

# Factors Influencing Students' Choice to Major in Agriculture

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# Introduction & Need for the Study

- ❧ Between 2015 and 2020, an average of 57,900 agriculturally related job openings each year - only an average of 35,400 college graduates with expertise to fill those positions (Goecker, Smith, Fernandez, Ali, & Theller, 2015).
- ❧ Approximately one-third of jobs available in agriculture will be filled by individuals not trained in agriculture (Zoldoske, 1996).
- ❧ Research is needed to understand how to secure well-trained professionals in the area of agriculture and applied sciences. It is important to understand **what attracts individuals to study agriculture** on a collegiate level.



# Literature Review

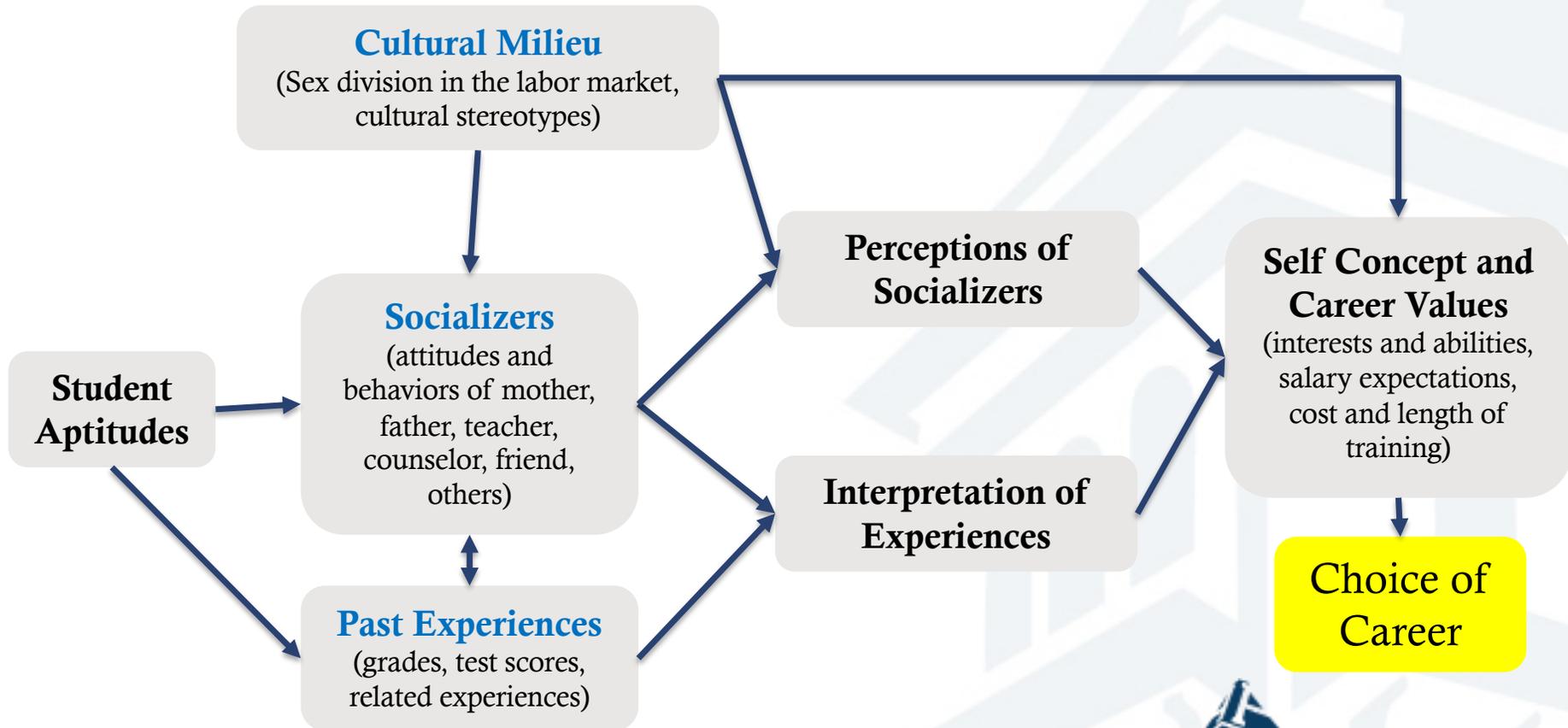
- ∞ Dick and Rallis (1991) first conceptualized the Social Cognitive Career Theory to test for choice of career.
  - ∞ Outcome expectations, self-efficacy, and personal goals are the three main cognitive functions that mold career selection in the Social Cognitive Career Theory (Lent, Brown, & Hackett, 2002; Lent, 2005).
  - ∞ Personal goals are defined as “one’s intentions to engage in certain activity or to generate a particular outcome” (Lent, 2005).
  - ∞ Primary learning experiences that shape an individuals' self-efficacy expectations: personal performance accomplishments, social persuasion, vicarious learning, and physiological and affective states (Bandura, 1977; Borgen & Harmon, 1996).
- ∞ Dick and Rallis (1991) provide inputs for self concept and career values:
  - ∞ **Cultural Milieu**
  - ∞ **Socializers**
  - ∞ **Past Experiences**



# Theoretical Framework

## Model of Career Choice

(Dick & Rallis, 1991)



# Literature Review

## ☞ Cultural milieu

- ☞ Cultural background influences both career decision-making style and career decision-making self efficacy of the student (Mau, 2000).

