COMPARISON OF AGRICULTURAL EDUCATION STUDENTS TO THE "TYPICAL HIGH SCHOOL STUDENT" AS QUANTIFIED IN THE STATE OF OUR NATION'S YOUTH: BY THE HORATIO ALGER ASSOCIATION: FOLLOW-UP STUDY

FINAL REPORT

FOR

NATIONAL FFA ORGANIZATION

July 11, 2004

Submitted by

Dr. Mark A. Balschweid
Associate Professor
markb@purdue.edu

Dr. B. Allen Talbert
Associate Professor
btalbert@purdue.edu

615 West State Street
Purdue University
West Lafayette, IN 47907-2053
(765) 494-8422
http://www.ydae.purdue.edu/

ACKNOWLEDGEMENTS

The researchers would like to acknowledge the following for their assistance on this project and to publicly thank them for their efforts. A generous "Thank You" is given to:

All of the respondents to the questionnaires.

Rose Wise Scherer and Karleah Mundle, Graduate Research Assistants, Purdue University for data collection and analysis. A special "Thank You" is given for researching, conducting, and assisting with the literature review.

The National FFA Organization staff for databases, assistance, and support.

The National FFA Organization for funding.

TABLE OF CONTENTS

APPENDICES

Introduction

The purpose of this project was to provide state staff and local administrators a tool to compare their populations with the findings from the original National FFA Organization-Horatio Alger study conducted in 1999-2000 (Talbert & Balschweid, 2000). The specific objective was to provide agricultural education stakeholders in individual states with data representing the demographics and opinions of FFA members in their specific state.

The data collected in this project correlated to the data collected in the original study. Specific items included:

a. Demographics to include household income and household size.
b. Degree of effort and challenge.
c. Amount of work required.
d. Challenging courses.
e. Sense of personal opportunity.
f. Quality of courses.
g. Ratings of the importance of courses.
h. Holding jobs.
i. Important to personal success.
j. Motivation to seek further education.
k. Plans after high school.
l. Top 10 career choices.
m. Salary expectations.

This report is organized into five sections in addition to appendices. The Introduction, Methodology, and Relevant Literature sections provide an overview of the project. Findings are presented in the fourth section, and Conclusions, Implications, and Recommendations are presented in the final section.

Methodology

Dr. B. Allen Talbert and Dr. Mark A. Balschweid, both Associate Professors of Agricultural Education at Purdue University, conducted the original study comparing secondary agricultural education students who are currently FFA members, as well as secondary

agricultural education students who are not FFA members to those secondary students studied in the 1999-2000 Horatio Alger report "The State of Our Nation's Youth." The study involved the use of quantitative procedures, specifically survey research design and was conducted during the 1999-2000 academic year.

It must be noted that neither the Horatio Alger Association nor the NFO research group, who conducted the Alger Study, were willing to release information detailing the selection and sampling techniques used to conduct "A Study of Our Nation's Youth." As a result, the selection and sampling of the students in the original study were limited to the information made available by the National FFA Organization and public documents regarding the enrollment of students in secondary Agricultural Education programs and the membership records of the National FFA Organization. It should also be noted that specific questions and response scales as well as analysis techniques were not attainable for the original Alger study.

In the current project, Dr. Talbert and Dr. Balschweid utilized a modified survey instrument to collect similar data. The population of the study consisted of all Unites States students enrolled in secondary agricultural education who were currently members of the National FFA Organization. A random sample of FFA members from each of the 50 states in the National FFA Organization was utilized. To ensure sufficient respondents from each state a combination of sample size selection techniques was utilized. For states with FFA membership below 2,000 (National FFA Organization, 2002), Cohen's (1988) tables for determining sample size was used. This technique was used to ensure that no state had less than 50 FFA members in the sample. For states with FFA membership of 2,000 to 20,000 (National FFA Organization, 2002), a sample size of 100 FFA members from each state was used. For states with FFA membership greater than 20,000 (National FFA Organization, 2002), the formula of 10 times the

numbers of variables was used, which resulted in 250 FFA members from each state. Although this method statistically over-sampled smaller states, it was hoped that this would provide large enough numbers from each state to provide valid data. The overall sample size of 5,000 allowed for generalizations to the entire population of FFA members.

Web Based Survey. A self-administered web-based questionnaire similar to the instrument used in the initial project was the original data collection instrument (**see appendix XXX**). After receiving approval from the Institutional Review Board that governs research conducted on human subjects at Purdue University in the fall of 2002, a cover letter, consent form, and assent form were mailed to 5,000 randomly selected FFA members representing each of the 50 United States on November 22, 2002. Information contained in the letter directed the FFA members to a web site containing the online questionnaire, gave each member a unique username and password, listed directions for filling out the questionnaire, and was signed by Dr. Larry Case, National FFA Advisor and the Purdue University researchers. After three weeks a follow up postcard was mailed to all FFA members involved in the study. After six weeks from the time of the initial mailing the total response rate was calculated at **XX%.** Since the web based survey resulted in a low response rate the researchers consulted with members of upper management at the National FFA Organization and it was decided to resort to collecting the research data utilizing traditional paper based survey research design.

On February 18, 2003 a package containing a cover letter signed by the National FFA Advisor, Dr. Larry Case and the Purdue University researchers, a consent form, a written questionnaire, and a self-addressed, postage-paid return envelope was mailed to FFA members in each of the 50 United States. Packets were mailed to only those FFA members involved in the study who did not respond to the web based survey. Electronic methods which tracked IP

addresses were utilized to detect which FFA members had responded to the web based survey. The return label on the reply envelope was coded to facilitate follow-up mailings. Two weeks after the initial paper based survey was mailed a follow up postcard was mailed to all participants. After eight weeks from the time of the initial mailing the total response rate for the web based and paper based survey was calculated at **XX%**. On May 23, 2003 an identical package containing a cover letter, consent form, questionnaire, and self-addressed, postage-paid envelope was mailed to all remaining FFA members. After two weeks a reminder postcard was mailed to all remaining FFA members who had not completed a survey.

After consulting with both Bernie Staller, Chief Operating Officer for the National FFA Organization and Anna Melodia, Program Director for the Educational Division, it was decided to curtail attempts to collect further data. As a result, a total of XX members responded to the web based survey (XX%), XX members responded to the first paper based survey (XX%), and XX FFA members responded to the final paper based survey for an overall total of XX% response rate.

Survey Instrument

The survey consisted of a self-administered electronic or mailed questionnaire. Both versions of the questionnaire utilized the exact same questions. Only the format of the instrument was different. The questionnaire consisted of a twelve-page letter-sized booklet containing 70 questions relating to respondents' demographic information and attitudes towards school in general, their future aspirations, and their perceptions of their agricultural education coursework and FFA involvement. There were a combination of Likert-type statements asking respondents to indicate their level of agreement or disagreement with the specific statement, yes/no questions asking students to circle the response that most closely indicates their beliefs or situation, statements asking for participants to select only the most appropriate response, and statements asking participants to select all of the answers that applies to their situation.

