

EFFECTS OF AN INNOVATIVE RECRUITMENT WORKSHOP ON SELECTED
TEXAS URBAN HIGH SCHOOL STUDENTS' KNOWLEDGE AND PERCEPTIONS
OF AGRICULTURE

A Thesis

by

LACEE BRIANNE FRAZE

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

August 2008

Major Subject: Agricultural Education

EFFECTS OF AN INNOVATIVE RECRUITMENT WORKSHOP ON SELECTED
TEXAS URBAN HIGH SCHOOL STUDENTS' KNOWLEDGE AND PERCEPTIONS
OF AGRICULTURE

A Thesis

by

LACEE BRIANNE FRAZE

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

Approved by:

Co-Chairs of Committee,	Gary J. Wingenbach
	Tracy A. Rutherford
Committee Member,	Kerry K. Litzenberg
Head of Department,	David W. Reed

August 2008

Major Subject: Agricultural Education

ABSTRACT

Effects of an Innovative Recruitment Workshop on Selected Texas Urban High School Students' Knowledge and Perceptions of Agriculture. (August 2008)

Lacee Brianne Frazee, B. S., Texas Tech University

Co-Chairs of Advisory Committee: Dr. Gary Wingenbach
Dr. Tracy A. Rutherford

The Big City, Big Country Road Show (BC2BC) is a 2.5-year project designed to recruit non-traditional populations, urban and minorities, into post-secondary agricultural science degree programs. Through experiential learning, BC2BC introduces students to various agricultural communications skill sets in an effort to broaden students' views of opportunities in agriculture. This study attempted to measure Texas urban high school students' perceptions of agriculture as a subject, a college major, and a career, before and after participation in the BC2BC program in summer of 2007. The study also looked at students' perceptions of careers attainable with an agricultural degree and students' general agricultural knowledge levels, self-reported and tested. Pre- and post-test mean comparisons revealed positive increases in student perceptions of agriculture and an increase in self-reported agricultural knowledge levels after workshop participation. The results of this study have implications for year two BC2BC workshops and may serve as a potential model for recruitment programs of underrepresented populations into colleges of agriculture.

DEDICATION

I would like to dedicate this degree and thesis to my family. I am eternally grateful for their faith, support, love, and patience as I pursued a master's degree. In particular, this work is dedicated to my mom, Catherine Annette Frazee-Rice, and my dad, Dr. Steven Dee Frazee. Thank you for always reminding me that with God, all things are possible, and that I am capable of anything I put my mind to.

ACKNOWLEDGEMENTS

Several people have impacted my life up to this point and made the completion of my master's degree possible.

To my Dad: You have been my most trusted advisor in my professional life. I have followed your example and inherited your love of agriculture and respect for education. Thank you for your encouragement, love, and protection. As I pursue my own ambitions, I will always take pride in being called Dr. Frazee's daughter.

To my Mom: There are no words to adequately thank you for all the roles you've played in my life. You managed the perfect balance of mother, friend, and confidant. You were ultimately my strength when I had none. I love you and I am eternally grateful.

To my grandparents: I want to thank my grandparents, Charles and Jere Wade for never missing an opportunity to tell me they believe in me and imparting the knowledge of their amazing lives. Grandma Joyce: Thank you for your constant words of encouragement and prayers. While you're no longer with us Pam-pa, I would like to think you were the one that introduced me to agriculture on the farm in New Mexico. Thank you for keeping an eye on things from up above.

To my sister, Tassie: What can I say? I love you, and I wouldn't have survived in Aggieland without your love, support, and late night conversations.

To my friends: Clay, Christy, Brice, Megan, Kate, and Sam. While I know I have not been the most stress-free person over the last two years, I thank-you for your patience and support.

And last, but not least, I would like to thank my committee. Tracy Rutherford, from the day you called me in DC and asked where my graduate school application was, I knew we would have an amazing relationship. You have been my advisor, but more importantly my friend. This thesis would not have come into existence without your support and continual editing. I know that our friendship will not end with this degree and I am very thankful for that. Gary Wingenbach, you have challenged me on a daily basis I am thankful for the faith you put in me to work on your project. I have enjoyed our time together and know that completing my thesis would not have been possible without your help. Thank you. Kerry Litzenberg, I thank you for your patience and understanding as I worked on my thesis. Thank you for your time and valuable input.

NOMENCLATURE

BC2BC	Big City, Big Country Road Show
ISD	Independent School District
SLR	Single Lens Reflex
USDA	United States Department of Agriculture
CSREES	Cooperative State Research, Education, and Extension Service

TABLE OF CONTENTS

	Page
ABSTRACT	iii
DEDICATION.....	iv
ACKNOWLEDGEMENTS	v
NOMENCLATURE	vii
TABLE OF CONTENTS.....	viii
LIST OF TABLES.....	x
LIST OF FIGURES	xi
CHAPTER	
I INTRODUCTION.....	1
Theoretical Framework.....	2
Innovative Recruitment Workshop.....	3
Purpose.....	4
Objectives.....	4
Study Design	4
Population.....	5
Sample.....	5
Instrumentation.....	6
Data Collection.....	6
Data Analysis.....	7
II JOURNAL OF AGRICULTURAL EDUCATION ARTICLE.....	8
Overview	8
Introduction	8
Theoretical Framework.....	9
Purpose of Study.....	10
Methodology.....	10
Results	12
Conclusions and Recommendations	18

CHAPTER	Page
III NATIONAL ASSOCIATION OF COLLEGE TEACHERS IN AGRICULTURE (NACTA) ARTICLE.....	20
Overview	20
Introduction	20
Theoretical Framework	21
Purpose	22
Methods	23
Results	25
Conclusions	27
IV SUMMARY AND CONCLUSIONS.....	29
REFERENCES	31
APPENDIX A	33
APPENDIX B.....	35
VITA	49

LIST OF TABLES

TABLE		Page
1	Cronbach's Alpha Coefficients for Instrument Scales.....	13
2	Students' Attitudes toward Agriculture as a Subject.....	14
3	Students' Attitudes toward Agriculture as a College Major.....	16
4	Students' Attitudes toward Agriculture as a Career.....	17
5	Significant Differences in Students' Pre- and Post-Participation Attitudes toward Agriculture	17
6	Careers Students Perceived as Attainable with a Degree in Agriculture ...	26
7	Students' Perceived Knowledge Levels Compared to Tested Knowledge Levels of Agriculture.....	27

LIST OF FIGURES

FIGURE	Page
1	Illustration of Swanson’s Concept of Cognitive Dissonance..... 2

CHAPTER I

INTRODUCTION

Minority populations are rapidly growing and recruitment of underrepresented groups into postsecondary education is a major objective of colleges and universities throughout the United States. While minority enrollment trends increased slightly in the past decade, these groups still trail non-minorities (Wilds, 2000). This lag contributes to a shortage of college-educated minorities in certain industries, particularly agriculture.

Multiple studies (Newsom-Stewart & Sutphin, 2000; Scott & Laverne 2004; Talbert & Larke, 1995; White, Stewart, & Lindhardt, 1991) have shown minorities have less positive perceptions of agriculture than their non-minority peers. Minority's perceptions of agriculture may discourage them from pursuing college degrees and careers in the agricultural industry. Mullinix, Garcia, Lewis-Lorentz, and Qazi (2006) found positive perceptions of agriculture in a study of Washington Latinos. "Respondents conveyed their full appreciation that higher education was key to the pursuit of and advancement in agriculture careers and they would partake of educational programs were they available, accessible, affordable and did not compromise family relations and obligations" (Mullinix et al., p. 9). While Washington Latinos reported positive perceptions of agriculture, their residency in rural Washington counties may have influenced their perceptions. The question is then asked; do urban populations hold different perceptions of agriculture and agricultural careers than rural populations?

Theoretical Framework

While several studies recommend initiatives to recruit underrepresented populations, research evaluating what effect these initiatives have on minority and/or urban student attitudes toward agriculture is scarce. Wiley and Bowen (1998) studied a summer pre-college workshop for 28 academically talented minority students to test the workshop's effects on minority attitudes towards agriculture. The results indicated that participants held more positive attitudes toward agriculture than non-participants did, and attitudes of participants were stable one year after workshop participation.