## ☞ Socializers

- ☞ Parents influence student attitudes related to their abilities (Parsons, Adler, & Kaczala, 1982).
- ☞ Students that perceived themselves as more able in math and science also reported a higher amount of social support in the subject areas of math and science (Rice, Barth, Guadagno, Smith, & McCallum, 2012).

## ☞ Past experiences

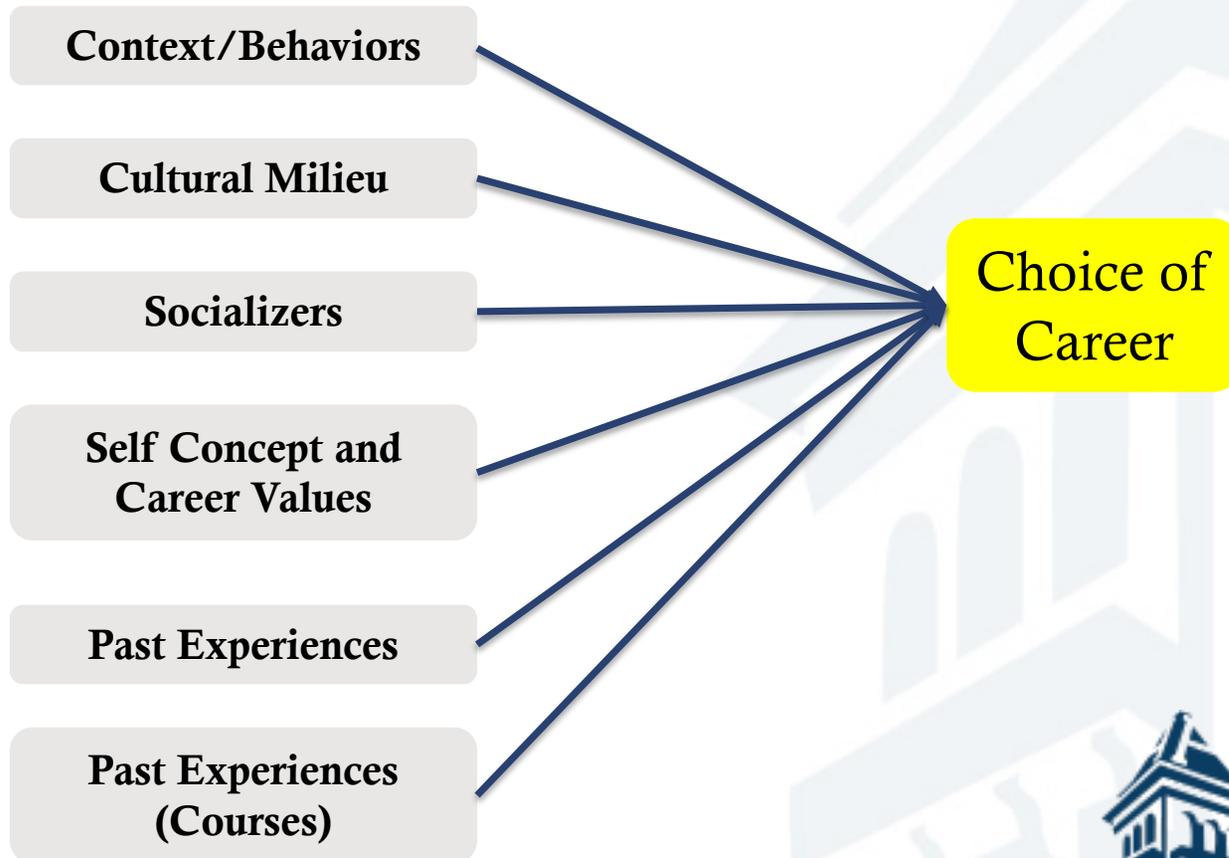
- ☞ Internships were found to lead to career-oriented employment (Callanan & Benzing, 2004).



# Conceptual Framework

## Model of Career Choice

(Dick & Rallis, 1991)



# Purpose and Research Objectives

1. Describe the behaviors and attitudes of students in choosing a major in agriculture (when, major change, confidence in decision).
2. Describe the factors (socializers, past experiences, self concept, career values) influencing students' choice in major in agriculture.

