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An Exploration of the Motivational Profile of Secondary Urban Agriculture Students

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This descriptive-correlational study examined the personal factors that may affect the self-determination of 110 freshmen who have elected to enroll in an urban agriculture program. The personal factors, termed the motivational profile, consisted of influences in the decision to enroll in the program, the student's type of motivation to attend the agriculture program, satisfaction with that decision, and perceived effort during academic tasks related to agriculture. Results show that when students perceive they have an influence in the decision to enroll in the program, they are more satisfied with the decision and more likely to report exerting a moderate to high effort on academic tasks related to agriculture. This study has implications for establishing a body of knowledge on non-rural student motivation toward agriculture that can impact teacher training, educational interventions targeting student achievement, and student recruitment and retention into agriculture.

Keywords: self-determination; non-rural student motivation; satisfaction; perceived effort; urban agricultural education

A large number of American youth lag behind much of the world in academic achievement (Bozack, 2011; Lee, Grigg, & Donahue, 2007). Some have attributed this phenomenon in school-aged youth to an increase in boredom, lack of motivation, and apathy toward their future (Larson, 2000). This observation is problematic in terms of preparing a future workforce with the knowledge and skills needed to evaluate and synthesize new information, think critically, and to solve the problems that will keep our country competitive in the global market (Fredricks, Blumenfeld, & Paris, 2004). As a result, growing interest in the psychology of positive youth development and how positive experiences embedded in social contexts impact student motivation has emerged (Fredricks, Alfeld, & Eccles, 2010).

Student motivation and the social factors that impact student engagement could be perceived as one of the most important psychological concepts in education (Vallerand, Blais, Briere, & Pelletier, 1992). The discussion on motivation, student engagement and student achievement is prevalent in current studies in a variety of educational disciplines worldwide; however, a review of literature in agricultural education yielded no such trend. Although studies in agricultural education have addressed motivation and engagement, they have largely focused on career preparation for traditional, rural student populations (see Bajema, Miller, & Williams, 2002; Cannon, Broyles, Seibel, & Anderson, 2009; Conroy, Scanlon, & Kelsey, 1998; Talbert & Balschweid, 2006). Consequently, the literature on the impact agricultural education has on student motivation, student engagement, and academic achievement in non-rural populations is sparse.

In this study non-rural refers to urbanized areas and urban clusters with at least 2,500 residents as classified by the U.S. Census Bureau (2010). The lack of empirical evidence on the impact of agricultural education on academic and career readiness for non-rural students is problematic when demographic projections indicate that the United States economy and many 21st Century jobs in agriculture will increasingly rely on a non-rural workforce (Lytle, 1992). To this end, it is important to the viability of agricultural education that we are able to meet industry demands in terms of the effective preparation of both skilled non-rural agriculture workers and the agriculture teachers who educate them (Doerfert, 2011; Esters & Bowen, 2005; Phipps & Osborne, 1988; Roberts & Dyer, 2005; Roberts et. al., 2009; Rohs & Anderson, 2001).

This exploratory study seeks to contribute empirical evidence on motivational considerations for the non-rural demographic, establishing a line of inquiry on the personal and cultural implications that impact teaching and learning in agriculture. Pursuits in this area would be beneficial in creating appropriate interventions that encourage positive learning environments, increase the number of students recruited and retained, and establish efficiency in teacher preparation and career exploration to name a few (Esters & Bowen, 2005; Munro, 2003; Purdie, & Hattie, 1996; Roberts et. al., 2009).

The theoretical framework by which this study was founded is the *organismic integration theory* (OIT), a sub-theory of Deci and Ryan's (1985) *self-determination theory* (SDT). SDT represents a broad framework for the study of human motivation where behavior can be seen as intrinsically and extrinsically motivated (Reeve, Deci, & Ryan, 2004; Rivera-Caudill & Brander, 2008; Ryan & Deci, 2000a). Intrinsic motivation refers to behaviors that an individual engage in for one's own pleasure (Ryan & Deci, 2000b). Conversely, extrinsically motivated behaviors are those that an individual engage in because the behaviors elicit or deter a separate outcome from the activity (Ryan & Deci, 2000b).