Swanson's (1972) concept of cognitive dissonance explains that a person will adjust behavior to represent the information he/she knows and his/her attitudes. Therefore, it is necessary to provide information about a particular topic if the goal is to change current behaviors or attitudes. Figure 1 illustrates the assumed relationship between education, knowledge, attitudes, and behavior (Swanson, 1972).

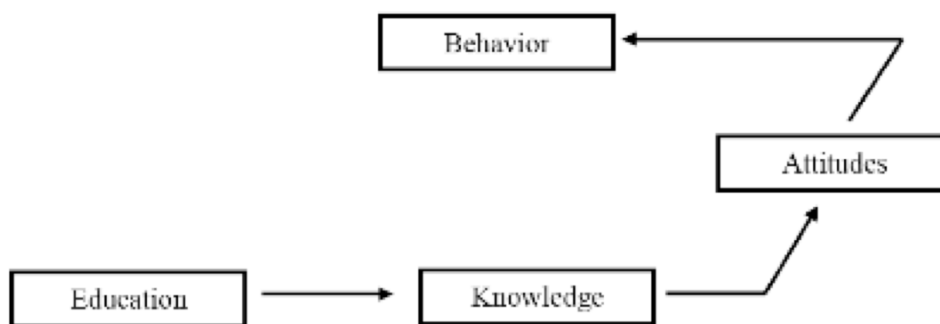


Figure 1. *Illustration of Swanson's Concept of Cognitive Dissonance*

This concept can be utilized in agricultural workshops: if urban high school students are educated about opportunities in agriculture then they gain new knowledge. This new knowledge

may lead to a change in attitudes and perceptions of agriculture, which in turn may cause a change in students' behavior.

For example, based on knowledge gained at a workshop about agriculture, a student may decide that his/her interest in the environment can lead to a career in urban environmental management. The change in knowledge may also change his/her perception of degrees in agriculture leading to his/her enrollment in an environmental science program at the post-secondary level. This is the assumed relationship between education, knowledge, attitudes, and behavior (Swanson, 1972).

Wiley, Bowen, Bowen, and Heinsohn (1997) recommended, "Colleges of agricultural sciences should create pre-college programs for ethnic minority students to deliver the desired knowledge and, if needed, change attitudes toward the food and agricultural sciences" (p. 28).

Innovative Recruitment Workshop

Texas A&M University, in collaboration with Texas Tech University and Howard College, sponsored by funding from USDA-Cooperative State Research, Education, and Extension Service (CSREES), conducted innovative recruitment workshops (BC2BC) in summer of 2007 in San Antonio and Houston, Texas. The workshop was considered innovative because it utilized agricultural communications with lessons in crisis communication, leadership, photography, news writing, video production, and Web design, to broaden student views of opportunities in agriculture rather than traditional agriculture formats, such as livestock exhibits, food demonstrations, and industry speakers. These workshops emphasized the student's relationship with agriculture through the basic necessities of life: clean food, potable water, clothing, and shelter.

The literature review accounts for attitudes and perceptions of students and teachers toward agriculture, and students' perceptions after participation in an agricultural sciences workshop. No research was found that studied the effect of student exposure to agriculture

through agricultural communications, a non-traditional, yet integral section of the agricultural industry.

This study attempted to measure the effect of student participation in an innovative recruitment workshop on their perceptions of agriculture and the agricultural industry.

Purpose

The purpose of this study was to determine if urban high school students' participation in a summer agricultural communications/crisis communications workshop had an effect on their perceptions of agriculture as a subject, as a college major, and/or as a career.

Objectives

The objectives of the research were to

1. Describe students' attitudes toward agriculture as a subject.
2. Describe students' attitudes toward agriculture as a college major.
3. Describe students' attitudes toward agriculture as a career.
4. Determine if significant differences exist in students' pre- and post-participation attitudes toward agriculture.
5. Determine if significant differences exist in students' pre- and post-participation knowledge about agriculture.
6. Identify careers attainable with an agricultural degree as perceived by Texas urban high school students.
7. Determine if significant differences exist in students' pre- and post-participation perceptions of agriculturally related careers.

Study Design

A quasi-experimental, non-equivalent, control-group design was used. The literature validates the design. Campbell and Stanley (1963) defined a quasi-experimental design as an experiment that lacks random assignment of groups. Gall, Gall, and Borg (2007) described a

version of non-equivalent, control-group design where, “it is possible to have all groups receive a treatment, rather than having one group in a no-treatment control condition” (p. 416).

Two groups (Houston and San Antonio) of urban high school students participated in the innovative recruitment workshop in summer 2007. Student participation in the 11-day workshop served as the treatment. This study was approved by Texas A&M University Office of Research Compliance (IRB Protocol Number: 2007-0369).

Population

The population of interest included all urban high school students (grades 9 to 12) in San Antonio and Houston, Texas ($N = 61,084$) who were considered as underrepresented populations (Hispanic and African American) in agriculture as determined by USDA ($n = 55,264$). USDA uses the term, underrepresented populations, to describe the extent to which women, minorities, and persons with disabilities are inadequately represented in a particular grade level job or category as compared to that group’s percentage of the general population (Food and Safety Inspection Service, 2006). Two school districts, Houston Independent School District (59.3% Hispanic; 29.2% African American) and San Antonio Independent School District (87.8% Hispanic; 8.8% African American), were selected because of their high enrollments of Hispanic and African American students.

Sample

Letters of introduction with a general overview of the BC2BC program were sent to 274 administrators, counselors, and teachers. Two teachers from Houston and two from San Antonio were selected to serve as workshop recruiters for their individual schools. Selected teachers were core-curriculum instructors. Using core-curriculum teachers helped BC2BC program administrators contact students from a broad range of backgrounds and interests. Each teacher received promotional materials to generate interest among students in their core-curriculum classes. Students identified by their teachers completed an online application. Twenty-five

students from each city were selected, based on review of their applications by BC2BC program administrators. Student selection criteria included grade level and interest in the BC2BC program. Selected students were notified by mail. BC2BC program administrators provided students and teacher-recruiters with a tentative schedule and requirements for participation in the 11-day crises communication/agricultural communications workshop.

This recruitment process produced an accessible population ($N = 83$), from which a purposive sample ($n = 50$) was derived. The small size of this purposive sample is recognized as a limitation of the study. Caution is advised in generalizing these results to other populations beyond the sample.

Instrumentation

The researcher-developed instrument was an adaptation of Mitchell's (1993) instrument measuring Ohio State University minority students' knowledge, perceptions, and career aspirations related to agriculture. Texas A&M University and Texas Tech University faculty members participating in the BC2BC program reviewed the instrument for face and content validity.

Data Collection

Data were collected through an online application process and two questionnaires. A pre-test was administered in person during an orientation meeting in each city held prior to students completing the online instructional modules, which was six days before the face-to-face workshops. A post-test questionnaire, identical to the pre-test questionnaire, was administered in person at the conclusion of the workshop. Eleven days passed between pre- and post-test administrations.

Of the 50 students selected, 21 did not complete the BC2BC program, resulting in experimental mortality. Gall, Gall, and Borg (2007) define experimental mortality or as losing research participants during an experiment because participants dropped out, missed pre- or

post-testing, or were absent from one or more sessions (p. 386). The final sample was $n = 29$, which yielded a response rate of 58%.

Data Analysis

Data were analyzed using descriptive statistics (frequencies, percentages, means, modes, medians, standard deviations). Paired sample t -tests and non-parametric tests were used to determine significant differences in the variables of interest between students' pre- and post-workshop participation. Confidence intervals were set *a priori* at $\alpha = .05$.