## Purpose:

- ☞ Determine the factors influencing students' decision to major in agriculture



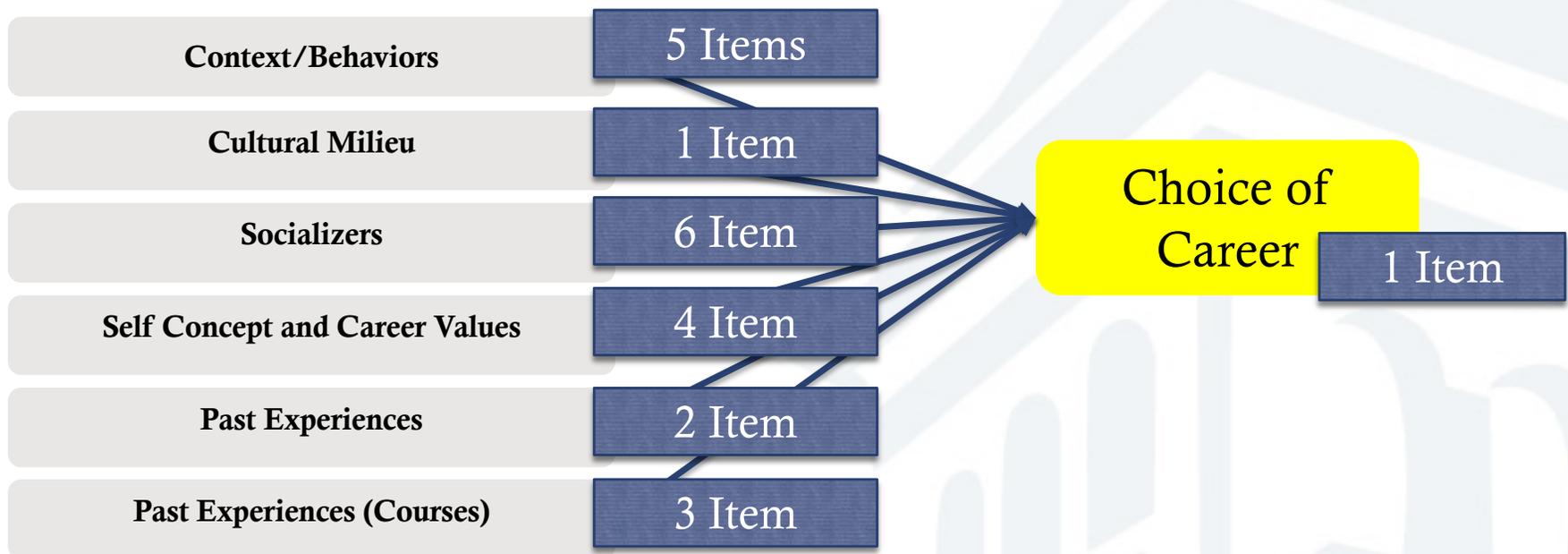
# Participants & Data Collection

- ∞ Quantitative Survey Methods
- ∞ Initial population of approximately 1800 students
- ∞ Random sample of 580 students in the College of Agriculture and Applied Sciences during Spring 2016 semester provided by Dean's office
- ∞ Dillman's (2007) Tailored Design Methods
- ∞ 284 usable surveys were collected, 48.96% response rate



# Instrumentation

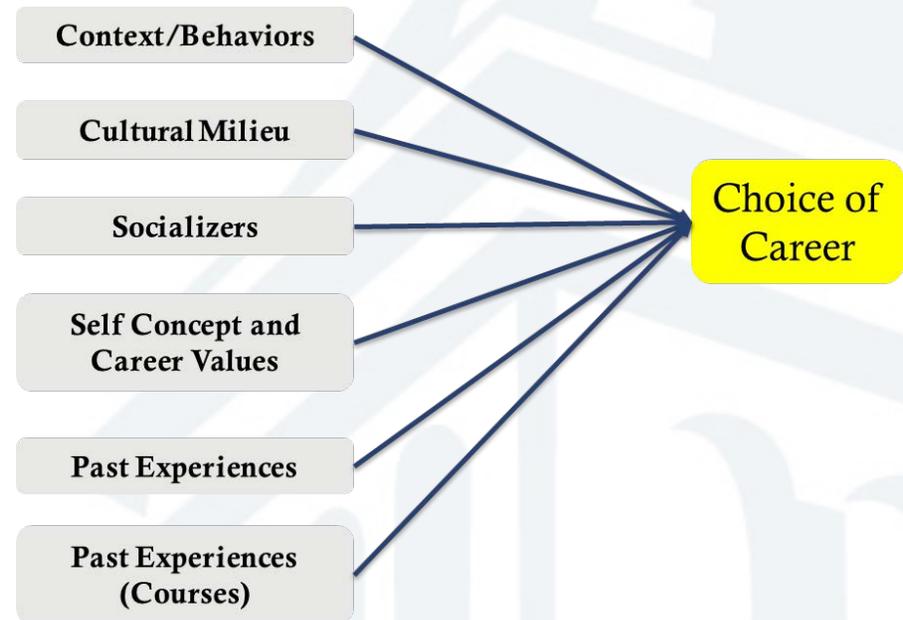
- ∞ The survey was researcher developed, based on Dick and Rallis' (1991) survey.
- ∞ Consisted of questions related to:



- ∞ Statements set on a 6-point scale of 1 (*strongly disagree*) to 6 (*strongly agree*)
- ∞ Content and Face Validity by a panel of experts in College of Agriculture and Applied Sciences at USU
- ∞ Instrument reliability: Pilot test (Cronbach's  $\alpha = .85$ ) and post-hoc (Cronbach's  $\alpha = .88$ )

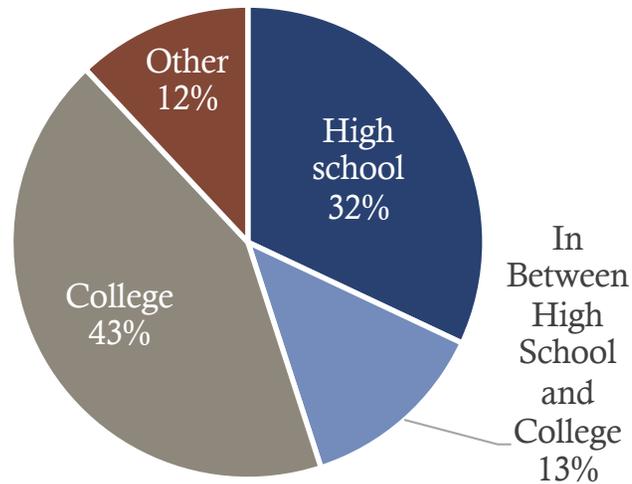
# Data Analysis

- ☞ Checked for response bias and found none
- ☞ Descriptive and correlational analysis (frequency and percentages, *t*-tests, and correlations)
  - ☞ Intention to pursue a career that matches their major = Choice of Career
- ☞ Aggregated data into agree and disagree for ease of reporting and analysis



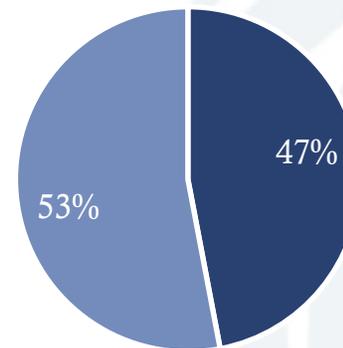
# Context/Behaviors

Decided On College Major



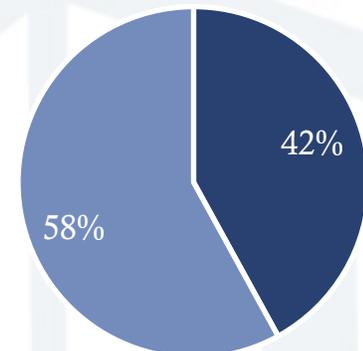
Changed Major At Least Once

■ Yes ■ No



Changed Major From Different College

■ Yes ■ No



☞ Participants overwhelmingly felt their major was preparing them for their future career (97% agree) and were confident in the job opportunities available in the field of their current major (94% agree).

# Context/Behaviors



☞ Have you ever changed your major? (Yes/No)

☞  $t(276) = -1.968, p = .050$

☞ Cohen's  $d = .24$ , small effect size

☞ Those that change their major are less likely to pursue a career matching their current major in agriculture.

☞ Did you begin college with a major in the College of Agriculture and Applied Sciences? (Yes/No)

☞  $t(276) = .621, p = .245$

☞ Not significant

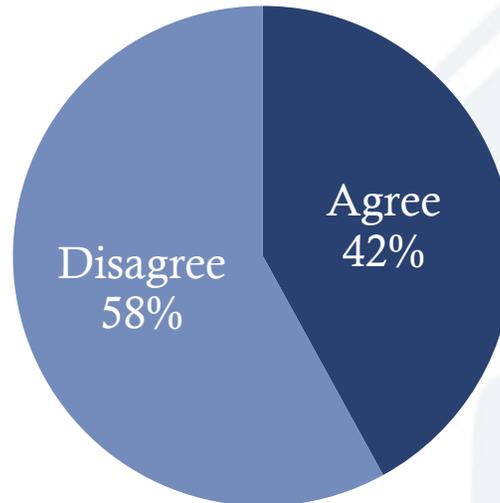
☞ When did you decide on your current major within the College of Agriculture and Applied Sciences? (ANOVA)

☞  $F(8, 269) = 1.757, p = .086$

☞ Not significant

# Cultural Milieu Level of Agreement

My parents' profession greatly influenced my college major decision.



