Influences on Students Choosing Majors in Agriculture

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University of Missouri

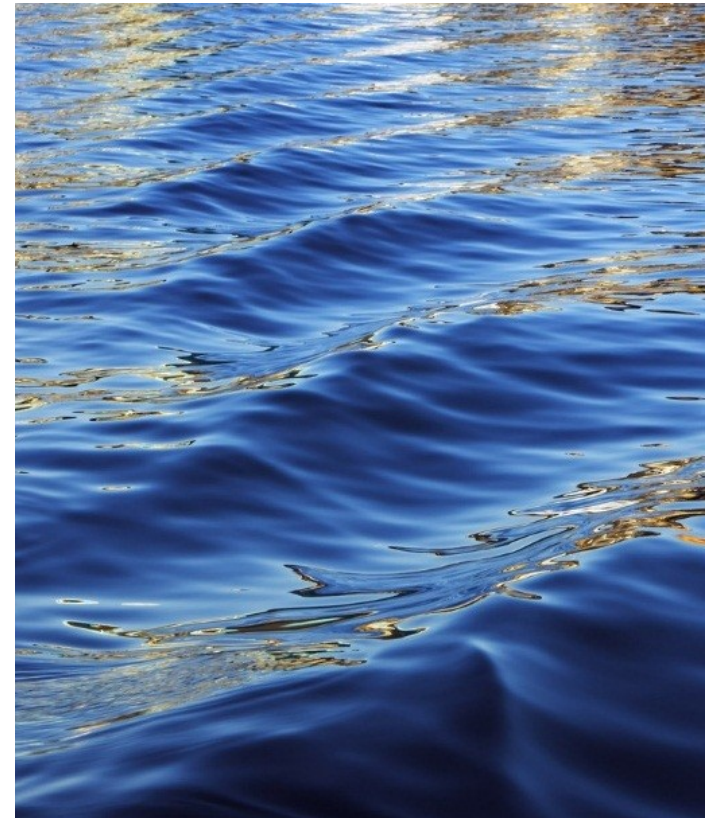**Linda