Originally it was believed that extrinsic motivation referred to behaviors an individual engaged in due to a lack of self-determination and was viewed as "pale or impoverished;" students were believed to have performed tasks with feelings of resentment, apathy, or resistance (Ryan & Deci, 2000b; Vallerand & Bissonette, 1992). However, Deci & Ryan proposed through OIT that different types of extrinsic motivation exist, some of which represent active states where the student performs with an attitude of willingness that reflects an inner acceptance of the value or utility of the task (Deci & Ryan, 1985; Ryan & Connell, 1989; Ryan & Deci 2000b; Vallerand & Bissonette, 1992).

According to the sub-theory, humans are active, growth-oriented organisms who are naturally inclined toward the integration of psychological elements into a unified sense of self. The *internalization* of these regulatory elements, or external motives, is for the purpose of integrating into larger social structures (Ryan & Deci, 2000a). This is possible because SDT assumes that individuals have an innate desire to satisfy the need for *autonomy* (i.e., self-rule), *competence* (i.e., sense of accomplishment), and *relatedness* (i.e., emotional and personal bonds between individuals) (Vallerand & Bissonette, 1992). The more an individual perceives a course of action will satisfy these needs, the more self-determined that individual becomes, thus internalizing the motive (Ryan & Deci, 2000a).

Figure 1 illustrates the OIT taxonomy of motivational types that increase in the degree of self-determination (Ryan & Deci, 2000a). This continuum contains identifiable degrees of reason that go from non self-determined forms of regulation (i.e., amotivated, external and introjected) to self-determined forms of regulation. In addition, the continuum identifies the student's perceived *locus of causality*, which can be a person or situation. Theorists purport that in order for students to utilize more self-determined behaviors, the educational context as the locus of causality must support an individual's autonomy (Pelletier, Fortier, Vallerand, & Brière, 2001; Ryan & Deci, 2000a). Conversely, the more controlling the educational context is perceived to be by the student, the more likely the student's internal motives are undermined, leading to extrinsic motivation and eventually amotivation under prolonged circumstances (Pelletier et al., 2001).

OIT provides a framework by which to study the variations in self-regulation and the impact these variations have on an individual's desire to act. Individuals operating under self-determination exhibit more internally regulated behaviors, persistence at tasks, and an overall sense of satisfaction (Ryan & Deci, 2000a). Because intrinsic motivation results in high-quality learning and creativity, it is important to understand the factors and forces that support versus undermine it (Gillet et al., 2011).

Our current educational system requires that most primary and secondary students be assigned to a specific school based on residence and taught a prescribed curriculum. Grounded in the literature, it is hypothesized that the current educational structure is perceived by

students as controlling and as a consequence students who are not able to internalize these external motives are displaying less self-determined types of regulation for academic tasks (Pelletier et al., 2001; Ryan & Connell, 1989; Ryan & Deci, 2000a). It may be argued that the reason why secondary agriculture programs make a positive difference in the lives of students is because they integrate students' interests in agriculture with their education. Furthermore, it allows students to elect to enroll in the program, which provides a sense of autonomy. Therefore, those who are supported in their autonomous decisions by individuals of esteem, such as educators and parents, are more likely to thrive in the agriculture program. Accordingly, what personal factors motivate non-rural students to enroll in a comprehensive agriculture program and how does it impact their participation in academic tasks related to agriculture?

Behavior	Non self-determined					Self-Determined
Motivation	Amotivation	Extrinsic				Intrinsic
Regulatory Styles	Non-regulation	External	Introjected	Identified	Integrated	Intrinsic
Perceived Locus of Causality	Impersonal	External	Somewhat External	Somewhat Internal	Internal	Internal

Figure 1. Self-determination Continuum Showing Types of Motivation with their Regulatory Style, Loci of Causality, and Corresponding Processes. Based on the continuum presented by Ryan & Deci (2000b).

Purpose & Objectives

The purpose of this study was to examine the personal factors that may affect the self-determination of non-rural students who have elected to enroll in a comprehensive agriculture program. These factors can be described as *events* that occur in the cognitive, affective, and psychomotor domains and is operationalized in this study using a motivational profile that measured influences in the decision to enroll in the agriculture program, the type of motivation to attend the agriculture program, satisfaction with the decision to enroll in the agriculture program, and perceived effort during academic tasks related to agriculture. For the purpose of this study, *enroll* represented the act of accepting the invitation to matriculate and *attend* represented the act of coming to school. This study was guided by the following objectives:

1. Describe subjects' motivational profile toward studying agriculture.
2. Determine the relationships among factors in the motivational profile that influence perceived autonomy support and outcomes of self-determination.

