tier designations.*

Source: N.C. Rural Economic Development Center, Inc.
Table 2. Comparison of 2009 SAT and ACT scores between NCSU Fall 2009 Freshman Class, State Average of North Carolina students, Research Triangle Park Urban students, students from the Top Ten Farm Cash Receipts, and Tier 1, 2, & 3 in NC.

*Note: The combined SAT critical reading (CR) and math (M) sections are scored on a 1,600 point scale and the ACT is scored on a 36 point scale.

<table>
<thead>
<tr>
<th>Counties</th>
<th>SAT (CR + M)</th>
<th>NCSU Average SAT Score Differential</th>
<th>ACT</th>
<th>NCSU Average ACT Score Differential</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCSU Fall 2009 Freshman Averages</td>
<td>1184</td>
<td>0</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>North Carolina</td>
<td>1006</td>
<td>-178</td>
<td>21</td>
<td>-5</td>
</tr>
<tr>
<td>Rural North Carolina</td>
<td>948</td>
<td>-236</td>
<td>20</td>
<td>-6</td>
</tr>
<tr>
<td>Urban North Carolina</td>
<td>1007.93</td>
<td>-176.07</td>
<td>21.4</td>
<td>-4.6</td>
</tr>
<tr>
<td>Research Triangle Park in NC</td>
<td>1056.67</td>
<td>127.33</td>
<td>22.6</td>
<td>-3.4</td>
</tr>
<tr>
<td>Top 10 Farm Cash Receipts</td>
<td>952.8</td>
<td>-231.2</td>
<td>19.9</td>
<td>-6.1</td>
</tr>
<tr>
<td>Tier 1 Top 10 Farm Cash Receipts</td>
<td>939</td>
<td>-245</td>
<td>19</td>
<td>-7</td>
</tr>
<tr>
<td>Tier 2 Top 10 Farm Cash Receipts</td>
<td>932</td>
<td>-251</td>
<td>19</td>
<td>-7</td>
</tr>
<tr>
<td>Tier 3 Top 10 Farm Cash Receipts</td>
<td>1022</td>
<td>-162</td>
<td>22</td>
<td>-4</td>
</tr>
<tr>
<td>Tier 1 Rural North Carolina</td>
<td>923.23</td>
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<td>Tier 3 Rural North Carolina</td>
<td>1022.45</td>
<td>-161.55</td>
<td>21.91</td>
<td>-4.09</td>
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</table>
Table 3. *Comparison of 2009 SAT scores between Rural North Carolina students, Urban North Carolina students, students from the Top Ten Farm Cash Receipt Counties, Tier 1, 2, & 3 in NC, and Research Triangle Park Urban students.*

*Note: The combined SAT critical reading (CR) and math (M) sections are scored on a 1,600 point scale.*

<table>
<thead>
<tr>
<th>Group</th>
<th>SAT</th>
<th>Standard Error</th>
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</thead>
<tbody>
<tr>
<td>NC Urban</td>
<td>1007.93</td>
<td>13.99</td>
</tr>
<tr>
<td>Research Triangle Park</td>
<td>1056.67</td>
<td>31.30</td>
</tr>
<tr>
<td>Rural Tier 1 North Carolina</td>
<td>932.23</td>
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<tr>
<td>Rural Tier 2 North Carolina</td>
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<td>9.16</td>
</tr>
<tr>
<td>Rural Tier 3 North Carolina</td>
<td>1022.45</td>
<td>16.35</td>
</tr>
<tr>
<td>Top Ten NC Counties for Farm Cash Receipts</td>
<td>952.8</td>
<td>17.15</td>
</tr>
</tbody>
</table>
Table 4. Comparison of 2009 ACT scores between Rural North Carolina students, Urban North Carolina students, students from the Top Ten Farm Cash Receipt Counties, Tier 1, 2, & 3 in NC, and Research Triangle Park Urban students.
*Note: The ACT is scored on a 36 point scale.

<table>
<thead>
<tr>
<th>Group</th>
<th>ACT</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC Urban</td>
<td>21.4</td>
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<tr>
<td>Research Triangle Park</td>
<td>22.67</td>
<td>.85</td>
</tr>
<tr>
<td>Rural Tier 1 North Carolina</td>
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<td>.24</td>
</tr>
<tr>
<td>Rural Tier 2 North Carolina</td>
<td>20.57</td>
<td>.25</td>
</tr>
<tr>
<td>Rural Tier 3 North Carolina</td>
<td>21.9</td>
<td>.44</td>
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<tr>
<td>Top Ten NC Counties for Farm Cash Receipts</td>
<td>19.9</td>
<td>.47</td>
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Literature Cited


CHAPTER III

“A.S.P.I.R.E.” ACT SUPPLEMENTAL PREPARATION IN RURAL EDUCATION:
AN INITIATIVE DESIGNED TO BRIDGE DEFICITS ON THE ACT
COLLEGE ENTRANCE EXAMINATION
(PILOT STUDY)
3.1 ABSTRACT
High school students from rural agriculturally intensive communities that have been described as socioeconomically distressed frequently have an interest in pursuing higher education within agricultural fields of study to enhance their future careers. However, these students are often unsuccessful in gaining admissions to universities offering B.S. degrees in agricultural and life sciences due to significantly lower scores on college entrance examinations such as the ACT. The A.S.P.I.R.E. (ACT Supplemental Preparation In Rural Education) Program is an initiative that partners the College of Agriculture and Life Sciences at NC State University with the North Carolina Cooperative Extension System to bridge these apparent deficits in rural high school students’ performance on the ACT College Entrance Examination in order to increase these students’ admissions rates. Through participation in the A.S.P.I.R.E. course, students have been shown to increase their ACT score on average by approximately 3.5 points on the ACT’s 36 point scale.

3.2 INTRODUCTION
Students’ college entrance examination scores on the SAT and ACT are used for the standardization and comparison of students for college admission which ultimately affects students’ college admission statuses (Mattern, 2011). College admissions committees consider a number of different factors when determining whether or not to admit a student, one of which is students’ performance on college entrance examinations (Lane, 2009). The ACT and SAT remain the normal referenced tests that are used by colleges and universities to compare college applicants against one another (Atkinson, 2009). The use of standardized test scores as screening instruments has intensified in recent decades in an effort to ease the
evaluation burden associated with a growing number of highly qualified and heterogeneous student pools (Alon, 2009). Now that universities rely so heavily on test scores, other admissions decisions, like class rank, have declined in importance (Alon, 2009). “This shifting meritocracy means rising returns to test scores in admission” and therefore “favoring seniors with high test scores” (Alon, 2009, p. 736). These findings indicate that students could be denied admission to a university and subsequent pursuit of a higher education as a result of poor performance on a college entrance examination.

With respect to college entrance examinations, “low scores very often disqualify students from admission.” (Buchmann, 2012, p. 438). With college entrance examination scores posing an enormous hurdle to college admissions, it is imperative that examination score deficits are bridged for rural youth with traditionally lower scores than their urban peers. The A.S.P.I.R.E Program was designed as a partnership between North Carolina State University and the NC Cooperative Extension Service to help students in areas that are deemed as rural, ag-intensive, or have been classified by North Carolina as socioeconomically distressed. This program aims to help bridge deficits on students’ scores on the ACT examination. Through this program, NC Cooperative Extension agents are able to follow their mission of offering “youth development opportunities throughout rural America” (Conglose, 2000) by providing educational assistance to “the rural, agrarian American population” (Cooper, 2001) through ACT prep courses offered in rural, agriculturally intensive, and socioeconomically distressed counties.
3.3 PROGRAM OVERVIEW AND IMPLEMENTATION

The A.S.P.I.R.E. Program is a cooperative initiative between the College of Agriculture and Life Sciences at North Carolina State University and the NC Cooperative Extension Service. It was devised as a means to improve ACT college entrance examination scores; thereby improving college admissions rates of rural high school students from agriculturally intensive counties classified as socioeconomically distressed, who are interested in pursuing higher education and future careers within agricultural and life science disciplines.