The instrument was created by Talbert and Balschweid and built upon similar questions used in the Horatio Alger annual study "The State of Our Nation's Youth". The current instrument was modified from the original National FFA Organization-Alger study (Talbert & Balschweid, 2000) by adding questions and rewording questions that appeared confusing. Face, content, and construct validity was established with the assistance of management at the National FFA Organization. The instrument was then pilot tested by a population of members of the National FFA Organization who were not included in the study. Reliability was established post-hoc from the Likert-type responses and was calculated at **XXX** for Cronbach's alpha.

A stratified random sample of members of the National FFA Organization from each of the fifty United States was utilized. The population was the **XXXXXX** FFA members in the National FFA Organization in 2001. The sampling frame was the mailing list for the FFA New Horizons Magazine. A list of randomly generated numbers for each of the 50 states was

provided to the National FFA Organization. They matched the numbers to their database, generated a database of appropriate number for each state with names and addresses, and provided them in a computer file to the researchers. For states with under 2,000 members in the National FFA Organization the sample size was 50. For states with membership between 2,000 and 20,000 FFA members, 100 names were selected, and for states in excess of 20,000 FFA members 250 were selected for inclusion in the study. In all, 5,000 names were provided to the researches from the National FFA Organization membership. In each case, additional names for each state were included to be used to fill in for undeliverable mailing addresses, names corresponding to non-FFA members (such as advisory committee members for local agricultural education programs and local FFA advisors), and FFA members no longer in the organization.

Response Rates

The study had a useable response rate of **XX**%. The useable response rate was calculated by adding the responses to the web-based survey and the responses to both of the mailed questionnaires; then subtracting questionnaires returned by the Post Office as undeliverable and questionnaires returned by non-members from the 5000 in the original sample, and finally dividing that number into the total number of members with valid addresses. Of the 5000 questionnaires XXX were answered in the electronic format, XXX responded to the first mailed survey, and XXX returned surveys in response to the second mailed survey. **Because of the low response rate after three mailings (XX%), the responses were divided into early (those who responded to the electronic survey and the first mailing, n=XXX) and late (those who responded to the second mailing, n=XX). ANOVA or Chi-Square was conducted on key questions to determine if any statistical differences existed between early and late**

respondents. Of the 13 selected variables for comparison, only two were statistically significant at the .05 level.

Data Analysis

The data were analyzed using SPSS for Windows. Descriptive statistics including mean, standard deviation, frequency, range, and percentage are reported where appropriate. It was not the objective of the study to analyze individual state data for the purpose of state-to-state comparisons. Therefore, no data is contained herein that includes comparisons between states or regions, or within regions.

Relevant Literature

The FFA is the national youth organization for students studying agricultural education in public secondary schools. It is an essential component of secondary agricultural education. The main tenets of the association are found in the organization's mission: FFA makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth, and career success through agricultural education (National FFA Organization, 1999). In 1999 alone almost one-half million secondary agricultural education students enjoyed official membership in the National FFA Organization.

Although admirable, this number represents roughly half of all students enrolled in agricultural education programs nationwide. Secondary agricultural education teachers have long perceived the benefits of membership in the National FFA Organization for their students. However, concern exists for the lack of perceived benefits of membership in the National FFA Organization for many of the students enrolled in agricultural education. Renewed discussions concerning the need for FFA and agricultural education have taken center stage in recent issues of the *Agricultural Education Magazine* where questions have been posed to clarify the need for public school agricultural education and the FFA in the 21st century.

Many actively engaged in agricultural education can think of no other opportunities where students can receive the level of exposure to premier leadership, personal growth, and career success (National FFA Organization, 1999) that the FFA has to offer. However, total membership inconsistent with total students enrolled in agricultural education has confounded those closely associated with the National FFA Organization since the benefits of membership appear self-evident. Out of an estimated 800,000 agriculture students today, only about 450,000 receive educational benefits as members of the FFA (Stagg & Staller, 1999).

Though many members, advisors, parents, and supporters can extol the virtues of membership in the National FFA Organization, until now it has been difficult to determine the specific value for students participating in FFA and their perceptions of the impact that membership in the FFA has had upon their schooling, preparation for life beyond high school, and careers. Furthermore, no information is presently available that compares agricultural education students, both FFA members and non-members, with their peers who are not enrolled in a secondary agriculture class.

In its annual reports, the *State of our Nation's Youth,* the Horatio Alger Association utilizes a mailed questionnaire to obtain responses from adolescents ages 14-18 on such issues as family, school, social issues, and their perceptions of their future. Just as this instrument produces data helpful for assessing the beliefs and perceptions of today's youth, it can prove useful to duplicate these efforts for students specifically in agricultural education and the National FFA Organization for issues of comparison.

Evidence exists that identifies factors influencing students to enroll in agricultural education courses. Marshal, Herring, and Briers (1990) found that students enrolled in agricultural education because of the class characteristics. Hoover and Scanlon (1991) determined that the image of agricultural education, the FFA, and the agriculture profession in general were the greatest barriers for students not enrolling in agricultural education.

Research can also lead us to conclusions explaining why some agricultural education students join the National FFA Organization and others do not. Conners, Moore, and Elliot (1990) found that the most important factor influencing non-members to join the organization was their interest in agriculture, while the barriers for agricultural education students not joining FFA included their level of interest in agriculture and the future value of the FFA to their career.

And, Gleim and Gleim (1999) reported that class rank, year first enrolled in FFA, interest in agriculture, former family membership in FFA, teacher enthusiasm for FFA, and including FFA activities as part of the classroom instruction were significant predictors for whether a student would be an FFA member or non-member.

Young people enjoy doing something worthwhile, excelling in their work and play, being appreciated, being in responsible positions, learning how to help themselves, having opportunities to participate in activities, and obtaining recognition through outstanding service and achievement (Phipps & Osborne, 1980). Agricultural educators are encouraged to link FFA leadership activities, award programs, and competitive events to high quality agricultural education curriculum (Local Program Success, 1998). Lockaby (1998) concluded that within the agricultural education model, the FFA is the most appropriate tool for teaching values and attitudes to agricultural education students. And, Keith (1997) revealed that the type of competition that youth organizations offer is beneficial to the student as well as their families.

Finally, Turner and Herren (1997) compared FFA members with non-members in agricultural education. They found that FFA members had a higher need for achievement, affiliation, and power when compared to agricultural education students who did not join the National FFA Organization.