CHAPTER II

JOURNAL OF AGRICULTURAL EDUCATION ARTICLE

Overview

The Big City, Big Country Road Show (BC2BC) is a 2.5-year, USDA-CSREES funded, research project intended to recruit non-traditional populations, urban and minorities, into post-secondary agricultural science degree programs. Through experiential learning, BC2BC introduces students to various agricultural communications skill sets in an effort to broaden students' views of opportunities in agriculture. This study attempted to measure Texas urban high school students' perceptions of agriculture as a subject, a college major, and a career, before and after participation in the BC2BC program in summer of 2007. Pre-and post-test mean comparisons revealed positive increases in student perceptions of agriculture after workshop participation.

Introduction

America's demographics are changing rapidly. The U.S Census Bureau predicts that the Latino population, currently the largest minority group in the U.S., will triple in size by 2050, composing 29% of the American population (Passel & Cohn, 2008). Yet, Hispanic/Latinos and African-Americans collectively represent only 10.2% of the USDA's workforce (U.S. Department of Agriculture, 2007), and represent less than 10% of total undergraduates enrolled in a four-year, agricultural or related sciences degree program in Fall 2006 (Food and Agricultural Education Information System, 2007). The growth of these minority groups is not reflected in the agricultural industry or in agricultural education at the post-secondary level. In order to promote diversity, colleges of agriculture must identify minority perceptions of agriculture and implement innovative recruitment strategies.

Texas A&M University, in collaboration with Texas Tech University and Howard College, sponsored by funding from USDA-Cooperative State Research, Education, and

Extension Service (CSREES), conducted innovative recruitment workshops in summer of 2007 in San Antonio and Houston, Texas. The workshop was considered innovative because it utilized agricultural communications with lessons in crisis communication, leadership, photography, writing, video production, and Web design, to broaden student views of opportunities in agriculture rather than traditional agricultural formats, such as livestock exhibits, food demonstrations, and industry speakers. These workshops emphasized the student's relationship with agriculture through the basic necessities of life: clean food, potable water, clothing, and shelter.

Theoretical Framework

While several studies recommend initiatives to recruit underrepresented populations, research testing what effect these initiatives have on minority student attitudes toward agriculture is scarce. Williams and Torres (2001) found that many students who major in agriculture have previous experience with agriculture, but in order to increase agricultural college enrollment, colleges must target students without agricultural experience and increase their agricultural literacy and awareness of career opportunities within the industry (p. 54).

Literacy and awareness are educational methods perceived to affect changes in behavior. Swanson's (1972) concept of cognitive dissonance explains that a person will adjust behavior to represent the information he/she knows and his/her attitudes. Therefore, it is necessary to provide information about a particular topic if the goal is to change current behaviors or attitudes. This concept can be utilized in agricultural workshops: if urban high school students are educated about opportunities in agriculture then they gain new knowledge. This new knowledge may lead to a change in attitudes and perceptions of agriculture, which in turn may cause a change in students' behavior.

For example, based on knowledge gained at a workshop about agriculture, a student may decide that his/her interest in the environment can lead to a career in urban environmental

management. The change in knowledge may also change his/her perception of degrees in agriculture leading to his/her enrollment in an environmental science program at the post-secondary level. This is the assumed relationship between education, knowledge, attitudes, and behavior (Swanson, 1972). Wiley et al. (1997) recommended, "Colleges of agricultural sciences should create pre-college programs for ethnic minority students to deliver the desired knowledge and, if needed, change attitudes toward the food and agricultural sciences" (p. 28).

Purpose of the Study

The purpose of this study was to determine if Texas urban high school students' participation in a summer agricultural communications/crisis communications workshop had an effect on their perceptions of agriculture as a subject, as a college major, and/or as a career.

Objectives

The objectives of the research were to

1. Describe students' attitudes toward agriculture as a subject.
2. Describe students' attitudes toward agriculture as a college major.
3. Describe students' attitudes toward agriculture as a career.
4. Determine if significant differences exist in students' pre- and post-participation attitudes toward agriculture.

Methodology

The population of interest included all urban high school (grades 9 to 12) students in San Antonio and Houston, Texas ($N = 61,084$) who were considered underrepresented populations in agriculture ($N = 55,264$). The underrepresented populations, as defined by USDA, included Hispanics and African Americans. Two school districts, Houston Independent School District (59.3% Hispanic, 29.2% African American) and San Antonio Independent School District (87.8% Hispanic, 8.8% African American), were selected because of the high enrollments of Hispanic and African American students.

Participants were recruited using promotional materials mailed to 274 administrators, counselors, and teachers in Houston I.S.D. and San Antonio I.S.D. Two teachers from each district were selected to serve as workshop recruiters for their individual schools. Selected teachers taught core-curriculum classes such as math, science, history and English; using core-curriculum teachers helped BC2BC program administrators contact students from a broad range of backgrounds and interests.

Students identified by teacher recruiters completed an online application, including demographic and personal information questions. Not having demographic questions on the instrument itself increased the trust of the research participants as described by social exchange theory (Dillman, 1999). Each applicant received a unique code at the time of application. The code identified each student's pre- and post-responses to increase confidentiality.

Twenty-five students from each city were selected, based on review of their applications by BC2BC faculty members. Student selection criteria included grade level and interest in the BC2BC program.

This recruitment process produced an accessible population ($N = 83$), from which a purposive sample ($n = 50$) was derived. Of the 50 students selected, 21 did not complete the BC2BC program, resulting in experimental mortality. Gall, Gall, and Borg (2007) define experimental mortality or as losing research participants during an experiment because participants dropped out, missed pre- or post-testing, or were absent from one or more sessions (p. 386). The final sample was $n = 29$, which yielded a response rate of 58%.

To achieve the four objectives, data were collected with a researcher-developed questionnaire, adapted from Mitchell's (1993) instrument measuring Ohio State University minority students' knowledge, perceptions, and career aspirations related to agriculture. Perceptions of agriculture were measured on three Likert-type, five-point scales. Texas A&M University and Texas Tech University faculty members participating in the BC2BC program

evaluated the instrument for face and content validity. Table 1 reports pre- and post-test scale reliabilities. All scales were found to be reliable with a Cronbach's Alpha above .70.

Table 1

<i>Cronbach's Alpha Coefficients for Instrument Scales</i>		
<i>Scales</i>	<i>Pre-test</i>	<i>Post-test</i>
Attitudes toward Agriculture as a College Major	.84	.81
Attitudes toward Agriculture as a Career	.81	.79
Attitudes toward Agriculture as a Subject	.84	

Each scale contained a series of 15 statements used to identify student perceptions of agriculture as a college major, as a career, or as a subject. Examples of questions include: (a) *I can work in a variety of fields with a degree in agriculture*, (b) *My family would not approve of me having a career in agriculture*, (c) *I have not taken an interest in agriculture because my school does not offer courses in it*. Response choices for the Likert-type scales were *1 = Strongly Disagree*, *2 = Disagree*, *3 = Neither Agree or Disagree*, *4 = Agree*, and *5 = Strongly Agree*.

The instrument was administered twice. A pre-test was administered in person during an orientation meeting in each city, prior to students completing online instructional modules. A post-test questionnaire, identical to the pre-test questionnaire was administered in person at the conclusion of the workshop. Eleven days passed between pre- and post-test administrations.

Data were analyzed using descriptive statistics (frequencies, percentages, means, modes, medians, standard deviations). Paired sample *t*-tests and non-parametric tests were used to determine significant differences in the variables of interest between students' pre- and post-workshop participation. Confidence intervals were set *a priori* at $\alpha = .05$.

Results

The participants included 25 Hispanic Americans, three Black/African-Americans, one Asian American, and one White/Anglo-American. Sixteen participants were female and 14

were male. Based upon grade level at time of workshop participation, the sample consisted of 16 sophomores, 4 juniors, and 10 seniors, with the average age being 15.45. The small size of this purposive sample is recognized as a limitation of the study. Caution is advised in generalizing these results to other populations beyond the sample.