# Cultural Milieu



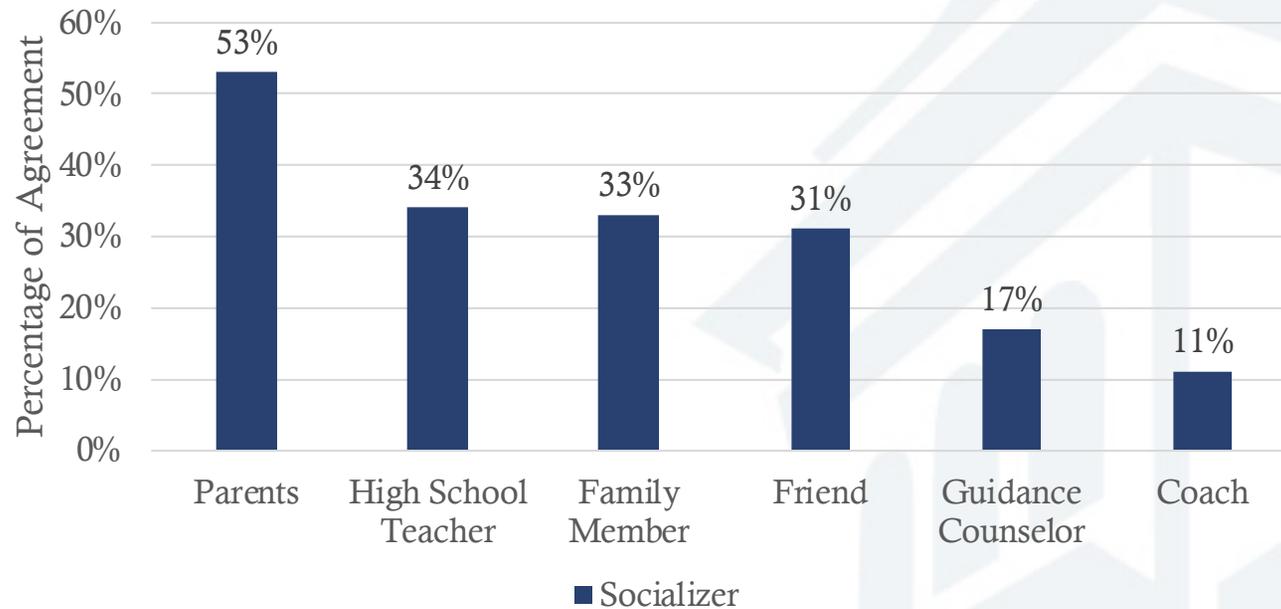
	Correlations	
	1	2
1. I plan on pursuing a career that matches my current major.	1	
2. My parents' profession greatly influenced my college major decision.	-.067	1

🔗 **Summary:** Parent's profession was not statistically significant in influencing the student's choice to pursue a career that matches their major in the College of Agriculture and Applied Sciences.