Quantitative Findings

FFA members were asked demographic questions to compare respondents' characteristics with the demographics of the Alger study. Questions from this study were worded as similar as possible to that of the 1999 study to allow for comparisons. The Alger study changes questions and wording for each annual study, so some FFA questions have no corresponding Alger study questions for this report. Basic demographics for the respondents are presented in Tables 1 and 2.

The percentage of FFA members identifying themselves as White declined slightly from the 1999 study (94% to 92%). This is an overrepresentation as compared to the Alger report (60%). The age range represents those ages found in middle school and high school. Because of the sampling frame used, college-aged members also are represented. The age range distribution is similar to that obtained in the 1999 study. The 1999 study asked FFA members whether they lived on a farm or in a rural, urban, or city area. In that study, 84% of the respondents said they lived either on a farm or in a rural area. For this study, 51% of respondents said they lived in an urban area defined as an area with subdivisions, many stoplights, and lots of stores. Household size has stayed consistent with 70% of respondents living in a household with four or more people including themselves. The percentage of FFA respondents with a family income level below average (21.1%) was similar to that of the Alger study (20%).

Reported participation in activities for FFA respondents declined from 1999 to 2003. In the 1999 study 90% of respondents participated in at least one of the listed activities, whereas in 2003 the percentage was 72%. Participation in sports dropped the most from 73% to 62%. Respondents in 2003 were also less likely to have held a job in the previous year (72% vs. 62%) or planned to hold one in the current year (87% vs. 74%). A new question asked for 2003 was whether the participant had volunteered for a non-profit agency such as Humane Society, Habitat for Humanity, Red Cross, or a local hospital. Approximately one-third of the respondents had volunteered their time during the previous school year. Respondents in higher grade levels (10th and higher) were more likely to volunteer than students in lower grade levels (7-9th grade). FFA respondents had similar college attendance plans as Alger study respondents and 1999 FFA respondents.

Respondents' career choices were organized by the 16 career clusters as recognized by the U.S. Department of Education. The cluster titled "Agriculture and Natural Resources" included secondary agriculture teacher. One-third of the respondents have plans to enter a career in this area. The health sciences career cluster, which includes doctors, had the next highest percentage of respondents.

FFA members were asked to identify their greatest motivator to continue their education beyond high school. Two-fifths of the respondents identified getting a job as their highest motivator. This is similar to results obtained in 1999. The Alger study allowed respondents to select multiple categories; however, getting a job was also the highest motivator in that study.

Table 1
Demographics

Category	Response	FFA n	Members %	Alger Study %
Student Ethnicity	White	984	92.0	60
	Hispanic	26	2.4	14
	Multiracial/ Other	23	2.2	7
	Black	16	1.5	16
	Native American	15	1.4	N/A
	Asian American	6	0.5	3
Age	<14	13	1.2	1
	14	59	5.5	11
	15	217	20.2	25
	16	262	24.4	25
	17	236	22.0	22
	18	156	14.5	12
	>18	130	12.2	4
Type of Area [b]	Rural	421	39.8	10
	Urban	540	51.0	56
	City	97	9.2	32
Household size	3 or fewer	318	29.6	
	4 or more	757	70.4	
Family Income Level [a]	Below Average	225	21.1	20
	Average or Above	843	78.9	80
Participation in Activities				
	Participated in any Activity	780	72.2	
	Sports	666	61.6	
	Clubs other than FFA	747	69.1	
	Church Youth Group	549	51.0	

(Table 1 continues)

[a] Self-reported. Below average for FFA study was defined as receiving free/reduced lunch. Below average was defined for Alger Study 2002 as far below average or slightly below average.

[b] Urban defined as area with subdivisions, many stoplights, and lots of stores. City defined as area with little open space except for parks, one or more shopping malls, is one of most populated areas of the state.

Table 1
Demographics (continued)

Category	Response	FFA	Members	Alger Study
		n	%	%
Held a Job	2001-02 School Year	663	61.8	38
	2002-03 School Year	795	74.2	
Volunteered	Yes	385	35.9	
	No	686	64.1	
Plans after H.S.	Attend 4-Year College	637	59.7	66
	Attend 2-Year College	189	17.7	18
	Attend Tech School	107	10.0	5
	Get a Job	69	6.5	11
	Married (no work outside home)	4	0.4	NA
	Join Armed Services	61	5.7	NA
Career Choices	Agriculture	340	33.7	
	Architecture	73	7.2	
	Arts	40	4.0	
	Business	67	6.6	
	Education	83	8.2	
	Finance	8	0.8	
	Health Science	139	13.8	
	Hospitality	9	0.9	
	Human Services	27	2.7	
	Information Tech.	23	2.3	
	Law	60	5.9	
	Manufacturing	67	6.6	
	Government	9	0.9	
	Retail	11	1.1	
	Scientific Research	36	3.6	
	Transportation	17	1.7	
Motivator for further education	Getting a job	447	42.2	66*****
	The ability to make things better	224	21.1	24
	Independence	143	13.5	31
	More options	126	11.9	
	Self-enrichment	52	4.9	
	Follow footsteps of someone	36	3.4	
	My parents/ family	24	2.3	
	Peer pressure	6	0.6	
	Social status	2	0.2	

* Respondents could select multiple categories

Table 2 shows additional demographics asked of FFA respondents. The grade distribution showed the greatest percentages of respondents were in grades 10-12. This distribution is similar to that obtained in the 1999 study. There were more female (53.8%) than male (46.2) respondents. This is a difference from the 1999 study, which had more male respondents. Two-thirds of the respondents had a parent or sibling who had been in agricultural education/FFA. This is similar to the results from the 1999 study (68.5%). An additional question this year asked who the family member was. Of those respondents answering yes, 35% had a sibling, 31% had multiple family members, and 28% had a parent with agricultural education/FFA experience. More than one-half of the respondents were currently or formerly a 4-H member.

Table 2
Additional Demographics for FFA Study

Category	Response	n	%
Grade	7	1	0.1
	8	21	2.0
	9	66	6.4
	10	282	27.5
	11	259	25.2
	12	224	21.8
	College Freshman	100	9.8
	College Sophomore	48	4.8
	College Junior	16	1.6
	College Senior	7	0.7
Gender	Male	498	46.2
	Female	580	53.8
Parents/Siblings in AgEd/FFA	Yes	710	66.2
	No	363	33.8
If yes, who?	Parent	194	28.3
	Sibling	240	35.0
	Grandparent	8	1.2
	Uncle/Aunt	6	0.9
	Cousin	4	0.6
	Other family	22	3.2
	Multiple family members	212	30.9
4-H Member	Yes, current member	256	24.0
	No, former member	329	30.9
	No	481	45.1

Table 3 displays engagement demographics for FFA respondents in a different format from that presented in Table 1. FFA respondents (3.19/4.00) had a similar overall grade point average to Alger study respondents (3.11/4.00). FFA respondents participated in an average of 1.89 sports and 2.5 clubs other than FFA.