Objective 1

Objective 1 attempted to measure student's perceptions of agriculture as a subject. Table 2 displays means and standard deviations for 15 statements related to perceptions of agriculture as a subject and are arranged in descending order by post-test mean. It was found that students agreed slightly on the importance of agriculture prior to the workshop treatment. This agreement was maintained after the treatment and saw a slight positive increase in agreement with statements (a) everyone, including myself, should learn where his or her food and clothing come from (pre-test $M=3.93$, post-test $M=4.26$), (b) that agriculture has an effect on all industries (pre-test $M=3.69$, post-test $M=4.26$), and (c) studying agriculture is important in order to have a well-rounded education (pre-test $M=3.56$, post-test $M=4.15$). This agrees with Newsome-Stewart and Sutphin (2000) who found that tenth graders agreed agriculture is important to the economy and that agriculture has a relationship with other academic subjects, especially science. After the treatment, there was a positive increase in the mean for students pursuing information pertaining to agriculture. Students also agreed they would like to see more coverage of agriculture in the media. This does not support Wildman and Torres' (2001) study that found print and electronic media on or about agriculture not influential in selecting a major in agriculture.

Table 2

Students' Attitudes toward Agriculture as a Subject (N = 27)

	Pre-test		Post-test	
	<i>M</i> ^a	<i>SD</i>	<i>M</i> ^a	<i>SD</i>
Everyone, including myself, should learn where his or her food and clothing come from.	3.93	.92	4.26	.66
I enjoy learning about agriculture because it has an effect on all industries.	3.69	.84	4.26	.66
Studying agriculture is important in order to have a well-rounded education.	3.56	.85	4.15	.66
I have pursued information pertaining to agriculture	2.93	.87	4.11	.93
I enjoy learning more about agriculture through the media.	3.96	.76	4.07	.78
I feel confident I can contribute to a conversation about agriculture.	3.33	.78	4.07	.73
I would like to see more coverage of agriculture in the media.	3.85	.72	3.96	.76
I enjoy studying subjects related to food production.	3.41	1.01	3.85	.86
I would enjoy participating in an agricultural organization like FFA or 4-H.	3.37	.88	3.59	.97
I have an interest in learning more about livestock.	2.74	.98	3.33	.83
I have not taken an interest in studying agriculture because my school does not offer courses in it.	2.89	1.22	2.81	1.14
I do not have to learn about agriculture to be a success professionally. ^b	2.78	1.01	2.52	1.01
I find learning about agriculture boring because I am not interested in soil science. ^b	2.26	.94	1.93	.92
I find learning about agriculture boring because I am not interested in animal production. ^b	2.41	1.01	1.89	.89
I do not enjoy learning about agriculture because my friends do not find it interesting. ^b	2.00	.92	1.67	.78

Note.

^a All items measured on 5-point Likert-type scale: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree or Disagree*, 4 = *Agree*, and 5 = *Strongly Agree*

^b These statements were reverse coded.

Objective 2

Objective 2 attempted to measure student's perceptions of agriculture as a college major.

Table 3 displays means and standard deviations for 15 statements related to perceptions of agriculture as a college major arranged in descending order by post-test mean. Prior to the treatment, students agreed that parents would approve of the student majoring in agriculture with a mean of 4.22. This supports Mullinix et al. (2006) who found 52% of Latino respondents would encourage their children to work in agriculture and 92% of those that responded yes said they would encourage their children with the proper level of education. Nearly half of the

respondents (44%) defined a baccalaureate as the proper level of education for a career in agriculture.

Pre-test means showed students neither agreed nor disagreed that counselors or parents encouraged them to pursue a degree in agriculture (means of 2.30 and 2.59). Following the treatment, students agreed that teachers encouraged them to pursue a degree in agriculture with a mean of 3.19. Pre-test means also found students had positive perceptions of careers attainable with an agricultural degree prior to the workshop. These means saw a slight positive increase after workshop participation.

Table 3

Students' Attitudes toward Agriculture as a College Major (N = 27)

	Pre-test		Post-test	
	<i>M^a</i>	<i>SD</i>	<i>M^a</i>	<i>SD</i>
I can learn a variety of skills by majoring in agriculture.	4.22	.58	4.67	.48
My parents would approve of me majoring in agriculture.	4.22	.70	4.59	.57
I can work in a variety of fields with a degree in agriculture.	3.96	.65	4.59	.57
There are a variety of majors for me to choose from within a college of agriculture.	3.93	.62	4.48	.70
Majoring in agriculture would be very valuable to my future.	3.59	.93	4.22	.85
A degree in agriculture would allow me to work with biotechnology.	3.59	.69	4.07	.83
I want to major in agriculture because it would be challenging.	3.30	.78	3.78	.97
My friends would consider it worthwhile for me to major in agriculture.	3.04	.90	3.63	.93
I want to major in agriculture because I find it interesting.	2.85	.95	3.48	.64
I want to major in agriculture so I can get a high-paying job.	3.22	1.01	3.48	1.12
Teachers have encouraged me to major in agriculture.	2.59	1.01	3.19	1.24
Counselors have encouraged me to major in agriculture.	2.30	.99	2.74	1.23
I do not want to major in agriculture because I have no interest in farming. ^b	2.70	.78	2.41	1.05
I do not want to major in agriculture because I have no interest in ranching. ^b	2.67	.92	2.33	1.07
Majoring in agriculture will limit the type of careers I can pursue. ^b	2.37	.97	1.93	1.24

Note.

^a All items measured on 5-point Likert-type scale: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree or Disagree*, 4 = *Agree*, and 5 = *Strongly Agree*

^b These statements were reverse coded.

Objective 3

Objective 3 attempted to measure student's perceptions of agriculture as a career. Table 4 displays means and standard deviations for 15 statements related to perceptions of agriculture as a career arranged in descending order by post-test mean. The study found students agreed that working in agriculture allowed them to use the latest technologies. The treatment resulted in a positive increase where students strongly agreed ($M=4.48$) that working in agriculture allowed them to use the latest technologies. Students agreed that they would need a college degree to work in agriculture and would feel comfortable telling people they worked in agriculture.

Table 4

Students' Attitudes toward Agriculture as a Career (N = 27)

	Pre-test		Post-test	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
By working in agriculture, I will be using the latest technologies.	3.89	.64	4.48	.51
A career in agriculture would allow me to advance to higher positions.	3.96	.94	4.44	.64
I would feel comfortable telling people I work in agriculture.	4.15	.67	4.41	.84
In order to work in agriculture, I will need a college degree.	3.67	.96	4.30	.72
An understanding of agriculture would be beneficial in any career.	3.85	.86	4.26	.71
I admire people who work in agriculture.	3.37	.79	3.96	.76
I want a career in agriculture because it will be exciting.	3.30	.78	3.85	.95
I want a career in agriculture so I can make good money.	3.19	.96	3.56	1.05
If I work in agriculture, I would be involved in ranching.	2.93	1.17	3.15	1.17
If I work in agriculture, I would be involved in farming.	2.85	1.03	3.07	1.24
A career in agriculture would be unfulfilling for me. ^b	2.52	.75	2.19	1.04
I do not want to work in agriculture because I find it boring. ^b	2.30	1.10	2.00	1.11
I do not want to work in agriculture because I would get dirty. ^b	2.04	1.09	1.67	.88
A career in agriculture would be a waste of my talents. ^b	1.89	.93	1.44	.70
My family would not approve of me having a career in agriculture. ^b	1.74	1.02	1.27	.53

^a All items measured on 5-point Likert-type scale: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree or Disagree*, 4 = *Agree*, and 5 = *Strongly Agree*

^b These statements were reverse coded.

Significant differences existed between pre- and post-test means on all three subscales as illustrated in Table 5. The largest difference was found in students' perceptions of agriculture as a college major ($t = -6.22$).

Table 5

Significant Differences in Students' Pre- and Post-Participation Attitudes toward Agriculture (N = 27)

Scales	Test	<i>M</i>	<i>SD</i>	<i>t</i>
Attitudes toward Agriculture as a Subject	Pre	52.30	8.13	-5.80*
	Post	58.85	7.91	
Attitudes toward Agriculture as a Career	Pre	53.63	7.33	-3.47*
	Post	57.70	6.74	
Attitudes toward Agriculture as a College Major	Pre	51.07	7.03	-6.22*
	Post	58.26	7.38	

Note.