# Socializers

## Level of Agreement

Most Influential in Students' Choice of Major



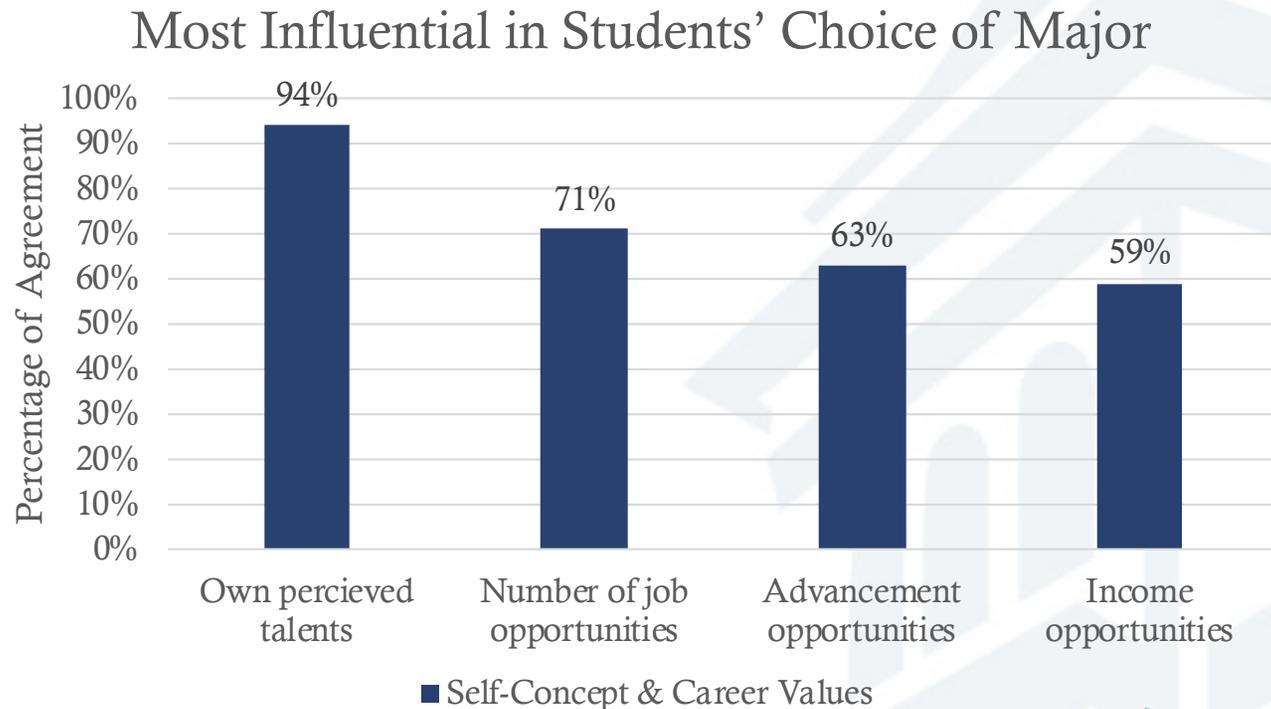
# Socializer Significance



	Correlations							
	1	2	3	4	5	6	7	8
1. I plan on pursuing a career that matches my current major.	1							
2. A parent greatly influenced my college major decision.	-.084	1						
3. A friend greatly influenced my college major decision.	-.110	.286**	1					
4. Another family member (besides a parent) greatly influenced my college major decision.	-.129*	.447**	.474**	1				
5. A teacher in high school greatly influenced my college major decision.	.072	.195**	.281**	.264**	1			
6. A guidance counselor greatly influenced my college major decision.	-.174**	.312**	.297**	.300**	.325**	1		
7. A coach greatly influenced my college major decision.	-.038	.225**	.174**	.221**	.314**	.427**	1	

🌀 **Summary:** When choice of major was influenced by guidance counselors and other family members, students were significantly less likely to pursue a career that matches their current major in Agriculture.

# Self-Concept & Career Values Level of Agreement



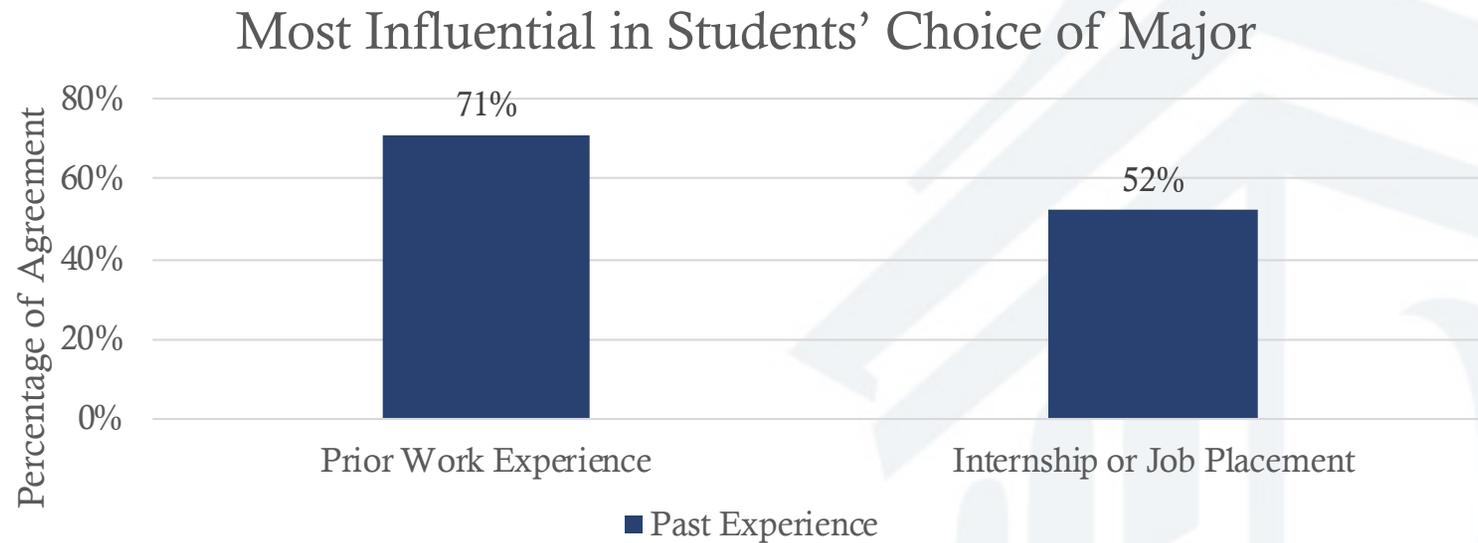
# Self- Concept & Career Value Influence on Career Choice



	Correlations					
	1	2	3	4	5	6
1. I plan on pursuing a career that matches my current major.	1					
2. Future income opportunities greatly influenced my college major decision.	-.110	1				
3. Future advancement opportunities greatly influenced my college major decision.	-0.76	.505**	1			
4. The potential number of job opportunities greatly influenced my college major decision.	-.028	.506**	.574**	1		
5. My personal talents greatly influenced my college major decision.	.187**	.194**	.201**	.267**	1	

🔗 **Summary:** Personal talents and confidence in job opportunities are positive and significant influencers of pursuing a career in agriculture.