Table 3
Engagement Demographics

Category	**FFA Members**				**Alger Study**
	n	**mean**	**s.d.**	**Range**	**mean**
Grade Point Average	1003	3.19	.63	1.00- 4.00	3.11*
No. Sports Participated in	666	1.89	1.04	0- 8	
No. Clubs Participated in other than FFA	747	2.42	1.74	0-15	

* Reported as A-F grades, converted by researchers

FFA respondents strongly agreed that the amount of work they do in school now is important to their success later in life. They also strongly agreed that it is important they try to do their best in all of their classes. They should less agreement with the statements "it is important to me to do my homework before I do other activities" and "when choosing courses, I try to take the most difficult and challenging."

Table 4
Degree of Effort and Challenge

Category	**FFA Members**				**Alger Study**
	n	**mean**	**s.d.**	**% Agree / Strongly Agree**	**% Agree**
Amt of work is important to later success	1080	3.56	.59	95.2	
It is important I do my best	1078	3.53	.58	96.1	
Doing homework is important	1079	2.84	.71	71.6	
Take difficult courses	1079	2.77	.70	67.4	

[a] 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree

Table 5 shows the responses to statements in the area of requirements to work on schoolwork. FFA respondents disagreed that parents and teachers require either too much or too little work of them on their schoolwork.

Table 5
Amount of Work Required

Category	FFA Members				Alger Study
	n	mean [a]	s.d.	% Agree / Strongly Agree	%
Parents require too much	1077	2.09	.76	21.5	
Parents don't require enough	1079	1.84	.73	15.3	
Teachers require too much	1076	2.36	.75	39.3	
Teachers don't require enough	1076	1.86	.68	13.8	

[a] 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree

Table 6 shows the responses to statements in the area of sense of personal opportunity. Students strongly agreed with the statements regarding the link between hard work in school and opportunities available later in life. Using a paired samples t-test, each of the statements regarding high school classes in general were compared to the corresponding statement regarding agriculture classes. Agriculture classes received higher means ($p < .01$) for each of the statements except for very challenging, which was not statistically significant ($p < .176$).

Table 6
Sense of Personal Opportunity

Category	FFA Members				Alger Study
	n	mean [a]	s.d.	% Agree / Strongly Agree	%
Harder I work in school, more opportunities later	1080	3.55	.63	94.5	
Many opportunities available after I graduate	1075	3.43	.61	94.9	
High school is preparing me for future	1076	3.23	.70	87.9	
High school very challenging	1075	2.83	.71	69.8	
High school very interesting	1075	2.86	.71	73.8	
High school very exciting	1073	2.59	1.17	54.0	
High school allow openly discussion	1072	2.99	.67	82.3	
Agriculture is preparing me for future	1072	3.32	.72	89.5	
Agriculture classes very challenging	1074	2.79	.79	66.4	
Agriculture classes very interesting	1074	3.37	.70	91.2	
Agriculture classes very exciting	1071	3.25	.77	85.1	
Agriculture classes allow openly discussion	1074	3.37	.71	91.1	

[a] 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree

FFA respondents were asked to rate the importance of high school courses to them. Table 7 shows the results. Mathematics, agricultural education, science, English, and computers were rated as important. Foreign languages were rated as somewhat important.

Table 7
Ratings of the Importance of Courses

Category	**FFA Members**				**Alger Study**
	n	**mean** [a]	**s.d.**	**% Important / Very Important**	**%**
Mathematics	1078	3.25	.80	83.7	
Agricultural Education	1077	3.23	.83	81	
Science	1077	3.16	.82	81.1	
English	1078	3.00	.86	74.1	
Computers	1078	2.90	.91	67.7	
Government History/Social Studies	1077	2.76	.88	62.3	
Foreign Language	1078	2.15	1.00	34.4	

[a] 1=Not Important, 2=Somewhat Important, 3=Important, 4=Very Important
[b] % on Alger Study based on Very, Somewhat Important. Scale was different that used for the FFA study.

Table 8 shows the ratings of the importance of eight items to the FFA respondents' definition of success in life. The items "immediate family," "work and career," and "friendships" were rated as very important. The item "being attractive and popular" was rated as somewhat important.

Table 8
Ratings of the Importance to Future Personal Success

Category	**FFA Members**				**Alger Study**
	n	**mean**	**s.d.**	**% Important / Very Important**	**%**
Immediate family	1076	3.64	.63	94.5	78
Work & Career	1079	3.56	.59	95.9	
Friendships	1079	3.56	.63	94	56
Personal Development and Success	1078	3.48	.64	93.2	
Make a contribution to society	1078	3.05	.75	78.5	51
Religious / Spiritual activities	1078	2.99	.95	70.1	43
Extended family	1078	2.95	.84	74.4	
Being attractive and popular	1079	2.07	.89	29.3	9

[a] 1=Not Important, 2=Somewhat Important, 3=Important, 4=Very Important
[b] % on Alger Study based on Very Important. Scale was different than used for the FFA study.

In Table 9, the agriculture teacher was the most influential person for the respondent enrolling in agricultural education classes. In Table 10, the agriculture teacher was also the most influential person for the respondent joining FFA. Friends were the second greatest influencer for both enrolling in agricultural education classes and joining the FFA.

Table 9
Influencers to Enroll in Agricultural Education Classes

Category	n	%
Ag. Teacher	299	28.0
Friends	218	20.4
Parent(s)	209	19.6
Other family	166	15.5
Other	156	14.6
Agribusiness Person	20	1.9

Table 10
Influencers to Join FFA

Category	n	%
Ag. Teacher	414	38.5
Friend	199	18.5
Other Family	194	18.0
Parent(s)	168	15.6
Other	83	7.7
Agribusiness Person	17	1.6

Table 11 shows the involvement levels of the FFA respondents in the FFA. More than one-half of the respondents had received their Chapter FFA degree. Almost one-half had served as a chapter, district, or state officer. Almost one-third of the respondents had never participated in a Career Development Event (CDE), while another one-third had participated on a state-level CDE as their highest level of participation. Respondents were asked to report their highest level of participation in a leadership CDE such as public speaking or demonstration. More than 40% reported that they had never participated in an leadership CDE. Respondents were asked to select which leadership events they had participated in. Almost 30% of respondents reported they had never participated in the listed events. Almost one-half of the respondents had participated in leadership events at the chapter level, and more than one-half had attended their state convention. One-third reported they had attended the National FFA Convention. More than one-half of the respondents reported they had never completed a proficiency award application, while one-fourth reported that the chapter-level was the highest for which they had submitted a proficiency award.