Conclusions and Recommendations

This study showed that urban students had positive perceptions of agriculture prior to the treatment, and slightly more positive perceptions following the treatment. This supports previous research (Wiley et al., 1997) that reports positive attitudinal gains following a pre-college program.

A positive increase was seen in students' perception of teacher encouragement to pursue agricultural degrees. This may be due to the participation of teacher-recruiters in the BC2BC workshop alongside students. Further research should be conducted to see if participation of core-curriculum teachers in agricultural recruitment workshops increases their ability to influence non-traditional students' perceptions of agriculture. Core curriculum teachers may be an untapped resource for influencing underrepresented student populations.

Students perceived an agricultural career would allow them to use the latest technologies. A positive mean increase was noted in this perception following the workshop. This may be due to the hands-on learning component of the BC2BC workshop, where students used digital SLR cameras, video recorders, digital editing software, and distance technologies, to complete workshop assignments. Including the hands-on activities with technology may broaden students' perceptions of opportunities in agriculture. Further research should examine the relationship of experiential learning and recruitment in other agricultural disciplines.

Minimal difference in pre- and post-test means was noted on statements dealing with 4-H and FFA involvement. Only one workshop participant reported involvement with FFA, 4-H, or Young Farmers, as part of the BC2BC online application. The BC2BC program did not address involvement in student agricultural organizations, but instead, concentrated on post-secondary agricultural programs. While research shows participation in 4-H or FFA is influential in selecting an agricultural major (Wildman & Torres, 2001), high school juniors and seniors may not be influenced by joining these organizations so close to the end of their high school career,

and many urban high schools do not have FFA chapters. Future research that focuses on recruiting urban students with limited agricultural background into post-secondary agricultural science degree programs, may want to eliminate questions dealing with 4-H and FFA.

This research should be continued to measure urban students' perceptions of agriculture in year two of the BC2BC program in summer of 2008. The workshop will be conducted on a national scale with students in El Paso, Texas, Atlanta, Georgia, and Chicago, Illinois. Summer 2007 participants should be compared to summer 2008 participants. If student perceptions of agriculture continue to experience a positive increase, other colleges of agriculture, in order to enhance agricultural literacy and recruit underrepresented populations, may want to utilize the BC2BC innovative recruitment model.

CHAPTER III

NATIONAL ASSOCIATION OF COLLEGE TEACHERS IN AGRICULTURE (NACTA)

ARTICLE

Overview

The Big City, Big Country Road Show (BC2BC) was an innovative recruitment workshop that targeted urban high school students with little to no agricultural background. The workshop was considered innovative because it utilized agricultural communications with lessons in crisis communication, leadership, photography, writing, video production, and Web design, to broaden student views of opportunities in agriculture rather than traditional agricultural formats, such as livestock exhibits, food demonstrations, and industry speakers.

This study attempted to measure the effect of workshop participation on student perceptions of careers attainable with an agricultural degree and student's general agricultural knowledge levels, self reported and tested.

Introduction

The U.S Census Bureau predicts that the Latino population, currently the largest minority group in the U.S., will triple in size by 2050, composing 29% of the American population (Passel & Cohn, 2008). Yet, Hispanic/Latinos and African-Americans collectively represent only 10.2% of the USDA's workforce (U.S. Department of Agriculture, 2007), and represented less than 10% of total undergraduates enrolled in a four-year, agricultural or related sciences degree program in Fall 2006 (Food and Agricultural Education Information System, 2007).

Colleges of agriculture are beginning to focus recruitment efforts toward non-traditional students from urban areas and minority groups, but research shows that the underrepresented groups are not interested in traditional agricultural degrees. White, Stewart, and Lindhardt (1991) found that inner-city high school students related jobs in agriculture with a person having an agricultural background, willingness to work outdoors, and the ability to receive on-the-job

training. In Newsom-Stewart and Sutphin's (2000) study of New York state 10th graders, students said agriculture was most closely related to science. Conroy (2000) reported New York State students were interested in working with computers, teaching, and engineering, but were unlikely to enroll in an agricultural sciences class, because students saw little relationship between these jobs and agriculture (p. 80). Talbert and Larke (1995) recommend "recruitment efforts that emphasize non-traditional agricultural topics such as ecology and urban horticulture" to entice minorities to enroll in colleges of agriculture (p. 43). Colleges of agriculture must develop new models of recruitment that broaden urban and minority students' perceptions of opportunities available with an agricultural degree, if agricultural colleges want a student ratio that more closely resembles the U.S. population.

Theoretical Framework

While several studies recommend initiatives to recruit underrepresented populations, a gap exists in the research that evaluates what effect these initiatives have on minority and/or urban student attitudes toward agriculture. Williams and Torres (2001) found that many students who major in agriculture have previous experience with agriculture, but in order to increase agricultural college enrollment, colleges must target students without agricultural experience and increase their agricultural literacy and awareness of career opportunities within the industry (p. 54).

Literacy and awareness are educational methods perceived to affect changes in behavior. Swanson's (1972) concept of cognitive dissonance explains that a person will adjust behavior to represent the information he/she knows and his/her attitudes. Therefore, it is necessary to provide information about a particular topic if the goal is to change current behaviors or attitudes. This concept can be utilized in agricultural workshops: if urban high school students are educated about opportunities in agriculture then they gain new knowledge. This new knowledge may lead

to a change in attitudes and perceptions of agriculture, which in turn may cause a change in students' behavior.

For example, based on knowledge gained at a workshop about agriculture, a student may decide that his/her interest in the environment can lead to a career in urban environmental management. The change in knowledge may also change his/her perception of degrees in agriculture leading to his/her enrollment in an environmental science program at the post-secondary level. This is the assumed relationship between education, knowledge, attitudes, and behavior (Swanson, 1972). Wiley et al. (1997) recommended, "Colleges of agricultural sciences should create pre-college programs for ethnic minority students to deliver the desired knowledge and, if needed, change attitudes toward the food and agricultural sciences" (p. 28).

Purpose

The purpose of this study was to determine if urban high school students' participation in a summer agricultural communications/crisis communications workshop had an effect on their perceptions of agriculturally related careers, their self-reported agricultural knowledge levels, or tested agricultural knowledge levels.

Objectives

The objectives of the research were to

1. Identify careers attainable with an agricultural degree as perceived by Texas urban high school students.
2. Determine if significant differences exist in students' pre- and post-participation perceptions of agriculturally related careers.
3. Determine if significant differences exist in students' pre- and post-participation knowledge about agriculture.

Methods

Instrument

The researcher–developed instrument was an adaptation of Mitchell’s (1993) instrument measuring Ohio State University minority students’ knowledge, perceptions, and career aspirations related to agriculture. The instrument was reviewed for face and content validity by Texas A&M and Texas Tech University faculty members participating in the BC2BC program.

Students’ agricultural career perceptions and general agricultural knowledge were measured in sections one and five of the five–section instrument. Section one contained two questions. Question one asked students to identify careers they perceived as attainable with an agricultural degree. The list of careers was adapted from Mitchell’s (1993) instrument. Question two asked students to gauge their agricultural knowledge level as one of the following: (a) *I am more knowledgeable than my friends*, (b) *I am less knowledgeable than my friends*, or (c) *I am equally as knowledgeable as my friends*.

Section five consisted of ten multiple–choice questions to measure student’s general agricultural knowledge. Questions were loosely based on the Ag–knowledge section of the USDA’s Agriculture in the Classroom Web site.

The instrument was administered twice. A pre–test was administered in person during an orientation meeting in each city, prior to students completing online instructional modules. A post–test questionnaire, identical to the pre–test questionnaire was administered in person at the conclusion of the workshop. Eleven days passed between pre– and post–test administrations.

Data were analyzed using descriptive statistics (frequencies, percentages, means, modes, medians, standard deviations). Paired sample *t*-tests and non-parametric tests were used to determine significant differences in the variables of interest between students’ pre- and post-workshop participation. Confidence intervals were set *a priori* at $\alpha = .05$.