# Past Experiences Level of Agreement



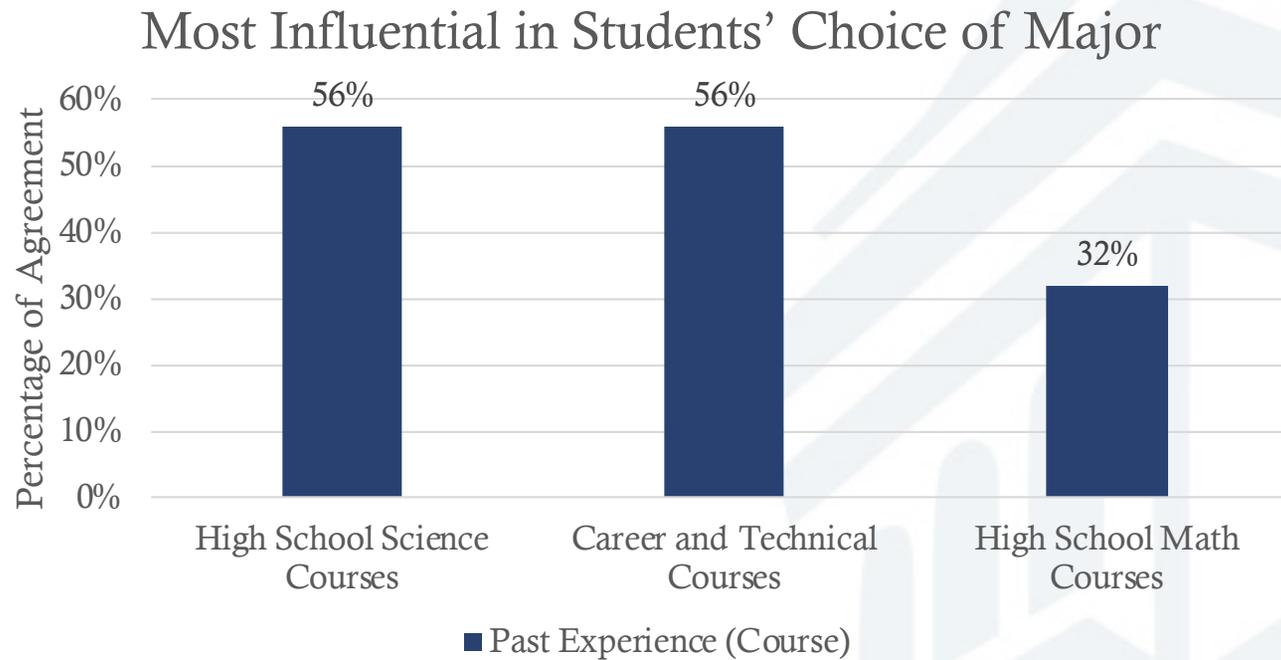
# Past Experience Influence on Career Choice



	Correlations			
	1	2	3	4
1. I plan on pursuing a career that matches my current major.	1			
2. An internship or job placement greatly influenced my college major decision.	.031	1		
3. My prior work experience greatly influenced my college major decision.	.120*	.381**	1	

🌀 **Summary:** Prior work experience significantly positively influenced students career pursuit in agriculture.

# Past Experience (Course) Level of Agreement



# Past Experience (Courses) Influence on Career Choice



	Correlations				
	1	2	3	4	5
1. I plan on pursuing a career that matches my current major.	1				
2. Science courses I took in high school greatly influenced my college major decision.	-.016	1			
3. Math courses I took in high school greatly influenced my college major decision.	-.119*	.542**	1		
4. Career and Technical courses (e.g. Business, Agriculture, Family and Consumer Science) I took in high school greatly influenced my college major decision.	.046	.302**	.174**	1	

Summary: Students who indicated that math courses were influential in their choice of major are significantly less likely to pursue a career based on their major in the College of Agriculture and Applied Sciences.

# Conclusions & Implications

## ☞ *Context / Behaviors*

- ☞ Almost half of students did not decide on major until after being in college and change major at least once
- ☞ Consistent with other research (USDE, NCES, 2012)
  - ☞ Implications for when to recruit and make yourself available

## ☞ *Socializers*

- ☞ Parents most influential socializer
  - ☞ Implications for high school teachers of agriculture to develop those relationships with parents



# Conclusions & Implications

## ☞ *Self Concept and Career Value*

- ☞ Talents/job opportunities more influential than advancement/income potential
  - ☞ Implications for helping students develop and see their talents and matching them to careers (CTE courses), as well as showing students AFNR job opportunities