Table 11
FFA Involvement by FFA Members

Category	Response	n	%
Highest Degree	Discovery	84	8.4
	Greenhand	287	28.7
	Chapter	435	43.5
	State	154	15.4
	American	41	4.1
Highest Office	Never held a committee membership	339	31.5
	Committee member	149	13.8
	Committee chair	63	5.8
	Chapter officer	449	41.7
	District officer	50	4.6
	State officer	27	2.5
Highest Level of CDE Participation	Never participated in CDE	333	31.1
	Chapter CDE	116	10.8
	District CDE	185	17.3
	State CDE	332	31.0
	National CDE	104	9.7
Highest Level Leadership CDE Participation (e.g., Public Speaking, Demonstration)	Never participated in leadership contest	467	43.5
	Chapter leadership	162	15.1
	District leadership	246	22.9
	State leadership	162	15.1
	National leadership	36	3.4
Leadership Event Participation [a]	Never Participated	312	28.9
	Chapter Activities	525	48.6
	State Level events	398	36.8
	State Convention	577	53.4
	MFE,EDGE, ALD	238	22.0
	Nat'l FFA Convention	361	33.4
	WLC	57	5.3
Highest Proficiency Award	Never completed proficiency award application	557	52.1
	Chapter proficiency	276	25.8
	District proficiency	89	8.3
	State proficiency	115	10.8
	National proficiency	32	3.0

[a] Respondents selected all that apply.

Respondents were asked how much "loneliness or feeling left out" and "pressure to get good grades" were a problem for them in high school. More than two-thirds reported that loneliness was not a problem for them. Almost two-thirds reported that pressure to get good grades was a minor or major problem for them.

Table 12
Problem for Individual Student

Category	Response	FFA Members		Alger Study
		n	%	%
Loneliness	Not a Problem	732	68.2	64
	Minor Problem	295	21.5	27
	Major Problem	47	3.4	8
Pressure to get good grades	Not a Problem	411	38.2	28
	Minor Problem	534	49.6	37
	Major Problem	131	12.2	35

FFA members were asked the types of SAE they currently have. Three-fourths of the respondents reported they had an SAE in one or more of the four categories. More than one-half reported a production entrepreneurship (raising an animal or growing crops) or placement (working for a farmer or business) SAE. An agribusiness entrepreneurship (lawn care business) was reported by 15.6% of respondents and an agriscience or experimentation (conducting experiments on plant growth) SAE by 9.6%.

Table 13
Types of SAE for FFA Members

Category	Response	n	%
Any SAE	Yes	802	74.2
	No	279	25.8
Production Entrepreneurship SAE	Yes	600	55.7
	No	477	44.3
Placement SAE	Yes	555	51.7
	No	519	48.3
Agribusiness Entrepreneurship SAE	Yes	167	15.6
	No	904	84.4
Agri Science or Experimentation SAE	Yes	102	9.6
	No	964	90.4

FFA members were asked to report the length of time during the school year they planned to be in agriculture classes for the current year. Almost 70% intended to take agriculture classes for the full year. This may be one class that meets for the entire 36 weeks or two or more semester/trimester classes.

Table 14
Structure of Agricultural Education Classes for FFA Members

Category	**Response**	**n**	**%**
Module Type	6 weeks	8	1.1
	9 weeks	33	4.5
	12 weeks	9	1.2
	18 weeks	133	18.3
	24 weeks	31	4.3
	36 weeks	506	69.6
	Other	7	1.0

Table 15
Distribution of Responses by State

State	Code Number	n	Response Rate (%)
Alabama	1	8	.7
Alaska	2	9	.8
Arizona	3	22	2.0
Arkansas	4	19	1.8
California	5	36	3.3
Colorado	6	32	3
Connecticut	7	27	2.5
Delaware	8	9	.8
Florida	9	14	1.3
Georgia	10	30	2.8
Hawaii	11	8	.7
Idaho	12	27	2.5
Illinois	13	17	1.6
Indiana	14	25	2.3
Iowa	15	23	2.1
Kansas	16	28	2.6
Kentucky	17	24	2.2
Louisiana	18	12	1.1
Maine	19	7	.6
Maryland	20	17	1.6
Massachusetts	21	5	.5
Michigan	22	28	2.6
Minnesota	23	26	2.4
Mississippi	24	8	.7
Missouri	25	22	2.0
Montana	26	24	2.2
Nebraska	27	28	2.6
Nevada	28	7	.6
New Hampshire	29	5	.5
New Jersey	30	9	.8
New Mexico	31	24	2.2
New York	32	21	1.9

North Carolina	33	19	1.8
North Dakota	34	19	1.8
Ohio	35	15	1.4
Oklahoma	36	47	4.3
Oregon	37	27	2.5
Pennsylvania	38	19	1.8
Rhode Island	39	6	.6
South Carolina	40	16	1.5
South Dakota	41	25	2.3
Tennessee	42	14	1.3
Texas	43	33	3.1
Utah	44	25	2.3
Vermont	45	6	.6
Virginia	45	14	1.3
Washington	47	18	1.7
West Virginia	48	20	1.9
Wisconsin	49	26	2.4
Wyoming	50	19	1.8
Unknown (web-based)	51	112	10.4
Total		1,081	100.10%

Conclusions, Implications, and Recommendations

The conclusions, implications, and recommendations for the study are presented in this section. Comparisons between FFA members and agricultural education students not in FFA were made with a statistical significance level of .05 set a priori. No statistical analyses were performed using the Alger study data because of the inability to obtain research methodology and procedures from that study. Conclusions and recommendations drawn from comparisons with the Alger study are based on "practical" significance and are not generalizable to any other populations.

Engagement

FFA members had a higher participation rate in any activity, a greater percentage that held a job last year, and a greater percentage taking more difficult and challenging courses than either the general youth population or non-members. In addition, FFA members more than non-members participated in sports and clubs, had higher self-reported grade point averages, were involved in church-related youth groups, were current or former 4-H members, were more decided in career choices, had a greater percentage reporting having an SAE, and fewer believed teachers required too much. When asked what influenced them not to join FFA, 31% of the non-members indicated not enough time, and when ranking barriers to joining FFA one in four non-members reported "lack of time" as the number one barrier to joining FFA.

The implication is that FFA members are more engaged than non-members in almost all aspects of school life and career preparation and are more engaged than the overall youth population in many of the aspects of school life and career preparation. If engagement is related to success, this implies that students who participate in FFA are more prepared to obtain careers of their choice.

This research was not designed to address cause and effort. Although there was found a relationship between engagement and FFA membership, it is not known whether FFA caused the students to be more engaged or engaged students also choose to be involved in FFA. It is recommended that the FFA organization at all levels explore ways to engage in FFA those agricultural education students who are non-members. It is further recommended that local agriculture teachers dispel the myth that FFA takes too much time.