   H_0: There are no significant relationships among factors influencing perceived autonomy and outcomes of self-determination.

Methods and Procedures

The study was descriptive-correlational in design and consisted of a census of 122 high school freshmen enrolled in a comprehensive urban agriculture program. Of that number, 110 returned appropriate consent documents. A follow-up with students who did not receive parental permission beyond the initial two-week

recruitment period was not conducted since the response rate of 91% was considered acceptable (Borg & Gall, 1989). With limited resources available, an urban site, which represents only one type of non-rural location, was chosen because the school offered the complete state-approved agriculture curriculum, actively participated in various FFA activities, and all freshmen were required to begin a supervised agricultural experience, thus representing a comprehensive program as defined by the integrated three-component agricultural education model (Croom, 2008).

The students' motivational profiles were measured using an adapted version of the Academic Motivation Scale (AMS) – High School Version (Vallerand et al., 1992). The scale measured intrinsic motivation, three forms of extrinisic motivation, amotivation, the rate in which specified individuals influenced the student's decision to attend the agriculture program, and degree of satisfaction with that decision at the beginning of the school year and three months later (1 = Does not correspond at all, 2-3 = Corresponds a little, 4 = Corresponds moderately, 5-6 = Corresponds a lot, and 7 = Corresponds exactly).

Vallerand et al. (1992) established validity using confirmatory factor analysis to correlate each AMS subscale among themselves and the tenets of Deci and Ryan's (1985) motivational theory. These studies found that instrinsic motivation and amotivation were negatively correlated (r = -.82), which is predicted by self-determination theory. Cronbach's alpha coefficient for the instrument was .81 (n = 1,062). Test-retest reliability displayed temporal stability with a mean correlation value of .79 over a one-month period. In addition, a panel of experts consisting of an educational psychologist, a methodologist, and three content experts reviewed the profile for face and content validity. Minor changes were made to the instrument to reflect the recommendations. Finally, prior to the study, test-retest was conducted on a pilot group of students (n = 28) to confirm reliability of the supplemental questions with a percent agreement of 82% or higher.

All participants were invited to a general meeting room in the school to complete the instrument. Data were analyzed using SPSS 19.0 software. Results are reported using descriptive statistics and Pearson product-moment correlations. Means ranging from 1.0 - 3.0 will be categorized as low, 3.1 - 4.9 as moderate and 5.0 - 7.0 as high. Davis' convention (1971) was used to identify the magnitude of the correlation. In addition, the motivational profile was analyzed using the person-oriented approach (Ratelle et al., 2007). The person-oriented approach investigates how different types of motivation combine to produce distinct motivational profiles. Although it is still exploratory in high school students, researchers have delineated these distinct profiles based on studies on adults and college-aged students (Amabile, 1993; Lepper, Corpus, & Iyengar, 2005; Ratelle et al., 2007). The profiles are (a) *autonomous*, (b) *controlled*, and (c) *combined*. An autonomous profile is evident by high levels of intrinsic motivation and identified regulation and low levels of introjected and external regulations and amotivation. A controlled profile is evident by moderate to high levels of introjected and external regulations and amotivation and low levels of intrinsic motivation, identified regulation. Finally, a combined profile is evident by high levels of both controlled and autonomous motives.

Findings

The first research objective sought to describe subjects' motivational profile based on influences in the decision to enroll in the agriculture program, the type of motivation to attend the agriculture program, satisfaction with that decision, and perceived effort during academic tasks related to agriculture. The 110 students reported *self* (M = 4.9, SD = 1.9) as the strongest influence in the decision to enroll in the program followed by *family decision* (M = 4.2, SD = 2.1). The students reported *mother* as having a moderate influence (M = 3.6, SD = 2.2) and *father* as having a low influence (M = 3.0, SD = 2.2) on the decision to enroll.