Okiror, Ph.D.**
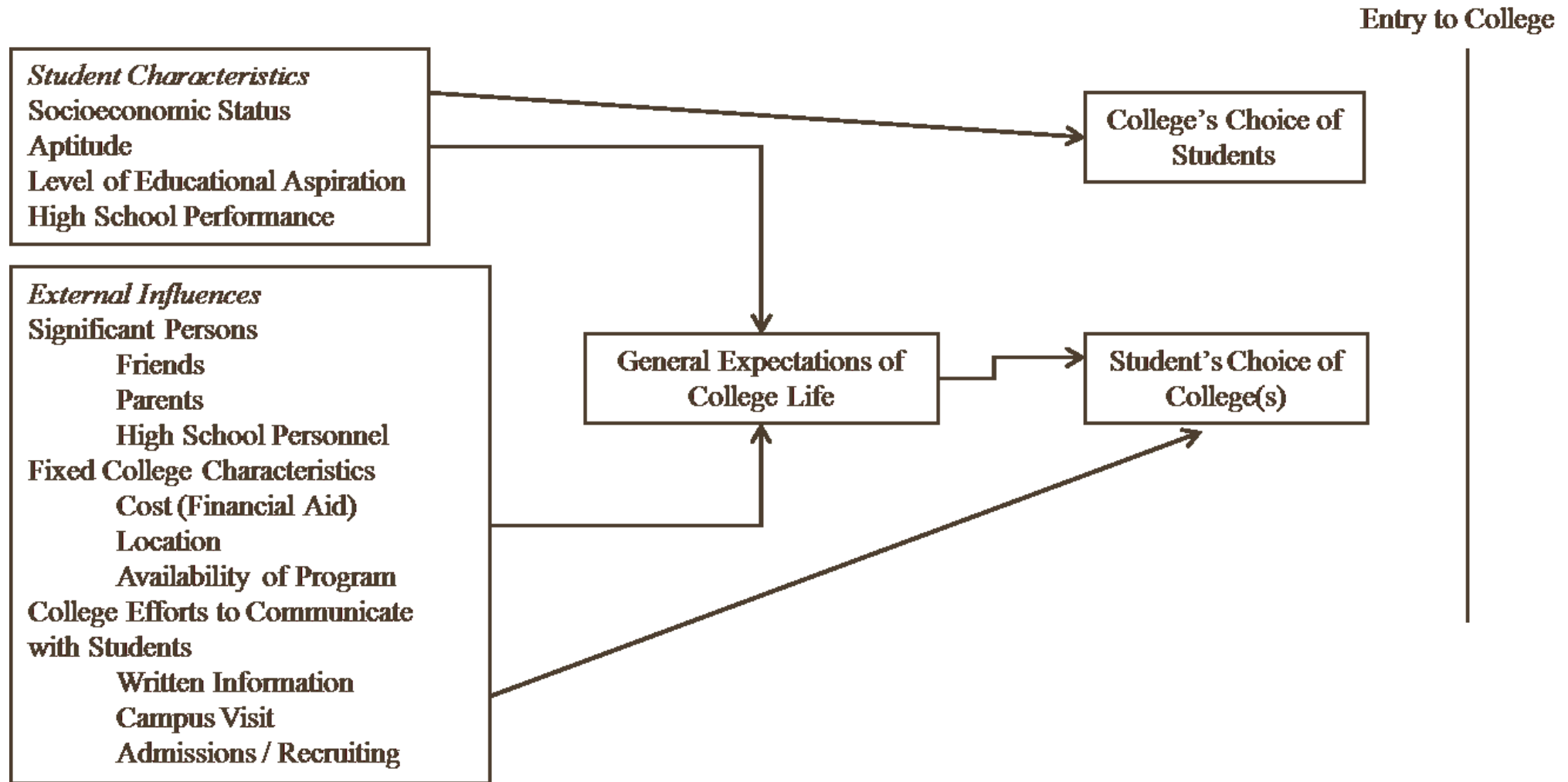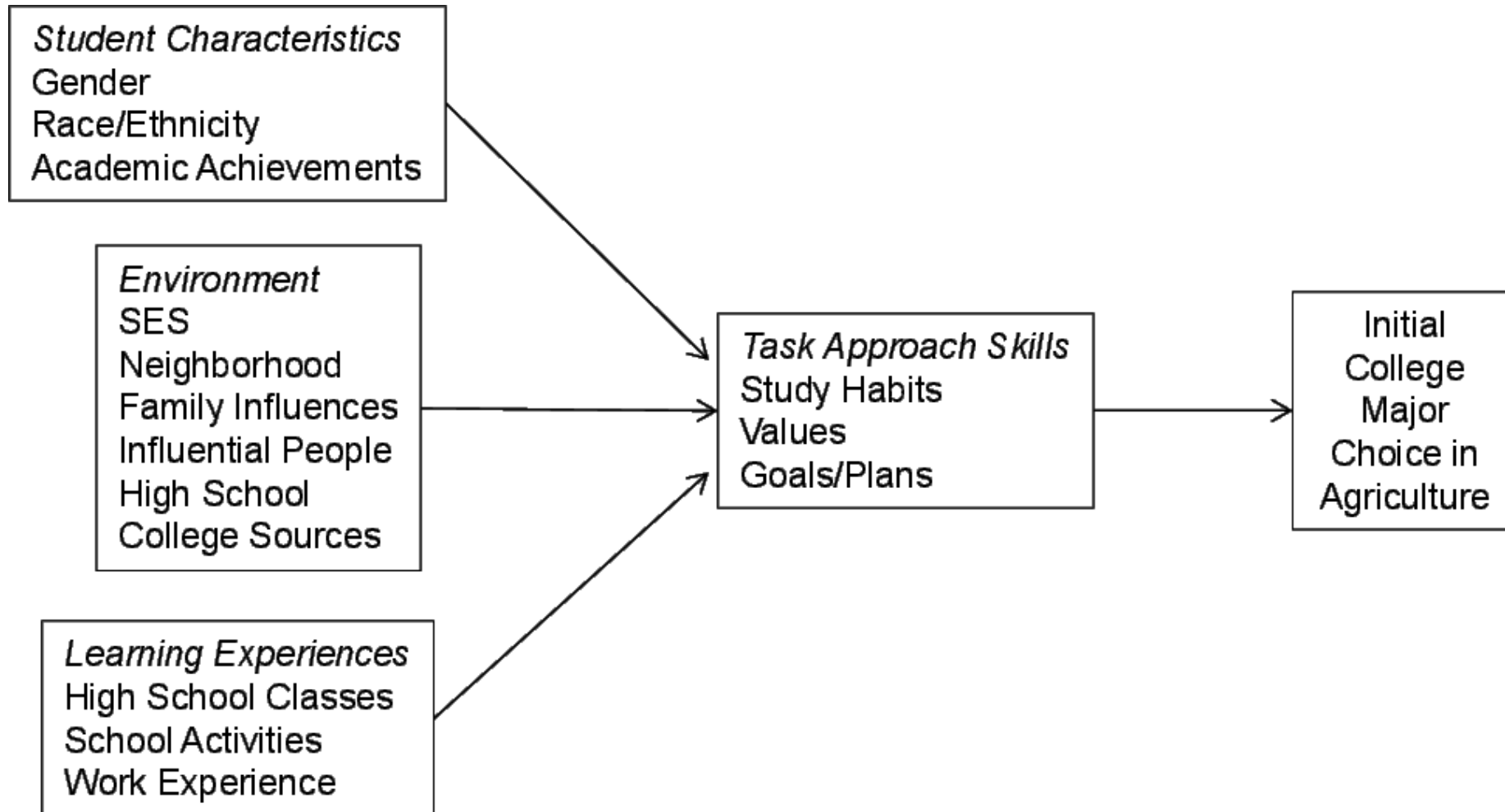University of Arkansas at Pine Bluff