Agents are selected for the A.S.P.I.R.E. Program by interest and invitation to attend an informational meeting to learn more about A.S.P.I.R.E. and how the program could impact their county. While at the informational meeting, potential A.S.P.I.R.E. agents take a sample diagnostic exam to acquaint them with the type of information they would be teaching. Based off of the potential agents’ performance on the exam, a decision will be made based on whether the agent will implement the program in their home county. After the informational meeting an ACT Master Trainer course is scheduled for the agents.

A.S.P.I.R.E. agents complete a 24 hour, intensive ACT Master Trainer Course offered by the standardized test preparatory company, The Princeton Review Inc. A.S.P.I.R.E. agents are trained to teach ACT test preparation to high school students throughout rural, ag-intensive, socioeconomically distressed North Carolina counties. The target demographic for students participating in the A.S.P.I.R.E. program are sophomores and juniors in high school with a demonstrated interest in agricultural and life science careers and a minimum 3.2 grade point average. As a part of their participation in the A.S.P.I.R.E. program, students receive a Princeton Review ACT Study Manual, Princeton Review 1,296 practice questions manual,
on-line access to additional practice questions, four full-length diagnostic ACT practice
exams with score analysis and breakdown, Princeton Review Selective College Admissions
Booklet, 30 hours of class instruction for ACT test preparation, and college application
assistance. A.S.P.I.R.E. students learn the latest skills and strategies to help improve their
ACT scores, therefore increasing their chances of gaining college admissions to agricultural
and life science degree programs.
Ultimately through the A.S.P.I.R.E. program, ACT scores of rural high school students in
North Carolina from socioeconomically distressed counties, will improve; thus increasing the
likelihood that these students’ will gain acceptance to agricultural and life science degree
programs. This program will effectively provide a greater number of college-educated
individuals with an interest in pursuing careers in agriculture or life sciences in years to come
in this state, thereby helping to develop the future agricultural leaders within North Carolina.

3.4 METHODS
Five counties participated in the pilot study for the A.S.P.I.R.E. program during summer and
fall of 2012. NC Extension Agents (n=8) from these pilot counties completed the Princeton
Review 24 hour Master Trainer course to learn how to provide ACT test preparation to high
school students. Fifty students (n=50) across these five counties completed 10 weeks of
ACT test preparation taught by these A.S.P.I.R.E. agents. During the course, students
received 30 hours of ACT test preparation in the following subjects: Reading, English, Math,
and Science. As part of the A.S.P.I.R.E. program, students took four full-length ACT practice
exams. Scores were recorded from all students at each testing. The first test (pre-test) was
administered prior to any ACT test preparation instruction. The second exam took place after
10 hours of instruction, the third test after 20 hours of ACT test preparation, and a fourth (post-test) was given to participants after completion of the entire course. For each test, A.S.P.I.R.E. students are allotted four hours to complete the practice ACT test, which are administered on Saturday mornings to simulate real ACT testing. The A.S.P.I.R.E. participants answer the questions on a Scantron® and the A.S.P.I.R.E. agents submit their Scantrons® to The Princeton Review Inc. where the tests are scored and returned to the A.S.P.I.R.E. agents for distribution to the participants. The scores from the four ACT exams were then analyzed using a Proc Mixed analysis (SAS, 2012). Means were separated using the Proc Mixed function of the SAS program with a p-value <0.05 indicating significant differences between means.

3.5 RESULTS

The ACT is scored on a 36 point scale composed of the average grade of four sections including: Math, Science, English and Reading. The A.S.P.I.R.E. pilot pre-test ACT scores averaged 18.8; reading was the least problematic area with scores of 20.4; and English was the lowest scoring section, with a score of: 17.6. (Table 5)

For each section of the test (Math, English, Reading, and Science) scores improved overall. Specifically, for the math section, the average pre-test score was 18.6 and for the post test it was 21.6*** where the average score significantly improved by three points. A.S.P.I.R.E. participants improved their scores significantly in the Science section by 3.3 points with an average score of 18.7 on the pre-test and a 22 on the post test***. English had the lowest average score on the pre-test, with an average score of 17.6, however, the average post-test score improvement for English was the highest with a score of 23*** where students
significantly improved an average of 5.4 points. The highest overall scores were associated with reading on the pre- and post-test with scores of 20.4 and 22.6**, respectively with the post-test score being higher. A.S.P.I.R.E. classes significantly improved test scores in all four areas and the composite ACT score was significantly increased by 3.5 points (18% improvement) where the pre-test score was 18.8 and the average post-test score was 22.3 points. (Table 5)

Table 5. Estimated means for A.S.P.I.R.E. test scores on pre-test (test 1), test 2, test 3, and post-test (test 4) on the 36 point ACT scale.

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Test 2</th>
<th>Test 3</th>
<th>Post-test</th>
<th>SEM</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>18.6c</td>
<td>18.7c</td>
<td>20.2b</td>
<td>21.6a</td>
<td>0.69</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Science</td>
<td>18.7c</td>
<td>20.3b</td>
<td>17.9c</td>
<td>22a</td>
<td>0.76</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>English</td>
<td>17.6c</td>
<td>21.2b</td>
<td>20.4b</td>
<td>23a</td>
<td>0.93</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Reading</td>
<td>20.4c</td>
<td>24.8a</td>
<td>21.7bc</td>
<td>22.6b</td>
<td>1.09</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>ACT Composite</td>
<td>18.8c</td>
<td>21.3ab</td>
<td>20bc</td>
<td>22.3a</td>
<td>0.74</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

abc Superscripts indicate mean differences across the row (p<0.001)

3.6 SUMMARY

The A.S.P.I.R.E. Program aims to impact the lives of NC rural high school students from ag-intensive, socioeconomically distressed counties by improving their ACT college entrance examination score which will assist them in gaining acceptance to pursue higher education in agricultural and life science degree programs. This quote “Strong demand for more educated workers, coupled with a relative slowdown of their supply, has led to a sharp increase in the wage premium of college degrees in the United States since the 1980s” by Roksa (2010, p. 389) rings true. For many rural high school students, college degree attainment will enhance their prospects for a successful future. Researchers have found that there is 6 to 15% higher
lifetime earning associated with each additional year of schooling beyond the secondary level. (Card, 2001; Klasik, 2012). However the benefits of post-secondary education goes well beyond monetary assets, and includes better health, greater civic engagement, and higher rates of employment (Baum & Ma, 2007; Perna, 2006; Klasik, 2012).

A.S.P.I.R.E. participants improved their ACT composite score by 3.5 points on average, an 18% improvement from the beginning to the completion of the A.S.P.I.R.E. course. This data indicates that the A.S.P.I.R.E. program is successful and with its continued use will improve students’ ACT scores thereby enhancing students’ chances of gaining admissions into a four year university/college.
3.7 REFERENCES


CHAPTER IV

“A.S.P.I.R.E.” ACT SUPPLEMENTAL PREPARATION IN RURAL EDUCATION:
AN INITIATIVE DESIGNED TO BRIDGE DEFICITS IN THE ACT COLLEGE
ENTRANCE EXAMINATION (ROUND TWO)
4.1 ABSTRACT

Rural high school students often struggle when taking College Entrance Examinations, such as the ACT, which could negatively affect their pursuit of post-secondary education due to the rigorous admissions criteria imposed by institutions of higher education. The A.S.P.I.R.E. (ACT Supplemental Preparation In Rural Education) Program is an initiative that partners the College of Agriculture and Life Sciences at NC State University and the North Carolina Cooperative Extension System to overcome rural high school students’ score deficits on the ACT College Entrance Examination in order to increase admissions rates of these students. Through participation in the second round of the A.S.P.I.R.E. program, it was noted that students on average increased their ACT score by 1.5 points on the ACT’s 36 point scale.

