

**Perceptions of Agricultural Careers among Minority Community College Students in a
Summer Agricultural Research Program**

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Introduction/Need for Research

The United States is expected to add an additional 3 billion people to the planet's population by the mid-21st century (Fedoroff et al., 2010). To combat food insecurity and resource inequities, the food and agricultural workforce must be innovative and skilled. Agriculture is the nation's largest employer with over 24 million people working within the industry, yet the technical skills and knowledge needed for career success are lacking (Lundry et al., 2015). Research has shown that this divide is especially disproportionate among minority students, and the lack of minority students represented in agriculture is a long-standing, multi-faceted issue. In a study of Texas Agricultural Education programs, Talbert and Larker (1995) found that minority students had negative perceptions regarding agriculture and were less likely to perceive agriculture as having ample career opportunities. They also found that minority students, especially minority women, were underrepresented (Talbert & Larker, 1995). Likewise, the nations' agricultural teacher population lacks cultural diversity (Vincent et al., 2012). In fact, of last year's 873 license-eligible agricultural education graduates, fewer than 10% represented a racial/ethnic minority group compared to just over 90% who were White, non-Hispanic (Smith et al., 2019).

To address the disparities in agricultural knowledge and perceptions, and the needs for food and agricultural workforce development among community college students, the REACH program was created. REACH is an 8-week, summer residential program at the University of Tennessee, Knoxville for undergraduates from Tennessee's 13 community colleges (2-year programs leading to an Associate's Degree). Students who have completed at least two community college STEM-based classes and laboratories are actively recruited. Selection prioritizes students who are: (a) economically disadvantaged (based on Pell grant-eligibility); (b) represent racial and/or ethnic minority groups; and (c) first-generation college students. REACH provides participants, referred to as REACH Scholars, the opportunity to develop valuable research abilities, to gain 21st Century skills, and to learn about careers in food and agriculture. This work was supported by Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative Grant no. 2018-67032-27703 from the USDA National Institute of Food and Agriculture.

Theoretical Framework

The theoretical framework reflects the major career decision-making literature. During early adolescence, young people explore careers through fantasy, academic courses, and work (Super, 1957). Career decisions may be influenced by family, peers, cultural norms, aptitudes, educational attainment (Korkut-Owen, 2008; Bandura et al., 2001) and "serendipitous events" (Matthews, 2017, p. 321). Yet, in late adolescent, young people shift their focus to what careers are available (Ginzberg, Ginsburg, Axelrad, & Herma, 1951; Kniveton, 2004). Esters and Bowen (2005) studied 88 urban graduates of an agricultural high school who were 25-30 years old. They found that eight students selected agricultural careers; four due to their high school experiences and four due to their knowledge of available careers. Multiple reasons accounted for students who selected other careers including career interests outside of agriculture and a lack of minority representation in agricultural careers. The purpose of this study was to understand: (a) how REACH Scholars perceived agricultural careers and (b) to what extent, if at all, REACH Scholars' perceptions changed as a result of the program.

Methodology

On the first day of the 2019 REACH program, eight Scholars completed a pre-test questionnaire that measured the likelihood to enter an agricultural career, perceptions of agricultural occupations, and entry requirements. The instrument was drawn from Talbert and Larker's study of high school agricultural science students (1995). The REACH Scholars completed the same questionnaire on the last day of the program (post-test). A sample item was "I am capable of getting a good job in an agricultural occupation," and the scale used was 1 (*Strongly Disagree*), 2 (*Disagree*), 3 (*Neither Agree nor Disagree*), 4 (*Agree*), 5 (*Strongly Agree*). The data was analyzed by comparing frequencies and percentages between the pre-test and post-test.

Results/Findings

A comparison of pre-test and post-test data showed that REACH scholars (N=8) reported greater likelihood to enter an agricultural career, more positive perceptions of agricultural occupations and entry requirements. The percentage of REACH scholars who agreed or strongly agreed that:

- "I am capable of getting a good job in an agricultural occupation" increased by 50% (from 50% pre-test to 100% post-test).
- "There are agricultural job opportunities in education, communication, and information" increased by 50% (from 50% pre-test to 100% post-test).
- "Many ethnic groups and races of people are employed in the agriculture industry" increased from 12.5% (from 75% pre-test to 87.5% post-test).

Not all changes in perception of agricultural careers were positive. The percentage of REACH participants who agreed or strongly agree that:

- "Agriculture is just farming and ranching" increased by 12.5% (from 0% pre-test to 12.5% post-test). [This item had reverse polarity whereby disagreement is the positive response]
- "Lots of intelligent people choose agriculture as a career" declined by 12.5% (from 87.5% pre-test to 75.0% post-test).

Conclusions

The REACH program produced considerably more positive changes in the Scholars perceptions of agricultural careers than negative changes. Improvements in their perceptions were highest for agricultural job opportunities in education, communication, and information, as well as being able to obtain a "good job" in agriculture. The REACH experience did not produce gains in all items on the perceptions scale.

Implications/Recommendations/Impact on Profession

The results indicate that the REACH program increases undergraduates' likelihood to enter an agricultural career and contributes to more positive perceptions of both agricultural occupations and entry requirements. For the profession to recruit and maintain a diverse workforce, more classroom education, support, and hands-on research opportunities must engage minority students with the perceived benefits of working in food and agricultural careers. Follow-up interviews are recommended to more fully understand how the REACH experience may or may not influence the students' agricultural career decisions over time.

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