In terms of the students' types of motivation to attend the program, the mean score for the intrinsic subscale was 4.6 (SD = 0.9). The mean scores for the identified, external and introjected

regulation subscales were 5.8 (*SD* = 1.0), 6.2 (*SD* = 0.9), and 5.7 (*SD* = 1.2) respectively. Finally, the mean score for the amotivation subscale was 2.5 (*SD* = 1.5). In terms of the frequency in which each of the three types of person-oriented profiles occurred, no student was categorized by the autonomous profile, 14 students were categorized by the controlled profile, and the remaining 96 students were categorized by the combined profile. The students also reported moderate satisfaction with the decision to enroll in the program prior to the first day of class (*M* = 4.8, *SD* = 2.1) as well as three months later (*M* = 4.7, *SD* = 2.3). In addition, the students reported putting a high amount of effort (*M* = 5.4, *SD* = 1.3) into academic tasks related to agriculture (see Table 1).

Research Objective Two sought to determine the relationships among factors influencing perceived autonomy (i.e., influences in the decision to enroll) and the outcomes of self-determination (i.e. type of motivation to attend the program, satisfaction with decision to enroll, and perceived effort during academic tasks related to agriculture). The null hypothesis was rejected in favor of the alternative, which stated that there were significant relationships among the factors influencing autonomy and outcomes of self-determination (see Table 1). When evaluating the influence to attend the agricultural program, self-selection ($r = .39$, $p < .05$) and family decision ($r = .31$, $p < .05$) both had moderate and positive relationships with intrinsic motivation. Similarly, self ($r = .45$, $p < .05$) and family decision ($r = .38$, $p < .05$) both had moderate and positive relationships with the satisfaction before school began. There were also moderate and positive relationships between amotivation and the mother's decision to enroll the student in the program ($r = .35$, $p < .05$) as well as the father's decision ($r = .42$, $p < .05$); only the students who reported self as the major influence in the decision to enroll in the program reported a statistically significant degree of satisfaction with their decision three months later ($r = .29$, $p < .05$).

Table 1

Means, Standard Deviations, and Correlations among Variables in the Motivational Profile (n = 110)

Outcomes	*M*	*SD*	Self	Family	Mother	Father
Intrinsic	4.6	0.9	.39*	.31*	-.13	.03
Identified	5.8	1.0	.11	.14	-.03	-.08
Introjected	6.2	0.9	.26*	.17	.02	.00
External	5.7	1.2	.05	.21*	.07	.00
Amotivation	2.5	1.5	.00	.01	.35*	.42*
Satisfaction (0 days)	4.8	2.1	.45*	.38*	-.22*	-.08
Satisfaction (3 months)	4.7	2.3	.29*	-.04	-.17	-.10
Perceived Effort	5.4	1.3	.06	.07	-.11	-.24*

*$p < .05$

There were significant relationships among the types of motivation to attend the program, the satisfaction with the decision to enroll, and the perceived effort on academic tasks related to agriculture (see Table 2). There were moderate and positive relationships between perceived effort on academic tasks related to agriculture and intrinsic motivation ($r = .33$, $p < .05$), identified regulation ($r = .38$, $p < .05$) and introjected regulation ($r = .42$, $p < .05$). Finally, there was a low and positive relationship between perceived effort and external regulation ($r = .20$, $p < .05$) as well as a moderate and negative relationship between amotivation and perceived effort ($r = -.46$, $p < .05$).

Table 2

Correlation among Outcomes of Self-Determination (n = 110)

Outcome	Satisfaction Before	Satisfaction Later	Perceived Effort
Intrinsic	.20*	.23*	.33*
Identified	-.10	.03	.38*
Introjected	.00	.15	.42*
External	-.06	-.02	.20*
Amotivation	.01	-.14	-.46*

**p < .05*

Conclusion/Implications/Recommendations

This study yielded evidence that the personal factors identified in the motivational profile did affect the self-determination of the urban students who had elected to enroll in the comprehensive urban agriculture program. Student motivation is a very complex topic with numerous nuances and implications. Consequently, several questions have arisen from the findings that should be explored in future studies. Accordingly, three major conclusions and the recommendations associated with them will be discussed. Although the findings in this study strongly support the literature presented on human motivation, caution should be used when generalizing the findings to other non-rural student populations until further confirmatory evidence is available.

Conclusion 1: Influences in the Choice to Enroll in Agricultural Education Affect Student Motivation and Satisfaction

The findings indicate that the factors that influenced the students' decision to enroll in the agriculture program had an impact on their motivation to attend the program as well as the satisfaction with that decision. Although the students perceived a mostly autonomous or autonomously supported decision to enroll in the program and thus reported a high satisfaction with that decision, their profiles for attending were observed as combined. The combined profiles were an indication that the students' decisions, although not forced, were likely based on more self-determined external motives (Ryan & Deci, 2000b).