Population

The population of interest included all urban high school students (grades 9 to 12) in San Antonio and Houston, Texas ($N = 61,084$) who were considered as underrepresented populations (Hispanic and African American) in agriculture as determined by USDA ($n = 55,264$). USDA uses the term, underrepresented populations, to describe the extent to which women, minorities, and persons with disabilities inadequately represented in a particular grade level job or category as compared to that group's percentage of the general population. Two school districts, Houston Independent School District (59.3% Hispanic; 29.2% African American) and San Antonio Independent School District (87.8% Hispanic; 8.8% African American), were selected because of their high enrollments of Hispanic and African American students.

Sample

Letters of introduction with a general overview of the BC2BC program were sent to 274 administrators, counselors, and teachers. Two teachers from Houston and two from San Antonio were selected to serve as workshop recruiters for their individual schools. Selected teachers were core-curriculum instructors, such as science, math, history, or English, using core-curriculum teachers helped BC2BC program administrators contact students from a broad range of backgrounds and interests. Each teacher received promotional materials to generate interest among students in their core-curriculum classes. Students identified by their teachers completed an online application. Twenty-five students from each city were selected, based on review of their applications by BC2BC faculty members. Student selection criteria included grade level and interest in the BC2BC program. Selected students and teacher recruiters participated in the 11-day agricultural communications/crisis communications workshop.

This recruitment process produced an accessible population ($N = 83$), from which a purposive sample ($n = 50$) was derived.

Results

The participants included 25 Hispanic Americans, three Black/African-Americans, one Asian American, and one White/Anglo-American. Sixteen participants were female and 14 were male. Based upon grade level at time of workshop participation, the sample consisted of 16 sophomores, 4 juniors, and 10 seniors, with the average age being 15.45. The small size of this purposive sample is recognized as a limitation of the study. Caution is advised in generalizing these results to other populations beyond the sample.

Objectives 1 and 2

Objectives 1 and 2 attempted to identify careers attainable with an agricultural degree as perceived by Texas urban high school students, and differences in students' pre- and post-test perceptions of attainable careers. Table 6 reports careers students perceived as attainable before and after participation in the BC2BC workshop. All career choices listed were chosen as attainable by a minimum of eight students in both the pre- and post-test. After workshop participation, significant increases occurred in the number of students who viewed loan officer, account representative, public relations officer, and media personality as attainable careers with a degree in agriculture, with the largest increase being public relations officer.

Table 6

Careers Students Perceived as Attainable with a Degree in Agriculture (N=27)

	Pre-test		Post-test		<i>p</i>
	<i>f</i>	%	<i>f</i>	%	
Media Personality	18	66.7	24	88.9	.03*
Landscaper	20	74.1	23	85.2	.08
Photographer	19	70.4	23	85.2	.16
Rancher	21	77.8	23	85.2	.32
Newspaper Journalist	19	70.4	22	81.5	.18
Zoo Director	18	66.7	22	81.5	.10
Farmer	19	70.4	21	77.8	.41
Web Designer	17	63.0	21	77.8	.10
Engineer	18	66.7	21	77.8	.37
Public Relations Officer	12	44.4	20	74.1	.01*
Teacher	15	55.6	19	70.4	.10
Chemist	18	66.7	18	66.7	1.00
Account Representative	11	40.7	17	63.0	.03*
Government Official	12	44.4	17	63.0	.10
Loan Officer	8	29.6	15	55.6	.02*

Note. Frequencies will total more than 27 because students were allowed multiple responses.

Objective 3

Objective 3 attempted to determine if significant differences exist in students' pre- and post-participation knowledge about agriculture. Table 7 shows students pre- and post-test perceived knowledge levels in comparison to their pre- and post-test tested knowledge levels. Students' tested knowledge levels, which were measured with ten multiple-choice general agricultural knowledge questions, remained consistent with all students getting at least seven out of 10 questions correct on both pre- and post-tests. While tested knowledge remained unchanged, following the treatment, all students perceived themselves as equally knowledgeable or more knowledgeable than their peers. This is in contrast to previous research, where objective knowledge increased as perceived knowledge increased (Knight, 2005) or that people often overestimate their knowledge in an area prior to completing an activity or test in that area.

Table 7

Students' Perceived Knowledge Levels Compared to Tested Knowledge levels of Agriculture (N = 27)

		Pre-test		Post-test	
		<i>f</i>	%	<i>f</i>	%
Perceived Knowledge	Less knowledge than my peers	5	18.5	—	—
	Same knowledge as my peers	22	81.5	9	33.3
	More knowledge than my peers	—	—	18	66.7
Tested Knowledge	Correctly answered 7-9 Questions	16	59.3	16	59.3
	Correctly answered 10 Questions	11	40.7	11	40.7
<i>Note.</i>					

Conclusions

Participation in the BC2BC workshop increased the number of careers Texas urban high school students perceived as attainable with an agricultural degree. Slightly significant increases were observed in the post–test frequency of students who perceived loan officer, account representative, public relations officer, and media personality as attainable careers with a degree in agriculture. As part of the BC2BC workshop, students went on media tours of local news, television, and radio stations. Students listened to different industry professionals discuss their agricultural careers in urban areas. This may have broadened student perceptions of agricultural careers.

While tested knowledge levels remained unchanged, students self-reported knowledge levels increased at the post–test administration. These findings are in opposition to previous research. Future studies should examine which is more influential in recruitment models: students' tested agricultural knowledge or their self-reported knowledge levels? This research underestimated the general agricultural knowledge of Texas urban high school students and recommends more thorough testing of agricultural knowledge including questions regarding current events, agricultural economics, biotechnology, and other disciplines to get a more accurate depiction of students' agricultural literacy levels.

This research should be continued to measure urban students' perceptions of agriculture careers and students' agricultural knowledge in year two of the BC2BC program in summer of 2008. The workshop will be conducted on a national scale with students in El Paso, Texas, Atlanta, Georgia, and Chicago, Illinois. Summer 2007 participants should be compared to summer 2008 participants. If 2008 participants' perceptions of agriculture careers and participants' self-reported agricultural knowledge, are equivalent or higher than 2007 participants, other colleges of agriculture, in order to enhance agricultural literacy and recruit underrepresented populations, may want to utilize the BC2BC innovative recruitment model.

CHAPTER IV

SUMMARY AND CONCLUSIONS

This study found that Texas urban high school students had positive perceptions of agriculture prior to the treatment, and slightly more positive perceptions following the treatment. The BC2BC workshop influenced the positive increases in Texas urban high school students' perception of agriculture as a subject, college major, and career. This supports previous research (Wiley et al., 1997) that reports positive attitudinal gains following a pre-college program. The workshop also led to an increase in students' perceived knowledge levels in comparison to their peers.

A slight positive increase occurred in students' perception of teacher encouragement to pursue agricultural degrees. This may be due to the participation of teacher-recruiters in the BC2BC workshop alongside students. Further research should be conducted to see if participation of core-curriculum teachers in agricultural recruitment workshops increases their ability to influence non-traditional students' perceptions of agriculture. Core curriculum teachers may be an untapped resource for influencing underrepresented student populations.

Students perceived an agricultural career would allow them to use the latest technologies. A positive mean increase was noted in this perception following the workshop. This may be due to the hands-on learning component of the BC2BC workshop, where students used digital SLR cameras, video recorders, digital editing software, and distance technologies, to complete workshop assignments. Including the hands-on activities with technology may broaden students' perceptions of opportunities in agriculture. Further research should examine the relationship of experiential learning and recruitment in other agricultural disciplines.

Minimal difference in pre- and post-test means was noted on statements dealing with 4-H and FFA involvement. Only one workshop participant reported involvement with FFA, 4-H, or Young Farmers, as part of the BC2BC online application. The BC2BC program did not address

involvement in student agricultural organizations, but instead, concentrated on post-secondary agricultural programs. While research shows participation in 4-H or FFA is influential in selecting an agricultural major (Wildman & Torres, 2001), high school juniors and seniors may not be influenced by joining these organizations so close to the end of their high school career, and many urban high schools do not have FFA chapters. Future research that focuses on recruiting urban students with limited agricultural background into post-secondary agricultural science degree programs, may want to eliminate questions dealing with 4-H and FFA.