Connection to Agriculture

FFA members more than non-members had a higher percentage that were current or former 4-H members, a higher percentage that had parents or siblings who were in agricultural education or 4-H, and a higher percentage self-reported that they lived on a farm. A higher percentage of FFA members than non-members reported that they had an SAE.

This implies that FFA members are more connected to agriculture. It also implies that the core of traditional agriculture students continue to gain benefits from the FFA and its activities. There is an implication that effort to diversify FFA membership to students outside of traditional agriculture demographics is still needed.

There appears to be a core of FFA members who are directly involved in agriculture, therefore it is recommended in the effort to broaden the scope of FFA that traditional aspects of FFA not be de-emphasized to the detriment of these students. It is recommended that the effort to broaden FFA to include a greater diversity of membership be continued.

Aspirations

FFA members more than non-members and the same as the general youth population plan to attend a 4-year college. The top 10 career choices for FFA members contain six that are related to agriculture, whereas non-members' choices contain one and the general youth

population's choices contain none. In addition, the choice with the greatest percentage for non-members is undecided. FFA members chose teaching as their number one choice (9%) of which 30% chose agriculture teacher specifically. FFA members believed to a greater extent than either non-members or the general youth population that "the amount of work I do in school now is important to my success later in life."

The implication of this is that FFA members aspire to agriculturally related careers and believe that their work at school influences their success in those careers. Another implication is that FFA members more than non-members are responding to the message that agriculture is more than "cows, plows, and sows." This is evident in the career choices of landscaping, natural resources, teaching, veterinarian, and something in agriculture that may not be directly connected to production agriculture.

It is recommended that agricultural education classroom instruction continue to emphasize careers in agriculture that are in the fields of business, computers, engineering, technical and others that appeal to non-members and the general youth population. It is further recommended that CDEs, proficiency applications, and SAEs emphasize careers for which they prepare students.

Value of School

FFA members more than non-members believe that their agriculture classes are preparing them for the future, are challenging, interesting, exciting, and allow for open discussion. Also, FFA members are in greater agreement about their agriculture classes preparing them for the future; being challenging, interesting, exciting; and allowing for open discussion than the general youth population is about courses overall having these characteristics. The general youth population, FFA members, and non-members rated the importance of high school courses mostly

the same. FFA members rated Health/Sex Education lower than the other two groups. FFA members rated foreign languages lower than the general youth population. The percentage of the general youth population and non-members planning to attend a four-year institution and the percentage identifying foreign languages as important were in congruence, whereas, the percentage of FFA members planning to attend a four-year institution was nearly double the percentage of those identifying foreign languages as important. FFA members rated Agricultural Education of greater importance than did non-members. It can be concluded from the qualitative findings that the local level of FFA participation is important to FFA members.

An implication is that students who are FFA members see greater value in their agricultural education classes; therefore, they are more engaged in their agricultural education classes. A further implication is that if a way can be found to convince non-members of the value of their agricultural education classes, they will find those classes more challenging, interesting, exciting, and of more importance.

Without joining the debate on 100% FFA membership and 100% SAE participation for all agricultural education students, it is recommended that all agricultural education students be counted and treated as local FFA members and all agricultural education students receive career exploration instruction and career opportunities.

Future Personal Success

FFA members differed from non-members in rating the importance of work and career, personal development and satisfaction, immediate family, and extended family to their future personal success. Also, it appears that FFA members may rate religious and spiritual activities of greater importance than the other two groups did. A conclusion from the qualitative findings

is that FFA members believe that the FFA provides leadership training and leadership opportunities along with building confidence and personal pride.

This implies that the FFA mission of promoting leadership, personal growth, and career success is indeed what FFA members gain from FFA. It is recommended that non-members be targeted with the message that their skills and interests can be fulfilled within the context of agriculture without them needing a strong background in agriculture. It is recommended that the FFA mission statement continue to guide FFA activities and events.

Agricultural Education

Both FFA members and non-members reported that reasons internal to themselves were the greatest influencer for them to enroll in agricultural education classes. FFA members more than non-members were influenced to enroll because of the agriculture teacher. Non-members were more influenced to enroll by other factors beyond their control such as guidance putting them in the class and the agriculture class being the only class that would fit their schedule. The agriculture teacher was the greatest influence on students joining the FFA. Non-members reported that their three greatest barriers to joining FFA were they were not interested, did not have enough time, and did not know much about the FFA. When asked to rank stated barriers, the three identified as the greatest were takes too much time, the purpose of FFA is not attractive to me, and FFA is not interesting.

One implication is that it will be extremely difficult to persuade someone to join FFA if they are not interested. Another implication is that students may be saying, "I don't have enough time" as another way of stating they are not interested. The barrier of time is interesting in that non-members are less engaged in other activities than FFA members are so should have more time available for FFA.

An implication from the non-members is that they are not in agricultural education classes because of agriculture or a desire to learn about agriculture, but because of other factors (guidance, like the agriculture teacher, only class that would fit schedule, etc.). A question that needs to be asked is "Should students who fit this profile be expected to join FFA to its fullest extent?" It is recommended that further research be conducted to identify levels of interest or motivations for students in agricultural education classes. It is recommended that emphasis for involvement at the local level be the force for connecting non-members to the agricultural education model. Most students will never see National convention or Washington, DC but local plant sales, landscaping a town's nursing home, or cleaning up a local waterway could influence many agricultural education students who won't join FFA to reconsider the obvious benefits.

FFA Involvement by FFA Members

A little less than one-third of the FFA members reported that they had not received any award in FFA and almost one-half checked that their highest office was that of committee member (which was the lowest level of participation listed for that question in the survey). Two-fifths had never participated in a CDE, one-half had never participated in a leadership event, and two-thirds had never completed a proficiency award application. One-third did not have an SAE at the time of the survey.

One implication is that involvement of a greater percentage of the membership in FFA activities could persuade agricultural education students who are not FFA members to become involved. A recommendation is that agriculture teachers should get their current membership more actively involved. This will spread the benefits of FFA involvement to more members and may help in getting agricultural education students who are not FFA members to join. In order to allow involvement of more students, it is recommended that the National FFA Organization

explore the feasibility of an awards program to recognize FFA chapters engaging the greatest percentage of agricultural education students in FFA activities to include all levels (local, state, national).

Appendix A

Questionnaire

RESEARCH PARTICIPANT PARENTAL CONSENT FORM
National Study of Agricultural Education Students
Mark A. Balschweid & B. Allen Talbert, Purdue University, Dept. of Curriculum & Instruction

Purpose of Research

The purpose of this research is to gather information regarding FFA member's perceptions of specific FFA activities and their usefulness to the students' future.