Accordingly, while the presence of intrinsic motives and autonomous profiles would be highly preferred for the students in this study, the high precedence of combined profiles were a promising indication that the majority of the students should be able to employ adaptive behaviors that will yield positive academic outcomes as it relates to learning about agriculture, provided they are given autonomy support within the educational environment (Reeve & Jang, 2006). Previous studies have found that the individual that provide support to the student does positively impact the student's degree of self-regulation toward that task. More specifically, a teacher's support has the strongest positive correlation, followed by support from the mother and then the father (Gillet et al., 2011). Therefore, it is imperative that the educators in the school provide students opportunities to make educational choices as it relates to agriculture and that the choices are supported both in the educational and home environments in order to encourage internalization of the importance of studying agriculture.

One positive implication of internalization of the external motives for studying agriculture is that the students will more readily adapt to any situation and be able to use the opportunities provided to excel academically, socially, and professionally. Conversely, those students who are not able to internalize the external motives will need more support and specific interventions in order to excel. Hence, what strategies should be used to impact the influences in

students' choices to enroll in agricultural education in a manner that encourage more self-determined regulation toward academic tasks and higher satisfaction?

Recommendation 1. The agricultural education field must continue to increase support for enrollment in non-traditional areas by not only targeting potential agriculture students, but teachers, administrators, parents, and the community as well (U.S. Department of Education, 1991). Those agriculture programs that are successful have a strong support system in the community leading to more self-determined types of regulation and satisfaction with tasks related to agriculture within the students. In less traditional settings like urbanized areas, the support for agriculture that is generally observed in rural areas is not present. By only targeting non-rural students, programs may be successful at recruiting students, but are less likely to be successful at retaining them or facilitating academic achievement without faculty and parental support (Jeynes, 2007).

Recommendation 2. Future studies are needed to explore the relationships between specific reasons why non-traditional agriculture students enroll in agriculture programs and the type of motivation they have for attending that program. These studies are important because agriculture teachers, no matter their preferred student demographic, must be adequately trained to work with non-traditional students who have different interests and needs than that of the traditional agriculture student. By understanding the factors that influence students decisions toward agriculture and how they impact motivation to study agriculture, agriculture teachers can be more informed about the choices they make in strengthening rapport with non-traditional agriculture students, diversifying the curriculum so that it is more relevant to that population, and providing the necessary support for those students to internalize the value of studying agriculture.

Conclusion 2: Students are More Likely Extrinsically Motivated to Attend High School and Participate in Tasks Associated with School

Although the students reported a choice in the decision to enroll in the agriculture program, there were no autonomous profiles observed. One may question why the group was strongest in extrinsic motivation and a combined profile given their reported influence in the decision to enroll. It may be explained by analyzing the context in which these students are making this decision. Previous studies have yet to identify an autonomous profile in secondary students as it relates to motives for attending school, even though it has been identified in college students and adults (Ratelle et al., 2007). Furthermore, research shows that students' intrinsic motivation orientation toward education decreases from 8 years old until the age of 14 years old and levels out during high school until the age of 17 years old, during which time the extrinsic motivation orientation is highly contextual and is based on the individual's ability to self-regulate (Corpus, McClintic-Gilbert, & Hayenga, 2009; Gottfried, Fleming, & Gottfried, 2001; Lepper et al., 2005). Therefore, the phenomenon may be explained because the group is associating agricultural education with compulsory education.

In taking into account the students' environment, agriculture is not salient and thus is not associated with cultural norms or common academic and career discourse. Consequently, the students who elected to enroll may have done so because of external motives such it being the best option for completing high school instead of because they inherently enjoyed learning about agriculture and recognized it as part of their identity. As a result, these students must use adaptive behaviors to internalize the academic tasks related to agriculture in order to find enjoyment and maintain effort (Deci & Ryan, 2002; Pintrich, Anderman, & Klobucar, 1994; Ratelle et al., 2007).