Figure 2.3. Influences on student college choice (Chapman, 1981)

Entry to College

Student Characteristics
Socioeconomic Status
Aptitude
Level of Educational Aspiration
High School Performance

External Influences
Significant Persons
    Friends
    Parents
    High School Personnel
Fixed College Characteristics
    Cost (Financial Aid)
    Location
    Availability of Program
College Efforts to Communicate
with Students
    Written Information
    Campus Visit
    Admissions / Recruiting

College's Choice of Students

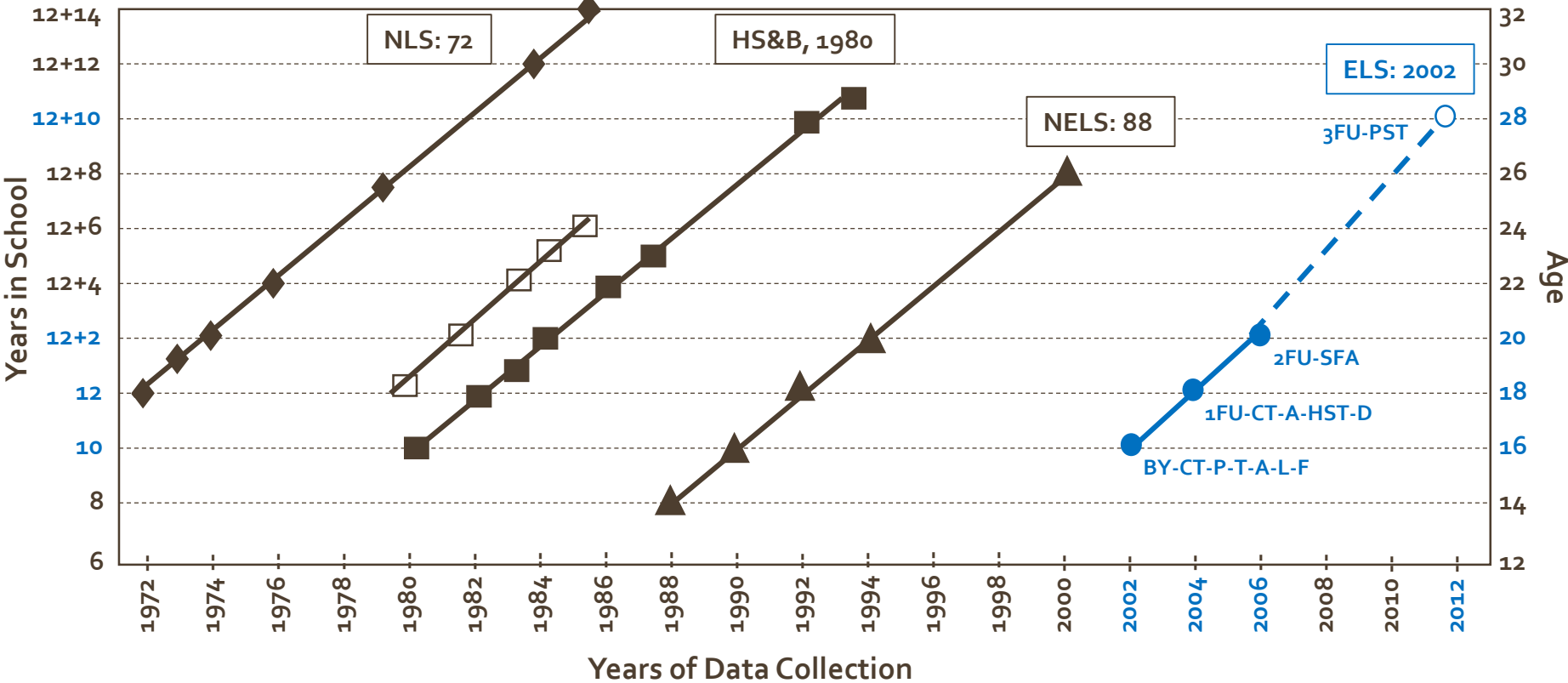General Expectations of College Life

Student's Choice of College(s)

Research Question

How well does the adapted study model from Krumboltz's Social Learning Theory of Career Decision Making explain student field of study choice in agriculture, environment, and food sciences?

Figure 3.1. Theoretical model of the influences on students choosing majors in agriculture

Student Characteristics
Gender
Race/Ethnicity
Academic Achievements

Environment
SES
Neighborhood
Family Influences
Influential People
High School
College Sources

Learning Experiences
High School Classes
School Activities
Work Experience

Task Approach Skills
Study Habits
Values
Goals/Plans

Initial College Major Choice in Agriculture

Education Longitudinal Study 2002, ELS:2002

Selected Variables from ELS: 2002

Student Characteristics

- Sex of student (BYS14)

- Student race/ethnicity (BYS17)

- Student is Hispanic (BYS15)

- GPA for all academic courses (F1RAGP)*

Environment

- Mother's (BYS81AR) and father's (BYS82AR) occupation

- Mother's (BYS83A) and father's(BYS83B) highest level of education

- How far in school mother (BYS65A) and father (BYS65B) wants 10th grader to go

- Total family income from all sources 2001 (BYP85)

- School type/ region by urbanicity (BYREGURB)

- Has gone to teacher for college entrance information (BYS59B)

- Has gone to parent for college entrance Information (BYS59D)

- How often discussed going to college with parents (BYS86G)

Selected Variables from ELS: 2002

Learning Experiences

- Participated in voc/tech skills competition (BYS23F)

- Participated in coop-education (BYS71A)

- Years of biology coursework (F1S16C)