Specific Procedures to be Used **The procedures used will be an electronic questionnaire**

Duration of Participation **Total time for questionnaire is expected to be about 15 minutes**

Benefits to the Individual **No benefits exist for the participant**

Risks to the Individual **The risks are no more than the participant would encounter in everyday life**

Confidentiality

The purpose of this research project is to provide a better understanding of the members of the National FFA Organization and their attitudes towards issues involving their future and what they believe. The answers my son/daughter provide will be kept confidential and special precautions have been established to protect the confidentiality of responses. No names will be used in any data summaries or publications. I may refuse to have my son/daughter answer questions, or stop participating in this questionnaire at any time.

Voluntary Nature of Participation

My son/daughter does not have to participate in this research project. If I agree to allow my son/daughter to participate I can withdraw participation at any time without penalty.

Human Subject Statement:

If I have any questions about this research project, I can contact either Dr. B. Allen Talbert of Dr. Mark Balschweid at 765-494-7290. If I have concerns about the treatment of research participants, I can contact the Committee on the Use of Human Research Subjects at Purdue University, 1071 Hovde Hall Room 307, West Lafayette, IN 47907-1071. The phone number for the Committee's secretary is (765) 494-5942. The email address is irb@purdue.edu.

I HAVE HAD THE OPPORTUNITY TO READ THIS CONSENT FORM AND AM PREPARED TO PARTICIPATE IN THIS PROJECT.

_____ _____
Parent's Signature Date

_____
Parent's Name

_____ _____
Researcher's Signature Date

For this section of questions, please answer using the following scale:
1 = Strongly **D**isagree**, 2 = D**isagree**, 3 = A**gree**, 4 = S**trongly **A**gree

		SD	D	A	SA
1.	When choosing courses, I try to take the most difficult and challenging.	1	2	3	4
2.	I believe the amount of work I do in school now is important to my success later in life.	1	2	3	4
3.	I try to do my best in all of my classes.	1	2	3	4
4.	It is important to me to do my homework before I do other activities.	1	2	3	4
5.	My parents require me to work too much on my schoolwork.	1	2	3	4
6.	My parents don't require me to work enough in my schoolwork.	1	2	3	4
7.	My teachers require me to work too much on my schoolwork.	1	2	3	4
8.	My teachers don't require me to work enough in my schoolwork.	1	2	3	4
9.	The harder I work in school, the more opportunities will be available to me later in life.	1	2	3	4
10.	I will have educational and job opportunities available to me when I graduate from high school.	1	2	3	4
11.	My high school classes are definitely preparing me for the future.	1	2	3	4
12.	My high school classes are very challenging.	1	2	3	4
13.	My high school classes are very interesting.	1	2	3	4
14.	My high school classes are very exciting.	1	2	3	4
15.	My high school classes allow me to openly discuss in class.	1	2	3	4
16.	My agriculture classes are definitely preparing me for the future.	1	2	3	4
17.	My agriculture classes are very challenging.	1	2	3	4
18.	My agriculture classes are very interesting.	1	2	3	4
19.	My agriculture classes are very exciting.	1	2	3	4
20.	My agriculture classes allow me to openly discuss in class.	1	2	3	4

21. What is the greatest motivator for you to continue your education beyond high school. (Check only one)
The most important reason for me attending college or vocational school is _____.

Following the footsteps of someone I admire _____
To getting a job/well-paying job _____
My parents/family expect it or pressure me _____
To gain acceptance from my peers or peer pressures _____
Being independent and living on my own _____
More options becoming available _____
Self-enrichment _____
Social status or acceptance _____
To have the ability to make things better/change things for the better _____

For this section of questions, please answer using the following scale:
1 = **N**ot a **P**roblem for me, 2 = a **Minor Prob**lem for me, 3 = a **Major Prob**lem for me

How much are the following problems for you in high school?	NP	Minor Prob	Major Prob
22. Loneliness or feeling left out	1	2	3
23. Pressure to get good grades	1	2	3

For the next section of questions, please answer using the following scale:

1 = **N**ot **I**mportant, 2 = **S**omewhat **I**mportant, 3 = **I**mportant, 4 = **V**ery **I**mportant

How important are the following courses to you?	**NI**	**SI**	**I**	**VI**
24. Agricultural Education	1	2	3	4
25. Computers	1	2	3	4
26. English	1	2	3	4
27. Foreign Languages	1	2	3	4
28. Government/History/Social Studies	1	2	3	4
29. Mathematics	1	2	3	4
30. Science	1	2	3	4
How important are the following to you in your personal definition of success in life?				
31. Being attractive and popular	1	2	3	4
32. Extended family	1	2	3	4
33. Friendships	1	2	3	4
34. Immediate family	1	2	3	4
35. Make a contribution to society	1	2	3	4
36. Personal development and satisfaction	1	2	3	4
37. Religious/spiritual activities	1	2	3	4
38. Work and career	1	2	3	4

39. Membership in the National FFA Organization (Select one).

    A. Yes, I am a FFA member now or was one last year.
    B. No, I am not a member nor was I one last year.

40. My parents or brothers/sisters were in agricultural education/FFA in school. (Select one).

    A. Yes. Who? (Ex. Dad, sister) _____
    B. No

41. I currently hold the _____FFA degree. (Select one).

    A. Discovery
    B. Greenhand
    C. Chapter FFA
    D. State FFA
    E. American FFA

42. The highest office or committee membership I've held in the FFA is ___. (Select one).

    a. Never held a committee membership or office
    b. Committee member
    c. Committee chair or co-chair
    d. Chapter officer or Junior Chapter officer.
    e. Area/District/Region/Section officer.
    f. State officer.

43. My highest level of participation on a Career Development Event (CDE) team or judging team is _____.

    A. Never participated on a CDE team.
    B. Chapter
    C. Area/District/Region/Section
    D. State
    E. National

44. The highest level I've participated in a Leadership Contest such as public speaking or demonstrations is _____.

    A. Never participated in a leadership contest.
    B. Chapter
    C. Area/District/Region/Section
    D. State
    E. National

45. I have participated in the following leadership events (Select all that apply)

    A. Never participated in a leadership event.
    B. Chapter activities such as officer retreat, district leadership training, state officer chapter visit
    C. State-level events such as leadership camp, leadership workshop, leadership institutes
    D. State FFA Convention
    E. Regional Workshops such as Made for Excellence (MFE), EDGE, Advanced Leadership Development (ALD)
    F. National FFA Convention
    G. Washington Leadership Conference

46. Do you currently have a Production Entrepreneurship SAE (ex. raising an animal or growing crops) Yes No

47. Do you currently have a Placement or Work Experience or Internship SAE (ex. working for a farmer or business) Yes No

48. Do you currently have an Agribusiness Entrepreneurship SAE (ex. lawn care business) Yes No

49. Do you currently have an Agriscience or Experimentation SAE (ex. Conducting experiments on plant growth) Yes No

50. The highest level I have submitted a proficiency award is _____.

    A. Never completed a proficiency award application.
    B. Chapter
    C. Area/District/Region/Section
    D. State
    E. National