The students who are able to employ adaptive behaviors will do so in the presence of the extrinsic motives; however, those students who cannot self-regulate will need educational interventions to assist them in the process of

internalization (Gillet et al., 2011). The consequence of this finding is that the extrinsically motivated students are less likely to maintain agriculture knowledge and more likely to discontinue engagement once the extrinsic motives are removed (Fredricks et al., 2004). Subsequently, can an autonomous profile be identified in any high school agriculture student or developed through participation in the agriculture program? Also, what would interventions within an agricultural context entail that are effective at moving students from non self-determined regulation to more self-determined regulation?

Recommendation 1. Agriculture teachers should continue to explore ways of providing autonomy and autonomy support to extrinsically motivated and amotivated students and evaluate the impact of such choices on the students' motivation to attend high school and participate in tasks associated with agriculture. Targeted interventions would include student-centered instruction, choice in agriculture concentration within the program, and choice of projects/assignments within lessons.

Recommendation 2. The person-oriented approach in high school students should be further explored to see if autonomous profiles can be identified in agriculture students; specifically, for students who made distinct choices to enroll (e.g., a comparable comprehensive curriculum is available at their school or they commute from their home school to another school for agriculture classes).

Conclusion 3: A Relationship Exists Between the Motivational Profile and Perceived Effort by Students with Tasks Related to Agriculture

The type of motivation to attend the program correlates with the level of perceived effort by the student on academic tasks related to agriculture. The relationships identified between factors influencing autonomy support and outcomes of self-determination are consistent with the literature on self-determination (Pelletier et al., 2001; Ryan & Deci, 2000a; Ryan & Deci, 2000b). Students who identified self as the major influence in the decision to enroll in the agriculture program also indicated that intrinsic motivation as well as introjected regulation was the major motivation for attending the program. In addition, students who reported that the decision to enroll was a family decision were also more intrinsically motivated as well as externally regulated.

This finding indicates that there were students that enrolled in the urban agriculture program because they were highly self-regulated. Students with self-determined forms of regulation that have external motives may be motivated by career opportunities, school safety, better educational resources available at the school, higher perceived access to college, higher scholarship allocations for graduates, and family pressure (Fredricks et al., 2004). Based on the findings discussed in this study and previous studies about the relationship between measured academic motivation and student effort, how can the motivational profile be used to promote secondary agricultural education?

Recommendation 1. The agriculture teachers at the school studied should receive professional development on autonomy support and utilizing strategies to facilitate academic internalization in their student population. Upon completion of the professional development, the motivational profile should be administered to incoming students to identify and provide targeted support to those students who are categorized under the controlled profile. These efforts should be monitored and longitudinal findings on how the various strategies have impacted academic achievement and the propensity to continue to study or engage in the field of agriculture beyond high school should be reported. This form of mediation is currently being used to address achievement gaps in underperforming student all across the country and therefore empirical evidence does exist to support the utilization of assessments to identify individuals for specific interventions (Leon, Villares, Brigman, Webb, & Peluso, 2001; Martin, Gibson, & Wilkins, 2007).

Recommendation 2. The motivational profile introduced in this study should be used in future studies regarding non-rural agriculture students' motivation. More specifically, studies in other locations to confirm the findings of this study as well as to examine the relationships among student motivation, their academic behavior, and the academic environment.

This study seeks to initiate a body of knowledge that documents the role of motivation on educational outcomes in agricultural education and underscores the importance of exploring the mechanisms for creating environments that increase self-determined motivation and allow individuals in non-traditional agricultural settings to flourish (Gillet, Vallerand, & Lafreniere, 2011; Seligman & Csikszentmihalyi, 2000). The overall goal would be to improve academic achievement and increase retention of non-rural students in agriculture and related sciences after graduation from high school. A clear message to students of the current importance of agriculture in their lives and the impact they can have on society with the knowledge they are receiving is paramount to the success of this goal. Often students are instructed with the premise that the information they are receiving will be important in the future; however, research shows that students become both engaged and more persistent with academic tasks when they know the current importance and relevance of that information and are able to place personal value in knowing that information (Fredricks et al., 2004).

For several decades, the call for a more inclusive field has existed; and although time and financial resources have been dedicated to this cause, it has yet to be realized. We cannot continue to use the strategies that have been successful on the traditional agriculturist on various nontraditional subgroups. We must begin to understand the implications social and cultural experiences have on individuals and use this knowledge to create interventions that will not only recruit a diverse population into agriculture, but also keep them in it.

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