4.2 INTRODUCTION

University admissions committees consider many different components when determining whether to admit or deny a student into college. One of the most heavily weighted factors is students’ performance on college entrance examinations such as the SAT and ACT (Lane, 2009). The ACT and SAT remain the front runners of admission tests used by colleges and universities as a standard metric to compare college applicants against one another (Atkinson, 2009). The use of standardized test scores as screening instruments has intensified in recent decades as an effort to ease the evaluation burden that is associated with a growing number of highly qualified and heterogeneous student pools (Alon, 2009).
With college entrance examination scores posing an enormous hurdle to college admissions, it is imperative that examination score deficits be bridged for rural youth. The A.S.P.I.R.E Program was designed as a joint venture between North Carolina State University and the NC Cooperative Extension Service to help students in rural, ag-intensive, and socioeconomically distressed counties across North Carolina bridge deficits on their ACT, College Entrance Examination scores.

4.3 STATE WIDE ADMINISTRATION OF THE ACT

The ACT and the North Carolina Department of Public Instruction have entered into an agreement for all North Carolina 11th grade students to take the ACT test. This state wide assessment will measure what students have learned in their high school courses and can help identify the material students still need to learn in order to succeed in college or in a career (ACT, 2013a). The idea surrounding state wide administration of college entrance examinations is the belief that by providing all high school students with college entrance examination scores college enrollment rates would increase (Klasik, 2013). North Carolina is just one of nine states to administer that ACT state wide (Public Schools of North Carolina, 2013). Colorado and Illinois were the first states to require ACT testing for all high school juniors in 2001 (Klasik, 2013).

The ACT is a college readiness assessment which is both curriculum- and standards-based. The ACT can be used in educational and career planning and also in assessing students' academic preparation for college (The ACT, 2013). The ACT reports College Readiness Benchmark scores, which is “the minimum score needed on an ACT subject-area test to indicate a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a
C or higher in the corresponding credit-bearing college courses, which include English Composition, Algebra, Social Science and Biology” (ACT, n.d., p. 3). The College Readiness Benchmark Scores are empirically derived based on actual performance of students in college and were updated in 2013. The updated scores are: English 18, Math 22, Reading 22, and Science 23(ACT, n.d.) For the 2013 North Carolina state wide administration of the ACT, the North Carolina average was well below the Benchmark Scores, with an average composite score of only 18.7 points (ACT, n.d.). This was a drop of: 2.9 points from the 2009 North Carolina ACT average composite score of 21.6 (ACT, n.d.). However, it is important to note that the number of students in North Carolina taking the ACT drastically increased in that same time period as well due to the requirement that all juniors in the state of North Carolina take the ACT: it is estimated that 95,782 students in North Carolina took the ACT in 2013 which is a 617.6% increase from 2009 (ACT, 2013b). Other states that also require students to take the ACT experienced a drop similar to North Carolina’s but did show score improvements in subsequent years (Public Schools of North Carolina, 2013).

The A.S.P.I.R.E. program focuses on enhancing rural students’ ACT test preparation due to the state wide administration of the ACT and the increasing reliance on college entrance examination scores for college admission decisions.

4.4 PROGRAM OVERVIEW AND IMPLEMENTATION

The A.S.P.I.R.E. Program is a collaborative project between the College of Agriculture and Life Science at North Carolina State University and the NC Cooperative Extension System. It was developed as a means to increase ACT college entrance examination scores; thereby improving college admission rates of rural high school students.
The A.S.P.I.R.E. program continues to follow the same framework as was implemented in the pilot program. The A.S.P.I.R.E. agents complete a 24 hour, intensive ACT Master Trainer Course offered by the standardized test preparatory company, The Princeton Review Inc. A.S.P.I.R.E. participants also receive a Princeton Review ACT Study Manual, Princeton Review 1,296 practice questions manual, on-line access to additional practice questions, four full-length diagnostic ACT practice exams with score analysis and breakdown, Princeton Review Selective College Admissions Booklet, 30 hours of class instruction for ACT test preparation, and college application assistance. The ultimate goal of the A.S.P.I.R.E. program is to improve ACT scores of rural high school students in North Carolina from socioeconomically distressed counties, thereby increasing the likelihood that these students will gain acceptance into institutions of higher education offering agricultural and life science degree programs. This program will effectively provide a greater number of college-educated individuals with an interest in pursuing careers in agriculture or life sciences in years to come which will, in turn help to develop future North Carolina agricultural leaders.

4.5 METHODS

Thirteen counties (n=13) participated in the second round of the A.S.P.I.R.E. program during the Spring of 2013. NC Extension Agents and Public School Teachers within the thirteen counties completed the Princeton Review Master Trainer 24 hour course to learn how to provide ACT test preparation to high school students. Within the 13 counties, eighty eight participants (n=88) from the second round of A.S.P.I.R.E. students consented for their scores to be used in the study.
The second round of the program was implemented in the same manner as the pilot study where students received 30 hours of ACT test preparation in the following subjects: Reading, English, Math, and Science. Testing during round two of ASPIRE was conducted: with the same approach as the pilot program where students took four full-length ACT practice exams. Scores were recorded from all students at each test. The first test (pre-test) was administered prior to any ACT test preparation instruction. The second exam took place after 10 hours of instruction, the third test after 20 hours of ACT test preparation, and a fourth (post-test) was given to participants after completion of the entire course (30 total hours of ACT test preparation). For each test, A.S.P.I.R.E. students were allotted four hours to complete the practice ACT test, which are administered on Saturday mornings to simulate real ACT testing conditions. The A.S.P.I.R.E. participants answered the questions on a Scantron® and the A.S.P.I.R.E. instructors submitted their Scantrons® to The Princeton Review. The tests are scored and returned to the A.S.P.I.R.E. instructors for distribution to A.S.P.I.R.E students. The scores from the round two ACT exams were analyzed using the same program as the pilot study, which was a Proc Mixed analysis (SAS, 2012). Means were separated using a Proc Mixed analysis (SAS program) with a p-value <0.05 indicating significant differences between means.

4.6 RESULTS

The ACT is scored on a 36 point scale, which is derived from the average grade of four sections including: Math, Science, English and Reading. The A.S.P.I.R.E. second round pre-test ACT scores averaged 18.6; the Math section had the highest average pre-test score at 19.5; and English was the lowest scoring section with a score of: 17.4 on the pre-test (Table
5) For each section of the test (Math, English, Reading, and Science), scores improved overall. Specifically, for the math section, the average pre-test score was 19.5 and the post-test score was 20.8* where the average score improved by 1.3 points. A.S.P.I.R.E. participants improved their scores in the Science section by 1.2 points with an average score of 18.7 on the pre-test and a 19.9** on the post test. English had the lowest average score on the pre-test, with an average score of 17.6, however, A.S.P.I.R.E. participants were able to improve that score by 2.2 points to an average post-test score of 19.6**. Within the Reading section, the A.S.P.I.R.E. students started out with a pre-test average of 18.9 and improved after the course to an average post-test score of 20.1** illustrating a 1.2 point improvement. The A.S.P.I.R.E. classes improved test scores in all four areas and the composite ACT score was increased by 1.5 points where the pre-test score was 18.6 and the average post-test score was 20.1 points. (Table 6)

**Table 6.** Estimated means for A.S.P.I.R.E. round two test scores on pre-test (test 1), test 2, test 3, and post-test (test 4) on the 36 point ACT scale.