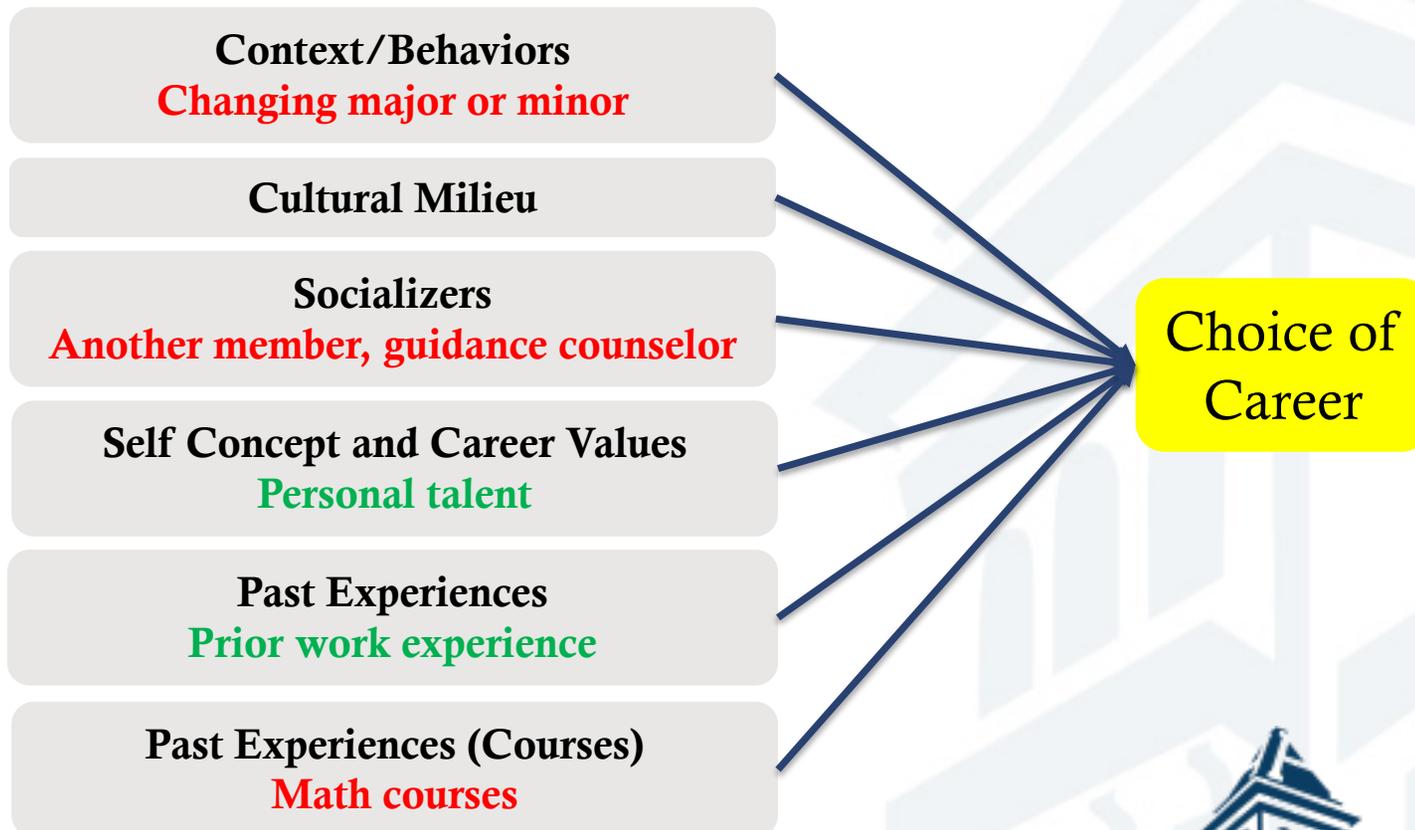
## ☞ *Past Experiences*

- ☞ High school CTE and science courses were most influential courses
  - ☞ Implications for continuing to promote these at the secondary level
- ☞ Prior work experience and internships
  - ☞ Implications for high school and college teachers of agriculture to provide work experiences or internship opportunities for students in agriculture



# Conclusions

∞ Significant influencers of pursuit of career in agriculture:



# Recommendations for Practice

## **At the Secondary Level:**

- ∞ Get more students in science and CTE courses
- ∞ High school agriculture teachers should talk more with parents about careers of their students

## **At the College Level:**

- ∞ Findings suggest student recruitment efforts should continue well into the students' college career
  - ∞ Message need not be so much about advancement and income potential but more about matching talents and showing the job opportunities in agriculture
- ∞ College teachers should provide more internship opportunities for students in agriculture



# Recommendations for Research

- ∞ Major limitation: surveying college students versus those in the field.
  - ∞ Research is needed with those already working in agricultural field to determine which factors equate to career choice
- ∞ How do influencing factors vary by specific major or career within agriculture?
- ∞ Qualitative research examining *how* factors influence students in career decisions
- ∞ Examine pre-college enrollment factors influencing choice of major as well as after-college major changes and the influencing factors

# Thank you

## Are there any questions?

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Contact Olivia Hile at [olivia.horning@usu.edu](mailto:olivia.horning@usu.edu)  
with any additional questions



# Resources

- œ U.S. Department of Education, National Center for Education Statistics, 2012
  - œ 52% of math majors switched to another major
  - œ 40% of natural sciences majors switched
  - œ 37% of education majors switched
  - œ 36% of humanities majors switched
  - œ 35% of all STEM majors switched
  - œ 32% of engineering majors switched
  - œ 32% of general studies majors switched
  - œ 31% of social science majors switched
  - œ 31% of business majors switched
  - œ 28% of computer and information sciences majors switched
  - œ 26% of healthcare field majors switched