This research should be continued to measure urban students' perceptions of agriculture in year two of the BC2BC program in summer of 2008. The workshop will be conducted on a national scale with students in El Paso, Texas, Atlanta, Georgia, and Chicago, Illinois. Summer 2007 participants should be compared to summer 2008 participants. If student perceptions of agriculture continue to experience a positive increase, other colleges of agriculture, in order to enhance agricultural literacy and recruit underrepresented populations, may want to utilize the BC2BC innovative recruitment model.

REFERENCES

- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally.
- Conroy, C. A. (2000). Reinventing career education and recruitment in agricultural education for the 21st century. *Journal of Agricultural Education*, 41(4), 73-84.
- Dillman, D. A. (1999). *Mail and Internet Surveys: The Tailored Design Method*. (2nd ed.). New York: John Wiley & Sons.
- Food and Agricultural Education Information System. (2007, July 21) Baccalaureate degree programs in agriculture, agriculture operations, and related sciences at all institutions. FAEIS Reports: Virginia Tech. Retrieved on June 10, 2008 from http://faeis.ahnrit.vt.edu/reports/reports2005_2006/enrollment/enroll_ag/enroll_ag_all_bacc.html
- Food Safety and Inspection Service. (2006, March). Civil Rights Glossary. About FSIS. Retrieved on June 5, 2008 from http://www.fsis.usda.gov/About_FSIS/Civil_Rights_Glossary/index.asp#U
- Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational research: An introduction* (8th ed.). Boston: Pearson Education, Inc.
- Knight, A.J. (2005). Differential effects of perceived and objective knowledge measures on perceptions of biotechnology. *The Journal of Agrobiotechnology Management and Economics*, 8(4), 221-227.
- Mitchell, G. D. (1993). Factors related to minority student enrollment and retention in the College of Agriculture and School of Natural Resources at the Ohio State University. Dissertations Abstracts International. (UMI No. 9401322)
- Mullinix, K., Garcia, A., Lewis-Lorentz, A., & Qazi, J. (2006). Latino views of agriculture, careers and education: Dispelling the myths. *NACTA Journal*, 50(2), 2-11
- Newsom-Stewart, M., & Sutphin, H. D. (2000). How tenth grade students perceive agriculture and environmental science: Comparison by gender and ethnicity. *Journal of Agricultural Education*, 35(3), 50-56.
- Passel, J. S., & Cohn, V. (2008). *U.S. population projections: 2005-2050*. Pew Research Center: Social & Demographic Trends and the Pew Hispanic Center.
- Swanson, J. C. (1972). Second thoughts on knowledge and attitude effects upon behavior. *The Journal of School Health*, XLII (6), 363-365.
- Scott, F. L., & Lavergne, D. (2004). Perceptions of agricultural students regarding the image of agriculture and barriers to enrolling in agricultural education class. *Journal of Southern Agricultural Education Research* 54(1), 48-59.

- Talbert, B. A., & Larke, Jr., A. (1995). Factors influencing minority and non-minority students to enroll in an introductory agriscience course in Texas. *Journal of Agricultural Education*, 36 (1), 38-45.
- U.S. Department of Agriculture. (2007). *2007 Annual Employee Survey Results*. Retrieved on May 27, 2008 from <http://www.usda.gov/da/employ/2007AES.pdf>
- White, C., Stewart, B. R., & Lindhardt, R. E. (1991). Career opportunities in agriculture as perceived by inner-city high school students. *Journal of Agricultural Education*, 34(4), 55-63.
- Wildman, M., & Torres, R. M. (2001). Factors identified when selecting a major in agriculture. *Journal of Agricultural Education*, 42 (2), 46-55.
- Wilds, D. J. (2000). *Minorities in higher education, 1999-2000* (Seventeenth annual status report). Washington, DC: American Council on Education: Office of Minorities in Higher Education. (ERIC Document Reproduction Service No. 457 768).
- Wiley, Z. Z., & Bowen, C. F. (1998). Knowledge, attitude, and behavior of minority participants in a summer pre-college workshop. *NACTA Journal*, 42(June), 22-26.
- Wiley, Z. Z., Bowen, B. E., Bowen, C. F., & Heinsohn, A. L. (1997) Attitude formulation of ethnic minority students toward the food and agriculture sciences. *Journal of Agriculture Education*, 38(2), 21-29.

APPENDIX A

Appendix A is the researcher developed instrument used for data collection. It has been submitted to the Thesis office as a separate PDF file.

APPENDIX B



Texas A&M University
TAMU 2116
College Station, TX
77843-2116

Texas Tech University
Box 42131
Lubbock, TX
79409-2131

Howard Community College
1001 Birdswell Ln.
Big Spring, TX
79720

Date

<Title> <First_Name> <Last_Name>
<ISD> Independent School District
<School>
<Address>
<City> TX <Zip>

Dear <Title> <Last_Name>:

Faculty at Texas A&M and Texas Tech Universities and Howard College are excited about the **“Big City, Big Country Road Show,”** a recruitment program for non-traditional and underrepresented students in agricultural science careers. Through a two-week summer workshop in the El Paso area, project staff and students will present student-centered, team-oriented, problem-solving situations based on real-world experiences. Our real-world context focuses on the media’s portrayal of life’s necessities (our daily needs of water, food, clothing, and shelter) during times of national crises. Most Americans do not think about life’s necessities until storms and health news stories (Mad Cow, Avian Influenza, etc.) affect us directly.

We seek the assistance of one mathematics teacher and one science teacher from Andress High School to help us recruit 25-30 junior-senior students for a summer 2008 workshop. Student teams will meet with local radio, television, newspaper, and Internet media professionals to experience real-world mass media career settings. A documentary film for national distribution through the Public Broadcasting Service may be produced to publicize and disseminate this innovative project. The film illustrates student collaboration on creating clear, unbiased communications during times of national crises. Will you help us identify one math and one science teacher for this recruitment program?

Before describing the El Paso area teachers’ program responsibilities and benefits, we offer these insights into agricultural science careers. Non-traditional and underrepresented students are reluctant to enter agriculture-based careers; partly because of misconceptions about the industry (all agriculture jobs are farm-based, production-oriented, menial, and low-paying). What do inner-city high school students truly know about the agricultural industry? We will help students broaden their perspectives about agricultural careers by showing the connections between agriculture and education, communications, health, economics, and entertainment.

Two El Paso area teachers participating in this program will receive one digital camera each and one digital camcorder for their schools (~ \$1,666/school), plus a stipend of \$1000/teacher for recruiting students for the summer workshop and for helping with workshop facilitation. Additional support for the purchase of digital cameras for each student is being sought from industry sources.

An example of the two-week workshop includes

- Week one: Big City, Big Country Road Show includes intensive instruction on news writing, digital photography and video, crises communication strategies, and Web site design. Example topics include
 - Fundamental truths about crises management
 - Basic questions to ask before or during a crisis
 - Proactive versus reactive crises communications plans
 - Print media writing, layout, and production skills
 - Basic digital photography and video capture and editing processes
 - Basic Web site design, production, and marketing
- Week two: Big City, Big Country Road Show includes student-centered, team-oriented, problem-solving, decision-making situations in the context of real-world experiences. Instructional objectives are to
 - Develop crises communications plans based on simulated agricultural scenarios (US-centered outbreaks of Mad Cow, Avian Influenza, etc.)
 - Meet media professionals for mentoring and/or networking opportunities
 - Produce newspaper, radio, television, and Internet media
 - Capture digital photos and video to augment communications media

Please contact us at your earliest convenience with the names of teachers who would be interested and willing to participate in this unique recruitment program. Only two teachers will be chosen from the inner-city El Paso area, but those teachers might be teaching at Andress High School right now. You may contact us by telephone or preferably by e-mail.