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Test 2</th>
<th>Test 3</th>
<th>Post-test</th>
<th>SEM</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>19.5&lt;sup&gt;b&lt;/sup&gt;</td>
<td>19.6&lt;sup&gt;b&lt;/sup&gt;</td>
<td>20.5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>20.8&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.57</td>
<td>0.002</td>
</tr>
<tr>
<td>Science</td>
<td>18.7&lt;sup&gt;c&lt;/sup&gt;</td>
<td>19.3&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>17.6&lt;sup&gt;c&lt;/sup&gt;</td>
<td>19.9&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.58</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>English</td>
<td>17.4&lt;sup&gt;b&lt;/sup&gt;</td>
<td>19.9&lt;sup&gt;a&lt;/sup&gt;</td>
<td>19.4&lt;sup&gt;a&lt;/sup&gt;</td>
<td>19.6&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.72</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Reading</td>
<td>18.9&lt;sup&gt;b&lt;/sup&gt;</td>
<td>24.5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>19.8&lt;sup&gt;b&lt;/sup&gt;</td>
<td>20.1&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.79</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>ACT Composite</td>
<td>18.6&lt;sup&gt;c&lt;/sup&gt;</td>
<td>20.8&lt;sup&gt;a&lt;/sup&gt;</td>
<td>19.3&lt;sup&gt;bc&lt;/sup&gt;</td>
<td>20.1&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>0.57</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

<sup>abc</sup> Superscripts indicate mean differences across the row (p<0.01)
4.7 SUMMARY

The A.S.P.I.R.E. Program’s goal is to improve North Carolina rural high school students, from ag-intensive, socioeconomically distressed counties, ACT college entrance examination scores in order to assist them in gaining acceptance to pursue a higher education in agricultural and life science degree programs. A.S.P.I.R.E. Round Two participants improved their ACT composite score by 1.5** points on average from the beginning to the conclusion of the A.S.P.I.R.E. course. This data indicates that A.S.P.I.R.E. was successful in improving participants’ composite ACT scores. With the continuation of the program, students should continue to improve their ACT scores and thus enhance their chances of post-secondary degree attainment.
4.8 REFERENCES


APPENDICES
Appendix A – A.S.P.I.R.E. Funding Sources

Golden Leaf Foundation

N.C. Rural Economic Development Center, Inc.

North Carolina Poultry Federation

North Carolina Pork Council

North Carolina State Grange

Ag Carolina Farm Credit

Carolina Farm Credit

Cape Fear Farm Credit
Appendix B – A.S.P.I.R.E. Recruitment Activities


March 19, 2012: A.S.P.I.R.E. Parent Night held at the Robeson County Extension Office for parents and youth to learn more about the program occurring during summer 2012.

April 9, 2012: Parent Night/Info Meeting for Sampson County parents, teachers, and students regarding A.S.P.I.R.E. was held at the Sampson County Cooperative Extension Office.


April 12, 2012: South Johnston High School student recruitment visit for a summer A.S.P.I.R.E. course in Johnston County.

April 25, 2012: Meeting at John A. Holmes High School in Chowan County to talk about A.S.P.I.R.E. with students, teachers, and administrators.

May 9, 2012: All high school juniors at Alexander Central High School listened to a presentation on the A.S.P.I.R.E. program and the importance of the ACT. This recruitment was for the summer of 2012 course.

May 10, 2012: A.S.P.I.R.E. staff held a parent night at the Alexander County Cooperative Extension Office to discuss with parents and students the ACT and the upcoming A.S.P.I.R.E. summer course in Alexander county.


May 16, 2012: A.S.P.I.R.E. staff met with Hertford county schools to discuss the possibility of a summer course for the Hertford county A.S.P.I.R.E.

May 17, 2012: All students attending Anson New Tech High School were able to listen to a powerpoint presentation about A.S.P.I.R.E. Student within Anson County were informed that they could participate in A.S.P.I.R.E. courses within Union county.

May 17, 2012: A.S.P.I.R.E. staff were able to talk with students from Sampson county schools about a possible A.S.P.I.R.E. course in Sampson County.
May 22, 2012: Union County student recruitment included presentations to high school juniors at Porter Ridge and Weddington High Schools.

May 23, 2012: A.S.P.I.R.E. staff was able to talk to all agriculture students at Davie High School for the summer A.S.P.I.R.E. course in Davie county.


May 24, 2012: For the Northampton A.S.P.I.R.E. course, students at Northampton High School were able to discuss the ACT and A.S.P.I.R.E. with a representative.


June 19-20, 2012: An A.S.P.I.R.E. booth was set up at the North Carolina FFA State Convention and A.S.P.I.R.E. staff were able to talk with FFA members and advisors across North Carolina about the ACT, CALS, and A.S.P.I.R.E.

June 20, 2012: West Central District Activities Day had an A.S.P.I.R.E. representative talk about the course, college, and the ACT.


June 22, 2012: South Central District Activities Day and South East District Activities day had an A.S.P.I.R.E. representative speak about the A.S.P.I.R.E. program, CALS, and the ACT.

July 16, 2012: A.S.P.I.R.E. representatives met with 4H contestants at the North Carolina 4H Poultry Judging competition to talk about CALS, the ACT, and A.S.P.I.R.E.

July 18, 2012: A.S.P.I.R.E. staff meet with A.S.P.I.R.E. 4H Agents at the Annual 4H Congress to discuss the program in each of the counties and brainstorm recruitment opportunities and ideas.


September 15, 2012 A.S.P.I.R.E. staff hosted a booth at the College of Agriculture and Life Sciences Tailgate in order to recruit prospective A.S.P.I.R.E. participants who were engaged in agricultural activities such as the FFA, about how ASPIRE could assist them in preparing for future careers in agriculture.


September 28, 2012: Pasquotank High School and Northeastern High School recruitment for Pasquotank county ASPIRE course.

October 2, 2013: Cherokee County A.S.P.I.R.E. student recruitment was conducted at Andrews, Hiwassee, and Murphy High Schools. Presentation was also given at the Cherokee Early College.

October 4, 2012: Southern Nash, and Rocky Mount High Schools recruitment visits to present to agricultural class students about the A.S.P.I.R.E. program and also set up a booth in the cafeteria. At Rocky Mount High School, there was a presentation to guidance counselors about the course and then set up a booth in the cafeteria for students to come and ask her questions. By presenting to the guidance counselors they began brainstorming which students would most benefit this program.

October 9, 2012: Montgomery County ASPIRE class recruitment was conducted at East and West Montgomery High Schools.

October 10, 2012: Smithfield-Selma High School recruitment for the Johnston county ASPIRE course and presented to 11 different class ranging from English, Science, Agriculture, and Math classes.

October 13, 2012: A.S.P.I.R.E. had a booth at the CALS Open House. This allowed parents and students to ask questions about the ACT Prep class and if it was offered in their county.


October 23, 2012: Wilson County A.S.P.I.R.E. student recruitment was conducted at Goldsboro High School.
October 24, 2012: 10 different classere were spoken to at West Rowan high school. This classes included English, Math, Science, and Agriculture classes.

October 25, 2012: Another recruitment visit for the Rowan county A.S.P.I.R.E. course was schedule for North Rowan High school where sophomores within the school were informed of the program.

October 30, 2012: Student recruitment for Rutherford county was conducted during the lunch period at Chase High School.

October 31, 2012: An A.S.P.I.R.E. booth was set up in the cafteria to speak with students at Salisbury High School about the program in Rowan county.

November 1, 2012: East Rowan High School had A.S.P.I.R.E. set up an informational booth during lunch to talk with students about A.S.P.I.R.E.


November 6, 2012: All Juniors attending Warren New Tech School were presented to concerning the A.S.P.I.R.E. program. Studnets at Warren Early College also had the opportunity to hear a presentation about the A.S.P.I.R.E. program in Warren.