- Participated in school vocational clubs (BYS41I)

- High school program-student self-report (BYS26)

Task Approach Skills

- Importance of good grades to student (BYS37)

- How far in school student thinks will get (BYS56)

- Importance of having lots of money (BYS54C)

- Importance of being able to find steady work (BYS54E)

- How much education respondent thinks will be needed for job at age 30 (F1S58)

Exploratory Factor Analysis

	STU GO	LRNEXP	PT GO	PT ED	IN PPL
Importance of good grades to student (BYS37)	.60				
How far in school student thinks will get (BYS56)	.55				
How much education respondent thinks will be needed for job at age 30 (F1S58)	.63				
GPA for all academic courses (F1RAGP)	.52				
Importance of being able to find steady work (BYS54E)					
Participated in voc/tech skills competition (BYS23F)		1.00			
Participated in school vocational clubs (BYS41I)		.70			
How far in school mother wants 10th grader to go (BYS65A)			1.04		
How far in school father wants 10th grader to go (BYS65B)			.56		
Mother's highest level of education (BYS83A)				.51	
Father's highest level of education (BYS83B)				1.01	
How often discussed going to college with parents (BYS86G)					.40
Has gone to teacher for college entrance info (BYS59B)					.48
Has gone to parent for college entrance info (BYS59D)					.52

Figure 4.1. Confirmatory factor analysis model

Metric	Observed value	Recommended
cmin/df	2.26	Between 1 and 3
CFI	0.88	>0.95
RMSEA	0.08	<0.06
PCLOSE	0.00	>0.05

CFA model fit with limited sample size (n=205)

Metric	Observed value	Recommended
cmin/df	2.41	Between 1 and 3
CFI	0.94	>0.95
RMSEA	0.06	<0.06
PCLOSE	0.13	>0.05

CFA model fit with expanded sample size (n=403)
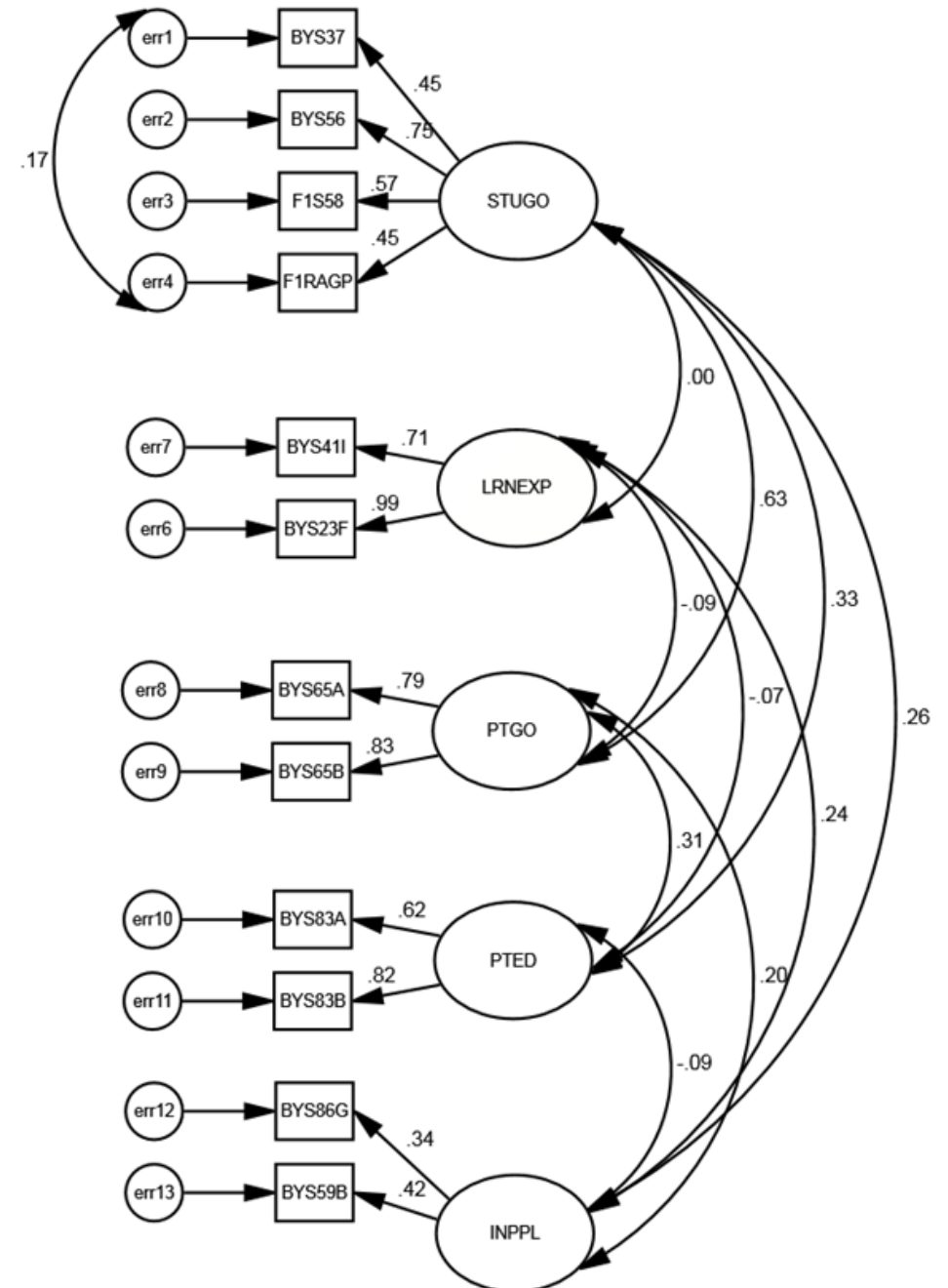
- Food Science
- Nutrition Sciences
- Botany/Plant Biology, Other
- Conservation Biology
- Natural Resources
- Environmental Science
- Aquaculture
- Animal Science, Veterinary
- Plant ,Soil, Landscape, Forestry
- Agribusiness - Operations, Int'l