Sincerely,



Gary J. Wingenbach
Texas A&M University
(979) 862-1507
g-wingenbach@tamu.edu



Cindy Akers
Texas Tech University
(806) 742-2816
cindy.akers@ttu.edu



Cash R. Berry
Howard Community College
(432) 264-5110
cberry@howardcollege.edu

Big City, Big Country Road Show BC2BC

November 14, 2006

<Title> <First_Name> <Last_Name>
 <Sponsor_Name>
 <Address>
 <City> TX <Zip>

Dear <Title> <Last_Name>:

Agriculture has always been an important part of our nation's heritage. However, the agriculture industry is forever changing, as food sciences research and development has grown rapidly. Employment opportunities for college graduates with expertise in the food, agricultural and natural resources systems remain strong during the next five years. The USDA projected more than 52,000 annual job openings from 2005 to 2010, but only 49,300 qualified graduates are expected to fill these positions.

One solution to offset the projected shortfall of 2,700 qualified graduates was created in the *Big City, Big Country Road Show*, a partnership between the USDA, Texas A&M, Texas Tech, and Howard College. The *Big City, Big Country Road Show* is an innovative student recruitment program for non-traditional and underrepresented students into the food and agricultural sciences' workforce. The project goal is to initiate new recruitment strategies for inner-city high school students to prepare them for entry into agricultural science careers. By involving this underrepresented population in the many facets of agriculture, students will gain a better understanding and increased interest in this important industry.

While the USDA has funded project travel to three Texas cities (Houston, San Antonio, and El Paso) and three nationally-based cities (New York City, Chicago, and a west coast city) for two-week summer recruitment campaigns, many other programmatic costs remain. We need financial support for workshop supplies (digital media, diskettes, jump drives, etc.), students' lunches, digital cameras, and sponsorship for the production of a nationally-televised mini-series documentary film about this project. We expect to attract about 35 students per citywide workshop.

Can we count you as a vested partner in this innovative project? Please see the attached *Big City, Big Country Road Show* sponsorship needs and funding levels. Help us recruit new faces and perspectives for the agricultural industry.

Sincerely,



Gary J. Wingenbach
 Texas A&M University
 (979) 862-1507
g-wingenbach@tamu.edu

Chad S. Davis
 Texas Tech University
 (806) 742-2816
chad.s.davis@ttu.edu



Cash R. Berry
 Howard College
 (432) 264-5110
cberry@howardcollege.edu

This page is intentionally blank.

This page is intentionally blank.

Big City, Big Country Road Show Student Application

Thanks for your interest in this innovative student recruitment project. To be considered for the 2008 Road Show in El Paso, Atlanta, Chicago, or Portland, please complete the following fields and click the submit button.

Contact Information:

Title:

First Name: Last Name:

School Name:

Your Home Address:

City: State: Zip Code:

E-mail:

Telephone:

What is your age?

What grade are you in right now?

What is your gender?

- Female
 Male

- 9th
 10th
 11th
 12th

What is your race?

- American Indian
 Asian American
 Black/African American
 Hispanic American
 White/Anglo-American

Please check all family members who have ever been involved in an agriculture-related occupation or lifestyle.

Have you ever been involved in (check all that apply):

- FFA
 4-H
 Young Farmers

- Great-grandparents
 Grandparents
 Parents
 Legal Guardians
 Brothers/Sisters
 Uncles/Aunts
 Cousins

What is your favorite subject in high school?

Do you plan to attend college after high school?

- Yes
 No

Would you consider a career in communications/journalism?

- Yes
 No

Have you talked with your parents about attending college?

- Yes
 No

Would you consider a career in the agricultural sciences?

- Yes
 No

What subjects would you most like to study in college?

What is your ideal career?

(to avoid duplicating your information, please click submit once)

Thanks for your application!

If you have questions about this project, send us an [E-mail](#)

Big City, Big Country Road Show Teacher Application

Thank you for your interest in this innovative student recruitment project. We recognize that effective student recruitment does not happen with just one short visit to your school, but is highly dependent upon your active participation. To be considered for the 2008 Road Show in El Paso, Atlanta, Chicago, or Portland, please complete the following fields and click the submit button.

Contact Information:

Title:

First Name: Last Name:

School:

School Address:

City: State: Zip Code:

E-mail: (required for follow-up)

Telephone:

Age: Gender: Female Male

Subject Area:

Grade: 9th 10th 11th 12th (check each grade level that you teach)

Have you encouraged high school students to pursue a college education?

Yes No

Have you encouraged students to pursue careers in the agricultural sciences?

Yes No

How many students could you recruit for the Big City, Big Country Road Show summer workshop in your city?

Tell us why you want to participate in this project.



What do you expect to gain from participating in this project?



Why is it important to recruit inner-city students into college?



(to avoid duplicating your information, please click submit once)

Thank you for your application!

If you have questions about this project, send us an [E-mail](#)



DO YOU ENJOY

- Photography
- Designing Web Sites
- Making Videos
- Writing Stories
- Meeting New People

WANT TO GET COLLEGE CREDIT WHILE DOING WHAT YOU ENJOY THIS SUMMER?

For more information, please see Ms. Nealy or check out the Web site www.ag-communicators.org/BC2BC/index.htm

DEADLINE TO APPLY FRIDAY, MAY 25TH



Are you interested in ...

Then you're interested in the Big City, Big Country Road Show!

Big City, Big Country Partners

United States Department of Agriculture — Cooperative State Research, Education, and Extension Service
www.csrees.usda.gov

Texas A&M University
www.tamu.edu

Texas Tech University
www.ttu.edu

Howard College
www.howardcollege.edu

Bringing You the College Experience

What is the Big City, Big Country Road Show?

BC2BC is an innovative learning experience that brings a taste of college life to high school students. This program combines photography, writing, Web design, and videography with crisis communications planning. A series of hands-on experiential learning activities and distance technology allow students to achieve a better understanding of the world around them, especially the necessities of life: Food, clean water, shelter, clothing.

What's in it for me?

- Exploration of career fields
- Interaction with local and regional media personalities
- Interaction with local government representatives
- Production of work samples for professional portfolio development
- College credit for program completion at Texas A&M University, Texas Tech University and Howard College

How do I get involved?

For more information visit:
<http://www.ag-communicators.org/BC2BC/index.htm>

To register for the workshop, complete an application:
<http://surveys.ag-communicators.org/BC2BCS.asp>



BC2BC Big City Big Country Road Show

USDA-CSREES Texas A&M Texas Tech Howard College

- + About Us
- + Schools
- + Texas Cities
- + National Cities
- + Learning Modules
- + Student Projects

		leadership		
	technology		science	
		communications		
	problem solving		research	

This project funded by the United States Department of Agriculture Cooperative State Research, Education, & Extension Service
Cooperating partners include USDA CSREES, Texas A&M University, Texas Tech University and Howard College
questions? e-mail us at BC2BC@aged.tamu.edu

Corporate Sponsors and Partners





VITA

Lacee Brianne Frazee was born October 8, 1982 in Odessa, Texas, and is the daughter of Steven Dee and JoBeth Frazee and Grady and Catherine Annette Rice. Growing up in Lubbock, Texas, she was active in sports and FFA. In 2001, she served as the Texas FFA State First Vice President and traveled the state speaking to more than 500 high school agricultural science programs.

Lacee obtained a Bachelor of Science degree in agricultural communications from Texas Tech University in May 2006. While at Texas Tech, she was active in Sigma Alpha Professional Sorority, Agricultural Communicators of Tomorrow, Student Agricultural Council, Ag Ambassadors, Agri-Techsans, and served as president of Texas Tech's Collegiate FFA Chapter.

After completing a congressional internship in Washington, D. C., Lacee returned to Texas to complete a Masters of Science degree in agricultural education from Texas A&M University in August 2008. While at Texas A&M, Lacee was active in the Agricultural Graduate Student Society and completed a certificate in advanced international affairs at the Bush School of Government and Public Service.

Her permanent address is: 7703 Woodrow Road, Wolfforth, Texas 79382. The department address at Texas A&M University is: Department of Agricultural Leadership, Education, and Communications, Texas A&M University, MS 2116, College Station, Texas 77843-2116.