November 15, 2012: An A.S.P.I.R.E. booth was set up at North Pitt High School in the cafeteria to speak with students and teachers regarding the ACT and the A.S.P.I.R.E. program in Pitt county.

November 19, 2012: All juniors and sophomores attending Alexander Central High School assembled in the school’s auditorium to hear a presentation on the ACT and A.S.P.I.R.E. in Alexander County.

November 19, 2012: At Tuscola and Pisgah High Schools students were presented information about A.S.P.I.R.E. in Haywood county.

November 26, 2012: Rutherford County High Schools (Chase, East Rutherford, and RS Central High Schools) and Thomas Jefferson Classical Academy all had A.S.P.I.R.E. recruitment visits for their students to learn about the importance of the ACT and the Rutherford county A.S.P.I.R.E. program.

November 27, 2012: Wilson County High Schools (James Hunt and Beddingfield) had an A.S.P.I.R.E. representative discuss the ACT and the program for Wilson county.
November 28, 2013: Rosewood High School hosted A.S.P.I.R.E. representatives to talk with high school juniors about the importance of the ACT and the A.S.P.I.R.E. program offered within Wayne county.

December 4, 2012: Students at Forest Hills High School were able to learn about the A.S.P.I.R.E. program and the ACT test for the spring of 2013 in Union County.


December 5, 2012: Pitt County Student recruitment was conducted at JH Rose and DH Conly High Schools for the spring A.S.P.I.R.E. course in Pitt county.

December 6, 2012: Person High School hosted A.S.P.I.R.E. staff for an all day event in which students were able to learn about the ACT and also the upcoming A.S.P.I.R.E. program for the spring 2013 in Person County.

December 7, 2012: Wayne County A.S.P.I.R.E. student recruitment was conducted at Rosewood High School and Springs Creek High School.

December 11, 2012: Hertford County Student Recruitment was conducted by A.S.P.I.R.E. staff meeting with classes during the school day and talking about A.S.P.I.R.E.

February 17, 2013: A.S.P.I.R.E. staff had a booth at the Annual CALS Donor Event. Here we were able to talk with past, present, and future funders about what A.S.P.I.R.E. had accomplished and our plans for the future.

April 12, 2012: A.S.P.I.R.E. students from all across North Carolina came to Raleigh, NC for an A.S.P.I.R.E. Spend a Day at State Event. Students were able to tour campus, talk with current professors and students, and sit in on actual college courses.

April 17, 2013: A.S.P.I.R.E. staff traveled to Rowan County for an Information Session for students participating in the summer A.S.P.I.R.E. course within Rowan County.

April 19-20, 2013: A.S.P.I.R.E. held an Informational Meeting for prospective A.S.P.I.R.E. agents on the campus of NC State. Interested agents and teachers were able to learn about the program’s requirements, specifications, and general information about the program.

April 22, 2013: East Rowan High School student recruitment for the summer Rowan A.S.P.I.R.E. course.

April 26, 2013: A.S.P.I.R.E. staff had a meeting with Ag-Carolina to discuss the possibility of the Farm Credit Groups of North Carolina funding A.S.P.I.R.E.

May 13, 2013: Haywood County Student recruitment for the summer A.S.P.I.R.E. course was conducted at Pisgah and Tuscola High Schools.
May 13, 2013: An informational session was held for parents and students at Patton High School for the Burke County A.S.P.I.R.E. course.

May 14, 2013: Juniors at Madison High School listened to A.S.P.I.R.E. staff present on the summer Madison course.

May 14, 2013: An information session was held for parents, students and teachers about the future of A.S.P.I.R.E. in Burke county.

May 15, 2013: Rutherford county A.S.P.I.R.E. student recruitment was conducted at Chase and RS Central High Schools.

May 16, 2013: A.S.P.I.R.E. staff met with Alleghany County Schools Assistant Superintendent and Alleghany High School’s Principal about the A.S.P.I.R.E. program and the possibility of implementing the program in Alleghany county.

May 16, 2013: A parent/student night was held at JC Carson High School for A.S.P.I.R.E. staff to conduct a meeting and present information about A.S.P.I.R.E. for the summer Rowan county A.S.P.I.R.E. course.


May 22, 2013: A.S.P.I.R.E. presented statistics and program information to the North Carolina Poultry Federation and thanked them for their financial contribution to the program.

June 3, 2013: A.S.P.I.R.E. staff met with NC Farm Bureau President, Larry Wooten to discuss the A.S.P.I.R.E. program and its contributions to rural NC.

June 18-19, 2013: A.S.P.I.R.E. booth was set up in the Career Fair at the North Carolina FFA State Convention. FFA members all across North Carolina were able to learn about the ACT, the A.S.P.I.R.E. program, and whether or not their county hosted a class.

July 17, 2013: A.S.P.I.R.E. met with the Principal of the Northeast Regional School of Biotechnology and Agriculture, Hal Davis, about the A.S.P.I.R.E. program and surrounding A.S.P.I.R.E. counties. Also discussed the possibility of having teachers trained from the school to implement the A.S.P.I.R.E. program within the school day.
August 5-7, 2013: A.S.P.I.R.E. Agent Master Trainer Course held at the Princeton Review’s Headquarters in Durham, NC. Three more counties, and six more agents, were added to the total A.S.P.I.R.E. list.

August 20, 2013: Met with Stanly county Assistant Superintendent to discuss the A.S.P.I.R.E. program and the upcoming class offered in Stanly county.

August 22, 2013: A.S.P.I.R.E. booth was set up at Davie High School Open House. Students and parents were able to meet with staff and talk about the ACT and the A.S.P.I.R.E. being offered during the fall of 2013 in Davie county.

August 31, 2013: At the Annual CALS Alumni Tailgate, A.S.P.I.R.E. staff had a booth to talk with alumni, students, funders, and potential funders about the A.S.P.I.R.E. program.

September 10, 2013: A.S.P.I.R.E. staff set up a booth and also talked to parents and students at Hertford County High School’s Open House. Parents and students were able to learn about the fall class taking place in Hertford county.

September 12, 2013: A.S.P.I.R.E. staff spoke with students and parents at Yadkin Academy School regarding the upcoming programs in the surrounding area, which included A.S.P.I.R.E. classes in Rowan, Davie, and Davidson counties.

September 13, 2013: Students from South Davidson, Davidson Early College, and North Davidson were able to hear presentations regarding the A.S.P.I.R.E. program and the upcoming class for Davidson county in the spring of 2014.

October 9, 2013: Person County High School students were met with and presented information to about college, ACT, and the A.S.P.I.R.E. program.

October 11, 2013: ASPIRE staff talked with students at Tuscalo High School about participation in the Haywood county A.S.P.I.R.E. class.

November 8, 2013: Lincoln and Catawba county high school students were presented information to about A.S.P.I.R.E., ACT, and college.