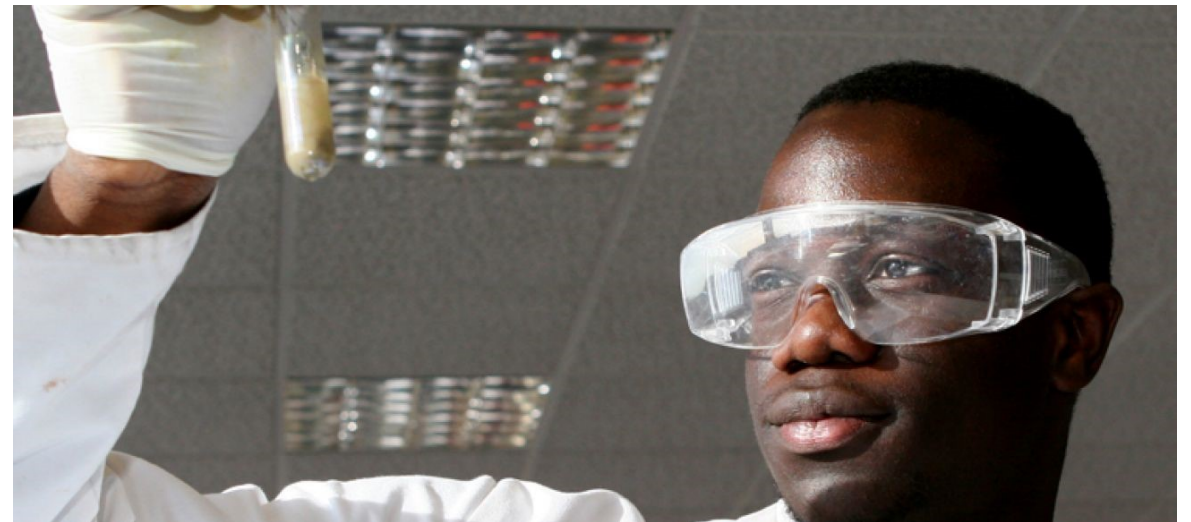**Examples of agriculture, environment, and food science majors**

Figure 4.2. SEM model fit from CFA

Metric	Observed value	Recommended
cmin/df	2.41	Between 1 and 3
CFI	0.94	>0.95
RMSEA	0.06	<0.06
PCLOSE	0.13	>0.05
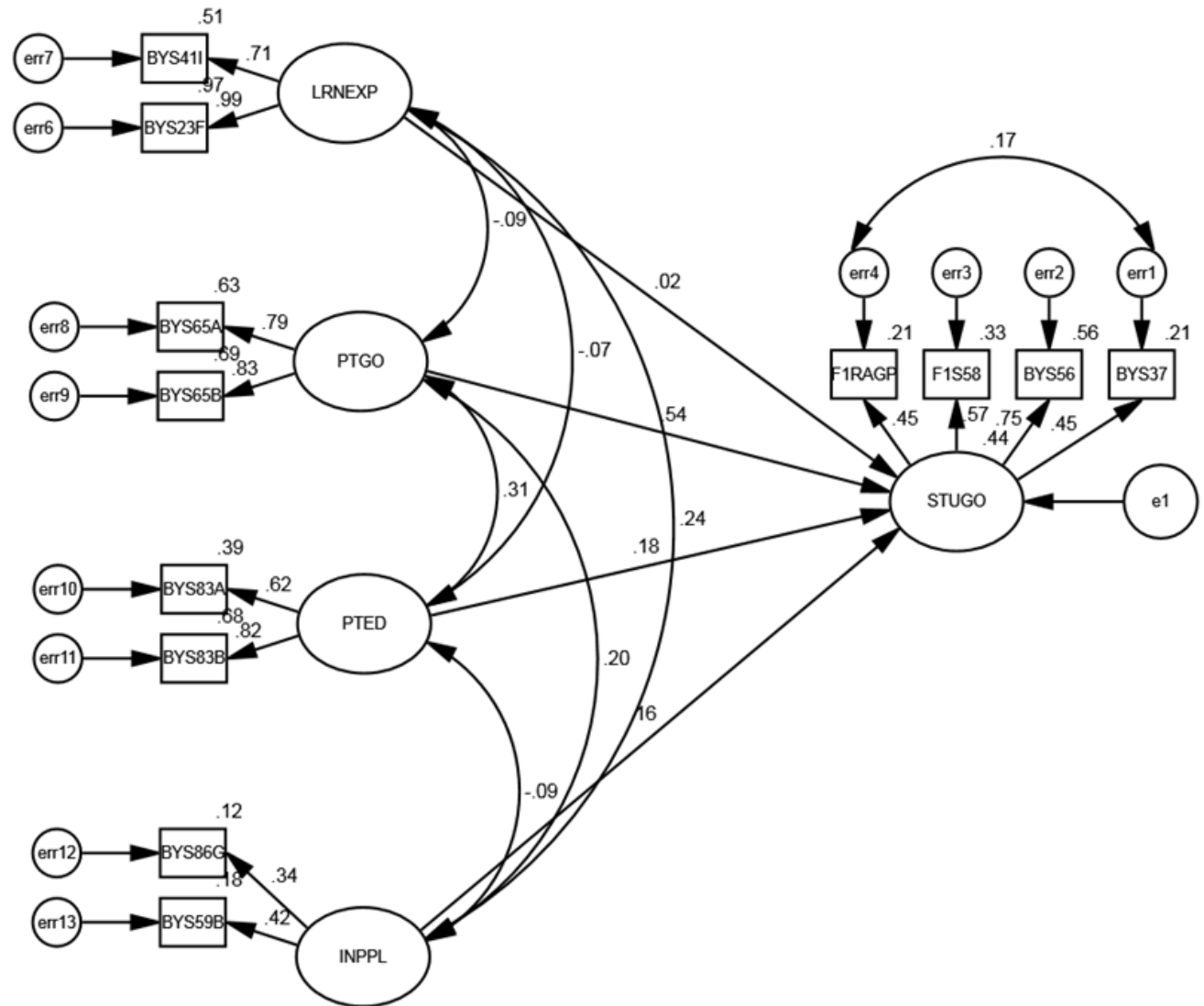
Figure 4.3. Model fit with student characteristics and field of choice