51. Who most influenced you to be in **FFA**? (Select only one)

    A. Agriculture teacher
    B. Someone associated with agribusiness
    C. Friend
    D. Other family (siblings, grandparents, extended family)
    E. Parent(s)
    F. Other (please list)_____

52. Who most influenced you to enroll in **agricultural education classes**? (Select one)

    A. Agriculture teacher
    B. Someone associated with agribusiness
    C. Friend
    D. Other family (siblings, grandparents, extended family)
    E. Parent(s)
    F. Other (please list)_____

53. I am _____ years old. (Write in your age as of September 1, 2002)

54. I am in the _____ grade in school. (Write in your grade or year in college)

55. I intend to be in my agricultural education classes for_____this year.

    A. 6 weeks (one rotation)
    B. 9 weeks (one rotation)
    C. 12 weeks (one trimester)
    D. 18 weeks (one semester)
    E. 24 weeks (two trimesters)
    F. 36 weeks (full year)
    G. Not in agricultural education classes this year
    H. I have graduated from high school
    I. Other (ex: home schooling) Please list_____

56. I am _____. (Select one).

    A. male
    B. female

57. I consider my ethnicity as _____. (Select one).

    A. African American (Black)
    B. American Indian (member of a recognized tribe)
    C. Asian American
    D. Caucasian (White)
    E. Hispanic (Latino)
    F. Multiracial (two or more of the above)

58. There are _____ people including myself living in my house. (Write number).

59. I live _____. (Select one).

    A. On a farm. _____ % of my family's income comes from the farm (Write 1-100)
    B. in a rural area
    C. in an urban area (area has subdivisions, many stoplights, lots of stores)
    D. in a city (area has very little open space except for parks, one or more shopping malls, is one of the most populated areas of the state)

60. For this school year, I receive free or reduced lunch. (Select one).

    Yes No

61. I am currently a 4-H member. (Select one).

    A. Yes
    B. No, but I used to be a 4-H member.
    C. No, I've never been a 4-H member.

62. My overall grade point average in school is _____ out of _____ (Ex. 2.25 out of 4.0).

63. I participate in _____ number of sports during a school year. (Write number).

64. I am in _____ number of clubs not counting FFA and 4-H in school during a complete school year. (Write number).

65. I am a member of a church-related youth group. (Select one).

    Yes No

66. During the 2001-02 school year, I held a job for which I was paid (Select one).

    Yes No

67. For the 2002-03 school year, I plan to hold a job for which I will be paid (Select one).

    Yes No

68. During the 2001-02 school year, I volunteered my time at a not-for-profit agency such as Humane Society, Habitat for Humanity, Red Cross, Hospital. (Select one).

    Yes No

69. After high school, I plan to (Select only one).

    A. Attend four-year college or university (part-time or full-time)
    B. Attend two-year college (part-time or full-time)
    C. Attend a training or vocational school (part-time or full-time)
    D. Get a full-time job
    E. Get married (do not plan to work outside the home)
    F. Join the armed forces

70. After completing my education and/or vocational training, I plan for my career to be in the area of (Select only one)

A. Agricultural and Natural Resources
Ex: Food Scientist, Veterinarian, Agriculture Teacher, Game Warden

B. Arts, Audio-Video Technology, Communications
Ex: Actor, Journalist, Video Producer

C. Business and Administration
Ex: Accountant, Business Owner, Secretary

D. Education and Training
Ex: Teacher, Principal, Guidance Counselor, College Professor

E. Finance
Ex: Stock Broker, Banker, Insurance Agent

F. Health Sciences
Ex: Doctor, Radiologist, Physical Therapist, Pharmacist

G. Hospitality and Tourism
Ex: Hotel Manager, Restaurant Manager, Chef, Tour Guide

H. Human Services
Ex: Social Worker, Psychologist, Drug Treatment Counselor

I. Information Technology
Ex: Software Engineer, Web Designer, Network Administrator

J. Law and Public Safety
Ex: Attorney, Police Officer, Paramedic

K. Manufacturing
Ex: Machinist, Welding Technician, Manufacturing Engineer

L. Government and Public Administration
Ex: Legislator, City Manager, State/Federal Agency Director

M. Retail or Wholesale Sales and Service
Ex: Sales Associate, Marketing Director, Real Estate Broker

N. Scientific Research, Engineering
Ex: Chemical Engineer, Mathematician, Oceanographer

O. Transportation, Distribution, & Logistics
Ex: Pilot, Truck Driver, Warehouse Manager

P. Architecture and Construction
Ex: Contractor, Electrician, Heavy Equipment Operator

Appendix B

Bibliography

Connors, J., Moore, E., & Elliot, J. (1990). Factors influencing secondary Michigan agricultural students' decisions not to join the FFA. The 16th Annual Proceedings of the National Agricultural Education Research Meeting: Cincinnati, Ohio, 27, 19-26.

Gliem, J., & Gliem, R. (1999). Using multivariate analysis techniques to identify factors influencing FFA membership in high school agricultural education programs. Proceedings of the 26th Annual National Agricultural Education Research Conference: Orlando, Florida, 136-146.

A Guide to Local Program Success. (1997). Alexandria, VA: National Council for Agricultural Education.

Hoover, T. S., & Scanlon, D. C. (1991). Recruitment practices: A national survey of agricultural educators. Journal of Agricultural Education, 32 (3), 29-34,b.

Horatio Alger Association of Distinguished Americans. (1999). The state of our nation's youth 1999-2000 [On-line]. Available http://www.horatioalger.com

Keith, L. (1998). The value of 4-H competitive activities as perceived by the parents of 4-H members. Journal of Agricultural Education, 39 (3), 41-50.

Lockaby, J. (1998). Teaching values in agricultural education. Proceedings of the 17th Annual Western Region Agricultural Education Research Meeting: Salt Lake City, Utah, 166-177.

Marshal, T., Herring, D., & Briers, G. (1992). Factors associated with enrollment in agricultural science and membership in the FFA in Texas. Journal of Agricultural Education, 33(4), 17-23.

Official FFA Manual. (1998-99). Indianapolis, IN: The National FFA Organization.

Phipps, L. J., & Osborne, E. W. (1988). Handbook on agricultural education in public schools. The Interstate Printers and Publishers, Inc., Danville, Illinois.

Stagg, B., & Staller, B. (1999). Will FFA be a part of agricultural education in twenty years? The Agricultural Education Magazine, 71 (5), 1, 19.

Turner, J., & Herren, R. V. (1997). Motivational needs of students enrolled in agricultural education programs in Georgia. Journal of Agricultural Education, 38 (4), 30-41.