November 14, 2013: Students at Camden High school listened to presentations from A.S.P.I.R.E. staff to learn about the program and how it can improve their ACT score.
Appendix C – A.S.P.I.R.E. County Coverage and Trained Extension Agents and High School Teachers

Alexander – Kathy Bunton and Allison Brown

Ashe – Micah Orfield

Beaufort – Mila Arnold and Heather Scott

Burke – Debbie Stamey and Nikki Costello

Camden – Melissa Sawyer

Catawba – Donna Mull

Cherokee – Shannon Coleman, Lance Bristol, and James Vaught

Chowan – Beth Stanly

Davidson – Jennifer Brinkley and Paul Piatkowski

Davie – Lyndsie Young and Jami Lawhom

Haywood – Tim Mathews

Y6.Hertford – Wendy Drake Burgess

Johnston – Lori McBryde

Lincoln – April Dillon and Kristi Johnsen

Madison – Eve Kindley

Mitchell – Jeff Vance and Robbie Potter

Montgomery – Jamie Warner

Northampton – Caroline Brown

Pasquotank – Mason Lawrence

Person – Barbara King and David Hardt
Pitt – Patricia Cahoon
Robeson – Shea Ann DeJarnette
Rowan – Sara Drake
Rutherford – Cynthia Robbins
Sampson – Amanda Bradshaw
Stanly – Ashley Smith
Stokes – Randy Fulk and Matthew Barber
Union – Laura Byrd and Richard Goforth
Warren – Erin Bain
Wayne – Wallace Simmons
Wilkes – Natasha Evans and Donna Millsaps
Wilson – Vanessa Spirion
Appendix D – A.S.P.I.R.E. Syllabus Example

ASPIRE ACT Syllabus
30 hours (20 1.5-hour classes)
Math/Science and Reading/Writing
(Note: Whoever teaches the last course before a diagnostic test will need to go over pacing and strategies, and whoever teaches when the score reports come back will need to plan to go over those with students.)

Class 1 - Math/Science
- General Intro (p. 1-8) 25 min
- Math Intro (p.139-143) 15 min
- No More Algebra (p. 145-152): Remember that in this chapter, you really want to sell the Plugging In strategy. You’ll have plenty of chances to go over math content in future chapters, so just focus on the idea of “look how we can do this without algebra!” in this chapter. Also, if your students are low-scoring, don’t forget to make the POOD point on hard questions. If you don’t have time to finish this chapter, you will be able to do so in Class 3 50 min

Homework 1- (Remind students that they have all the answers. They need to check homework and self-evaluate, so they come back to class next time prepared to ask meaningful questions about homework.)
- Math Practice Test #1 (p. 329-347)- Talk about pacing when you assign this. Remind students to keep their target score in mind, and think about how many questions they need to focus on in order to reach that score. Remind them also about Letter of the Day. 25 min
- No More Algebra Practice (p. 153-158)

Class 2- Reading/Writing
- English Intro (p. 9-14) 10 min
- Grammar 101 (p. 39-50): Don’t worry about teaching this in too much detail. You just want to make sure your kids know all the grammar rules; the sentences are really straightforward, so you should be able to move through fairly efficiently. 25 min
- Grammar Drill (p. 51-52) 10 min
- Reading Intro (p.369-372) 10 min
- Reading Fundamentals (p. 373-383) (Do what you can. You’ll finish this in Class 4.) 35 min
Homework 2- (Remind students that they have all the answers. They need to check homework and self-evaluate, so they come back to class next time prepared to ask meaningful questions about homework.)
  • English Practice Test #1 (p. 108-121)
  • Reading Practice (p. 387-391)

Class 3- Math/Science
  • Review HW 20 min
  • Finish No More Algebra (if needed) 10 min
  • No More Algebra Drill (p.150-151) 20 min
  • Science Intro (p.453-456) 15 min
  • Science Basics (p. 457-463) (Do as much as you can. You’ll finish in Class 5) 25 min

Homework 3
  • Science Basics Practice (p. 467-479)

Class 4- Reading/Writing
  • Review HW 20 min
  • Finish Reading Fundamentals (p. 373-383) 30 min
  • Reading Drill (p. 384-385) 20 min
  • Begin Complete (p. 15-25) 20 min

Homework 4
  • Reading Practice Test #1 (p. 434-442)- Again, be sure to discuss pacing and passage selection when you assign this.
  • Complete Practice (p. 29-37)
  • Writing Preview (p. 553)

Class 5- Math/Science
  • Review HW 20 min
  • Finish Science Basics (p. 457-463) 25 min
  • Science Basics Drill (p. 464-465) 15 min
  • Fundamentals 101 (p. 159-171) 30 min

Homework 5
  • Science Practice Test #1 (p. 523-536)
Class 6 - Reading/Writing
- Review HW 20 min
- Finish Complete (p. 15-25) 55 min
- Complete Drill (p. 26-27) 15 min

Homework 6
- English Practice Test #2 (p.123-143)

Class 7 - Math/Science
- Review HW 20 min
- Fundamentals (p. 173-181) 50 min
- Fundamentals Drill (p. 182-183) 20 min

Homework 7
- Fundamentals Practice (p. 185-195)

Class 8 - Reading/Writing
- Review HW 15 min
- Work the Questions (p. 393-401) 55 min
- Work the Questions drill (p. 402-403) 20 min

Homework 8
- Work the Questions Practice (p.405-409)

Class 9 - Math-Science
- Review HW 20 min
- Plane Geometry 101 (p.197-206)- There is a lot of really useful information in this chapter. Remember that you need to write on the board what you want your kids to write in their books, so be sure to put all the formulas and info on the board as you go over it. Have the kids give you the information, not the other way around. The more involved they are, the more helpful this chapter will be.
- Note- you do not need to teach pages 207-212, but your students do need to know that information.

Homework 9
- Math Practice Test #2 (p. 350-368)
Class 10- Reading/Writing
- Review HW 10 min
- Writing (p.573) 50 min
- Writing Drill: Writing assignment in 1296, page 63. Brainstorm as a group and make an outline of an essay. 30 min

Homework 10
- Writing Practice (p.583)

Class 11- Math/Science
- Review HW 20 min
- Plane Geometry (p.213-221) 70 min

Homework 11
- Geometry Practice (p. 225-234)

Class 12- Reading/Writing
- Reading Drill from 1296 Practice Questions (p.180-187) Have students select which passage they would do first (it may be different for each student). Then give them ten minutes to do it. 15 min
- Consistent, Clear, and Concise (p.57-65) 55 min
- CCC Drill (p.66-67) 20 min

Homework 12
- Reading Practice Test #2 (p. 443-452)
- CCC Practice (p. 69-79) Please note page numbers. Students will do this section in two parts.

Class 13- Math/Science
- Geometry Drill (p. 222-223) 25 min
- Word Problems 101 (p.235-247) 45 min
- Begin Word Problems (p. 249-261)- Skip the hardest problems if students are having trouble with math content. 20 min

Homework 13
- Science Practice Test #2 (p.537-552)
**Class 14- Reading/Writing**
- Review HW 15 min
- Work the Passage (p. 423-427) 20 min
- Work the Passage Drill (p. 430-431) 15 min
- Rhetorical Skills (p.91-97) *(Finish in Class 16 if necessary.)* 40 min

**Homework 14**
- CCC Practice (p. 80-89) *Please note page numbers. Students will do this section in two parts.*
- RS Practice (p. 103-106)

**Class 15- Math/Science**
- Review HW 20 min
- Finish Word Problems (p. 249-261) 30 min
- Fighting Scientists (p. 481-485) 40 min

**Homework 15**
- FS Practice (p. 491-499)
- WP Practice (p. 265-275)
- Coordinate Geometry 101 (p.277-285)

**Class 16- Reading/Writing**
- Review HW 20 min
- RS Drill (p.98-100) 20 min
- English Drill from *1296 ACT Questions*: Test #1, page 6. Give students 18 minutes to work on the first two passages. 25 min
- Reading Drill p. 412-417- Have students work through this in pairs or groups of three. Then come back as a group to discuss any questions they had trouble with. 45 min

**Homework 16**
- *1296 ACT Questions* (p. 74-86)
- *1296 ACT Questions* (p. 180-187)
Class 17 - Math/Science
- Review HW 20 min
- Scary Science (p. 501-509) (If you choose, it’s fine to skip pages 506-507.) 35 min
- Scary Science Drill (p.510-511) 15 min
- Coordinate Geometry (p.287-293) As with the other math chapters, don’t get caught up in the hardest problems. It will be more beneficial for the students to get comfortable working through the easy and medium problems rather than get tangled up in the hard problems that they’ll be skipping anyway.) If you run out of time, finish this next class. 20 min