Metric	Observed value	Recommended
cmin/df	2.09	Between 1 and 3
CFI	0.91	>0.95
RMSEA	0.05	<0.06
PCLOSE	0.35	>0.05
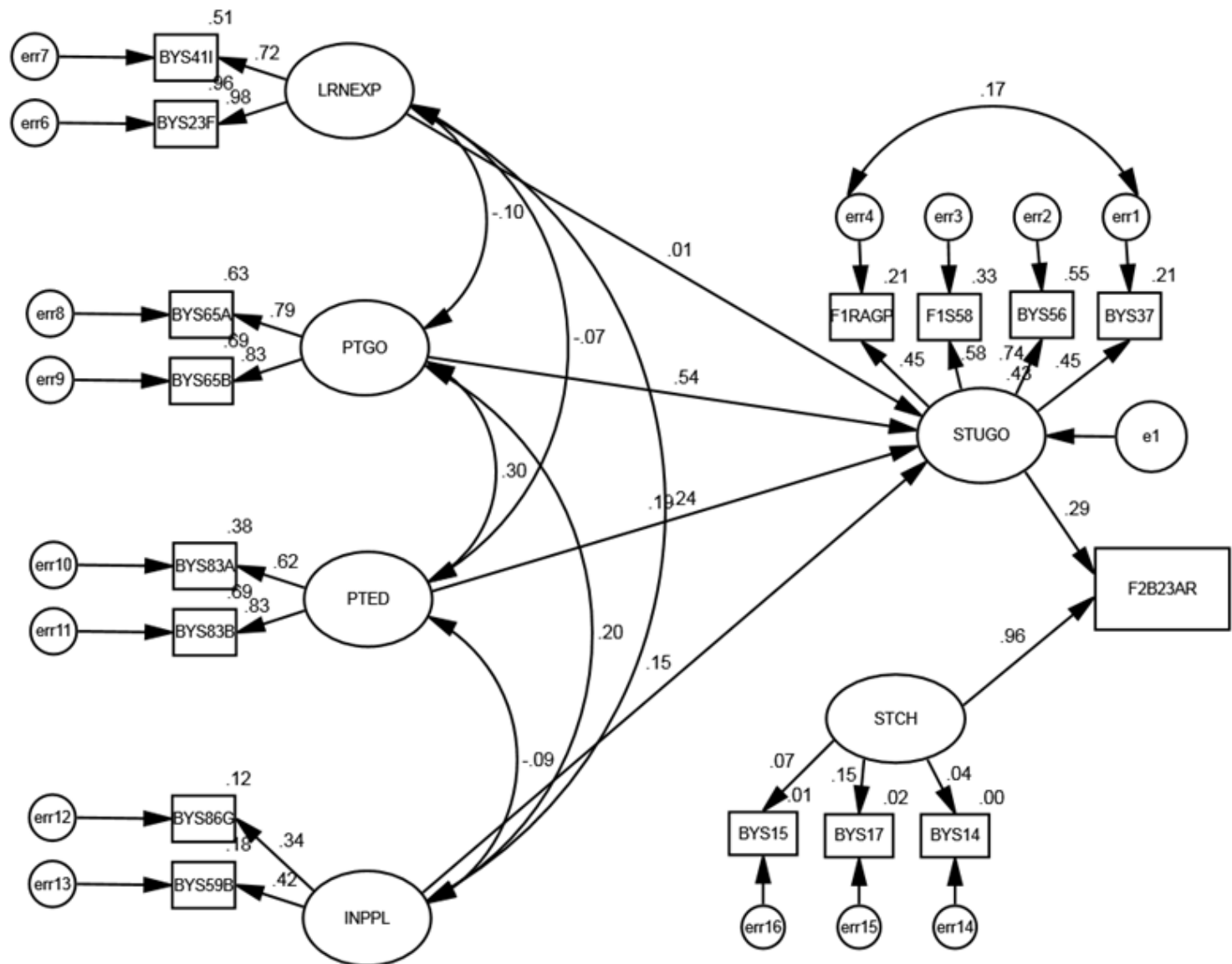
Research Question