Homework 17
- 1296 ACT Questions (p.48-62)

Class 18 - Reading/Writing
- Review HW 20 min
- Review from 1296 ACT Questions, Test 2 (p. 292-341) (please note that if time allows, you can do more drill.) 50 min
  - English: Do 18-minute timed drill of first two passages. Discuss answers, and then do another 18-minute drill using the third and fourth passages.
  - Writing: As a class, discuss the prompt on page 327. Brainstorm some examples as a group, and have students write introductory paragraphs on their own. 20 min

Class 19 - Math/Science
- Review HW 20 min
- Finish Coordinate Geometry (p.287-293) if necessary 30 min
- Coordinate Geometry Drill (p.294-295) 20 min
- Review Diag #3 results and talk about plans for the final Diagnostic test. Students have most of the strategies at this point, they should be really comfortable with the pacing plans, and they should be aware of the questions that are and are not in their POOD. Go over all of this with them, looking at specific questions from the diag. 10 min
- Review Math and Science strategies and test plans. Use the summary pages at the end of each chapter to help you sum up the big points. Give ‘em a good pep talk- they’ve just learned everything there is to know about the ACT! 10 min
**Class 20- Reading/Writing**

- Review from *1296 ACT Questions, Test 2* (p. 292-341) (please note that if time allows, you can do more drill.)
  - **Reading:** Discuss as a group picking your order, but let each student pick his own. Give students 35 minutes to complete the section, and go over answers. Students should be focusing on accuracy.  
  
  45 min

- Choose two more drills from English, Reading, or Writing, based on what your students need the most help with.  

  25 min

- Final review- use the summary pages at the end of each chapter to help you sum up the big points.  

  20 min
Appendix E – *A.S.P.I.R.E. Score Analysis Example*

![Score Analysis Example](image)

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### Comprehensive Scores

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c. Concise
d. Conjunctions
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f. Misc. Complete
g. Misc.CCC
h. Order
i. Pronouns
j. Stop/Go
k. Strategy
l. Transitions
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</table>

**Category Keys**

- Advanced Math
- Algebra
- Arithmetic
- Coordinate Geometry
- PITA
- Plane Geometry
- Plugging In
## Top 5 questions missed

<table>
<thead>
<tr>
<th>Question #</th>
<th>Cat</th>
<th>% students who missed</th>
</tr>
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<tbody>
<tr>
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<td>32</td>
<td>a 53.3</td>
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<tr>
<td>2</td>
<td>33</td>
<td>a 53.3</td>
</tr>
<tr>
<td>3</td>
<td>34</td>
<td>a 53.3</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>b 56.7</td>
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<tr>
<td>5</td>
<td>39</td>
<td>b 56.7</td>
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</table>

## Schedule

<table>
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<tbody>
<tr>
<td>Course</td>
<td>CEP-ACT KIT AND TEST GRADING</td>
</tr>
<tr>
<td>Test</td>
<td>ACT Dia B</td>
</tr>
<tr>
<td>Section</td>
<td>Reading</td>
</tr>
<tr>
<td>Teacher</td>
<td>Teacher Teacher 2</td>
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</table>

## Top 5 questions skipped

<table>
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<th>Question #</th>
<th>Cat</th>
<th>% students who skipped</th>
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<tbody>
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<td>1</td>
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<td>2</td>
<td>a 33.3</td>
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<tr>
<td>3</td>
<td>3</td>
<td>a 33.3</td>
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<td>4</td>
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<td>35</td>
<td>b 40.0</td>
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<th>Category</th>
<th>Correct Answer</th>
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<td>+</td>
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<td>J</td>
<td>+</td>
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<tr>
<td>3</td>
<td>A</td>
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<td>---------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Charts &amp; Graphs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Experiments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Fighting Scientists</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix F – A.S.P.I.R.E. Recruitment Talk for Students

ACT Supplemental Preparation in Rural Education
A cooperative initiative between the

NC Agricultural Foundation, Inc.
Designed to bridge deficits in rural high school students’ performance on the ACT College Admissions Entrance Examination.

Rural North Carolina

Of the top 10 livestock and/or crop producing counties in the state of North Carolina, ALL but one county is a RURAL county.

North Carolina State University: 2011 Incoming Freshman Class Admissions Profile
Fall 2012 University Averages:
• Rank: 13.1%
• Un-weighted GPA: 3.65
• Weighted GPA: 4.37
• SAT Critical Reading & Math: 1219
• ACT Composite: 27
2011-2012 Mean SAT/ACT Scores

<table>
<thead>
<tr>
<th>County</th>
<th>SAT (CR +M)</th>
<th>ACT</th>
<th>NCSU Average SAT Score Differential</th>
<th>NCSU Average ACT Score Differential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raleigh Charter High</td>
<td>1264</td>
<td>28</td>
<td>-9</td>
<td>+1</td>
</tr>
<tr>
<td>Chapel Hill-Carrboro</td>
<td>1194</td>
<td>26</td>
<td>-69</td>
<td>-1</td>
</tr>
<tr>
<td>Wake</td>
<td>1063</td>
<td>23</td>
<td>-200</td>
<td>-4</td>
</tr>
<tr>
<td>Top Ten Livestock/Crop Producing Counties</td>
<td>937</td>
<td>20</td>
<td>-326</td>
<td>-7</td>
</tr>
</tbody>
</table>

College Admissions

- GPA (Grade Point Average)
- Personal Statement
- Extracurricular Activities
- Letter(s) of Recommendation
- SAT or ACT College Entrance Examination

A.S.P.I.R.E.
ACT Supplemental Preparation In Rural Education
**ACT Admissions**

How is the score evaluated?

- Easy way for colleges to eliminate applicants.
- The ACT & SAT are used by colleges to make quick decisions: definitely in, definitely out, or maybe.

✔ YES ✗ NO ? MAYBE

---

**ACT vs. SAT**

- **ACT**
  - Is straight forward
  - There is no guessing penalty on the ACT.
  - Score Choice option.
  - Average composite score: 21.1
    - English: 20.5
    - Math: 21.1
    - Reading: 21.3
    - Science: 20.9

- **SAT**
  - Is tricky
  - There is a guessing penalty on the SAT.
  - Score Choice option.
  - Average composite score: 1509
    - Writing: 492
    - Math: 516
    - Reading: 501

---

**Why the ACT Rather than the SAT?**

- North Carolina State Board of Education is proposing that all high school Juniors in the state be required to take the ACT as a part of the accountability model for public schools.
- Expected to happen annually.
- Students will be taking the ACT and it will be paid for by State Board of Education.
- Both the ACT and SAT are currently accepted by UNC System Schools.

---

**ACT Supplemental Preparation in Rural Education**

**aspi**r**e**2

Higher Education
What can this Program do for YOU

• How ASPIRE can help increase score
  – Pilot Program:
    • ACT prep ~ 4 points
    • ACT scale: 36 points

• Cost of program
  – ASPIRE: $65.00
  – Privately: $1,000.00

A.S.P.I.R.E.