How well does the adapted study model from Krumboltz's Social Learning Theory of Career Decision Making explain student field of study choice in agriculture, environment, and food sciences?

Agricultural Student Choice Model

- **Revised from four SLTCDM constructs to six constructs**
- Vocational learning experiences
- Education
- Parents

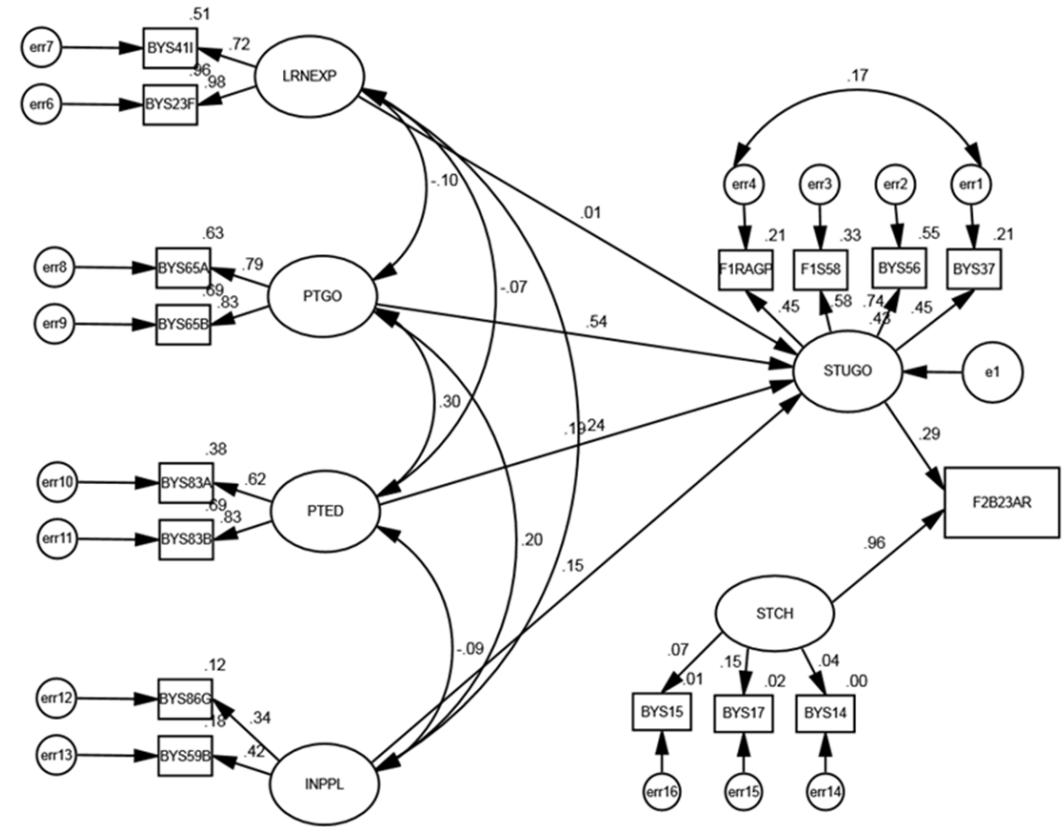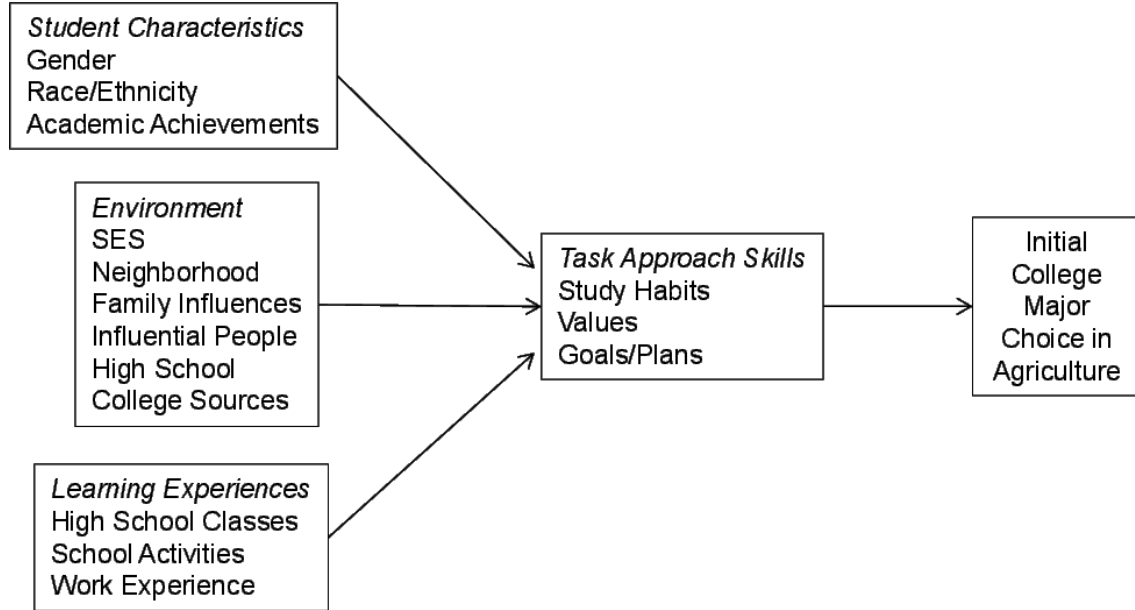# Proposed study model and agricultural student choice model

Table 5.1. Original and revised model constructs

Adapted study model from Krumboltz's Social Learning Theory of Career Decision Making (1996)	Agricultural choice model
Student characteristics	Student characteristics
Environment	Parent goals Parents' education Influential people
Learning experiences	Learning experiences
Task approach skills	Student goals

Agricultural Student Choice Model

- Vocational learning experiences
  - Participated in voc/tech skills competition (BYS23F)
  - Participated in school vocational clubs (BYS41I)
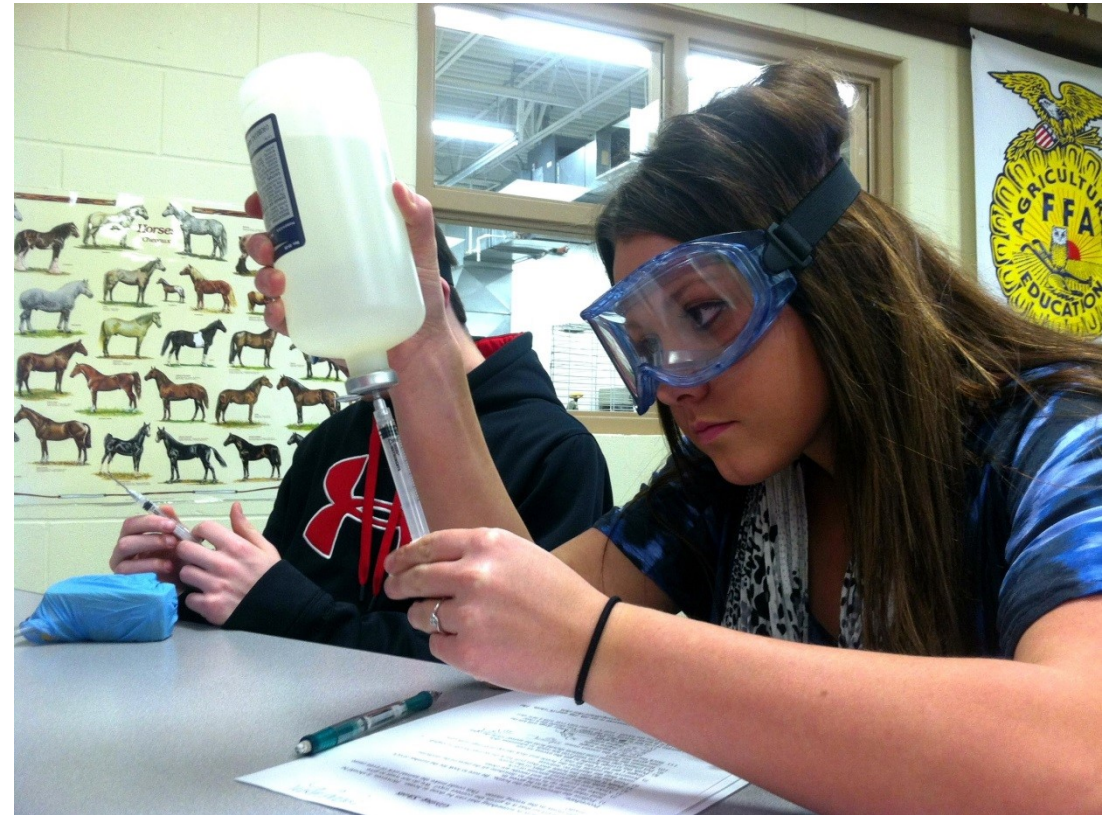
Agricultural Student Choice Model

- Education
  - Importance of good grades to student (BYS37)
  - How far in school student thinks will get (BYS56)
  - How much education respondent thinks will be needed for job at age 30 (F1S58)

Agricultural Student Choice Model

- Parents
  - Hossler, Braxton, Coopersmith (1989) – strong association with parental encouragement, parent education, learning experiences, academic ability, and students' aspirations
  - Weak association with gender, ethnicity, SES, and neighborhood

Recommendations for Future Research

- Influence of parents' experiences outside of occupation and education
- Influence of 4-H and FFA programs and advisors

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Dissertation
Doctor of Education in Higher Education