• What the program includes
  – Books/ Online Access
    • 1 Study Manual
    • 1,296 Practice Questions
  – 4 Practice Exams & Bubble Sheets
  – Selective College Admissions Booklet
  – 30 hrs Class time

Program Requirements

• $65 for materials
• $100 refundable deposit (based off of class attendance and taking all 4 exams)
• ≥ 3.2 (un-weighted) GPA
• Rising Junior/Senior

Incentives

• Improved score & increased likelihood of admissions
• Money back ($100)
• Gear
What Does College Have to Offer YOU

• College can improve your lifestyle
• High School Graduate (2012): $15,000 - $18,000

Bachelor's of Science Degree
• Agricultural Science (2011): $52,934
• Biological Engineering (2011): $55,197
• Biological Sciences (2011): $47,760
• Extension Education (2011): $36,000
• Horticultural Science (2011): $27,180
• Plant Biology (2011): $47,760
• Zoology (2011): $29,120
• Poultry (2011): $34,324

Monthly Expenses

<table>
<thead>
<tr>
<th></th>
<th>One Adult</th>
<th>One Adult, One Child</th>
<th>Two Adults</th>
<th>Two Adults, Two Children</th>
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<tbody>
<tr>
<td>Food</td>
<td>$223</td>
<td>$253</td>
<td>$451</td>
<td>$471</td>
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<tr>
<td>Child Care</td>
<td>$0</td>
<td>$536</td>
<td>$0</td>
<td>$536</td>
</tr>
<tr>
<td>Medical</td>
<td>$95</td>
<td>$138</td>
<td>$191</td>
<td>$244</td>
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<tr>
<td>Housing</td>
<td>$548</td>
<td>$637</td>
<td>$548</td>
<td>$637</td>
</tr>
<tr>
<td>Transportation</td>
<td>$243</td>
<td>$430</td>
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</tr>
<tr>
<td>Other</td>
<td>$173</td>
<td>$339</td>
<td>$345</td>
<td>$512</td>
</tr>
</tbody>
</table>

Monthly After-Tax Income That’s Required

|                  | $1,282    | $2,494               | $2,002     | $3,214                   |

Annual After-Tax Income That’s Required

|                  | $15,308   | $29,930              | $24,021    | $38,563                  |

Annual Taxes

|                  | $1,413    | $2,655               | $2,236     | $4,487                   |

Annual Before Tax Income That’s Required

|                  | $16,800   | $32,585              | $26,257    | $42,022                  |

Annual Taxes

|                  | $1,413    | $2,655               | $2,236     | $4,487                   |

Occupation – Percent Increase (2008-2018)

• Agricultural Inspectors - 12.8%
• Sales Managers - 14.9%
• Natural Sciences Managers - 15.5%
• Soil and Plant Scientists - 15.5%
• Food Scientists and Technologists - 16.3%
• Environmental Scientists/Specialists - 27.9%
• Environmental Engineers - 30.6%
• Biochemists and Biophysicists - 37.4%
• Veterinarians - 33.0%
What College Has to Offer
YOU

- College can improve your life
  - Provide with new ideas
  - Opens you up to different ideas
  - Diverse Groups
  - Jobs and Internships
  - Study Abroad

North Carolina State University

College of Agriculture and Life Sciences

- Agricultural Business Management
- Agricultural Education
- Agricultural and Environmental Technology
- Agricultural Science
- Animal Science
- Biochemistry
- Biological Engineering
- Bio-processing Science
- Extension Education
- Food Science

- Genetics
- Horticultural Science
- Natural Resources
- Nutrition Science
- Microbiology
- Plant Biology
- Plant and Soil Science
- Poultry Science
- Soil and Land Development
- Turf grass Science
There is More to College Life

"College is all about discovering who you are—and who you want to be. That’s why, at NC State, you’ll find there’s more to college life than just attending class."

• Clubs/Organizations
  – Over 400 clubs/student organizations

• Sports
  – 23 Division 1 Varsity sports
  – 18 Intramural sports
  – 50 Club sports

• Undergraduate Research
  – On campus
    • Labs
    • Animal Units
North Carolina Agricultural and Technical State University

Agriculture and Life Science Degrees Offered at A&T

- Agricultural Economics
- Agricultural Education
- Agricultural Science
- Animal Science
- Animal Industry
- Biology
- Bioengineering
- Chemical Engineering
- Chemistry
- Earth and Environmental Science
- Landscape Architecture
- Family and Consumer Sciences
- Food and Nutritional Sciences
If you are interested in learning more about the ASPIRE program please contact:

Mindy Herman or Rachel Huffman
Prestage Department of Poultry Science
North Carolina State University
Raleigh, NC 27695
mvherman@ncsu.edu
(919) 513-1198
## Appendix G – Example of A.S.P.I.R.E. Schedule

### Ashe County – ASPIRE Class – Fall 2013

Ashe County Extension Office, 134 Government Circle, Suite 202, Jefferson, NC 28640  
Instructor: Micah Orfield  
(336) 846-5850, micah_orfield@ncsu.edu

<table>
<thead>
<tr>
<th>Date</th>
<th>Class #</th>
<th>Time</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday, Sept. 28th</td>
<td>Test 1</td>
<td>8:30 a.m.-12:30 p.m.</td>
<td>Practice Exam 1</td>
</tr>
<tr>
<td>Tuesday, Oct. 1st</td>
<td>1</td>
<td>4-7 p.m.</td>
<td>3</td>
</tr>
<tr>
<td>Tuesday, Oct. 8th</td>
<td>2</td>
<td>4-7 p.m.</td>
<td>6</td>
</tr>
<tr>
<td>Tuesday, Oct. 15th</td>
<td>3</td>
<td>4-7 p.m.</td>
<td>9</td>
</tr>
<tr>
<td>Tuesday, Oct. 22nd</td>
<td>4</td>
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<td>12</td>
</tr>
<tr>
<td>Saturday, Oct. 26th</td>
<td>Test 2</td>
<td>8:30 a.m.-12:30 p.m.</td>
<td>Practice Exam 2</td>
</tr>
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<td>Tuesday, Oct. 29th</td>
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<td>4-7 p.m.</td>
<td>15</td>
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<td>Tuesday, Nov. 5th</td>
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<td>4-7 p.m.</td>
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<td>Thursday, Nov. 7th</td>
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<td>Saturday, November 9th</td>
<td>Test 3</td>
<td>8:30 a.m.-12:30 p.m.</td>
<td>Practice Exam 3</td>
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<td>Tuesday, Nov. 12th</td>
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<td>Tuesday, Nov. 19th</td>
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<td>27</td>
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<td>Tuesday, Nov. 26th</td>
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<td>30</td>
</tr>
<tr>
<td>Saturday, November 30th</td>
<td>Test 4</td>
<td>8:30 a.m.-12:30 p.m.</td>
<td>Final Diagnostic Exam</td>
</tr>
</tbody>
</table>

Official ACT exam: December 14th, 2013  
Registration deadline for this official ACT is November 8th, 2013
Appendix H – Map of A.S.P.I.R.E. Counties in North Carolina
I wanted to THANK YOU for working with Jordan so much during the Aspire Program this summer. Her schedule was probably one of the most craziest you had to work around. She worked hard to complete all the required assignments, and I think she only missed one section there at the end. There is never a dull moment in her life, but she was determined to take advantage of the opportunity that NC State offered to help improve her ACT scores.

When got those last test scores, she was happy to see that all the hard work had paid off... she had improved three points! She couldn't get signed up for the next ACT Test quick enough, and looking forward to using all the tools you gave her to improve her scores for her college applications.

This is the funny part... We had been receiving a lot amount of college information in the mail over the past couple months. It is all very overwhelming! We have visited a couple, but Jordan didn't really know where she wanted to go. After researching what direction she wanted to go... Engineering / 3D Animation, it looks like NC State is her best choice. It is the only NC college that offers 3D Animations. On top of that, she was nominated for The Park Scholarship at Carson last week! They gave her the application information, and she has been busy getting it completed. So she may be a Wolfpack before it's over!

I received my refund check a couple days ago, and was pleasantly surprised that I got that much of a refund! Thank you for your dedication to the Aspire Program, and making it a great success!
Thank you for working with me. I feel this class has helped him be better prepared for the ACT - I truly hope so. So glad we had the opportunity to be a part of it. Again, thanks for all your time & effort you gave them!