

# Factors Influencing Choice of Food Safety Related Career Path: An Online Focus Group Study

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## Abstract

The increased demand for trained professionals with a science, technology, engineering, and math background to monitor and maintain the safety of the food supply has been identified by related industries and government agencies. Information regarding the influential factors identified by students to major in a food safety (FS) related career path is lacking. Online focus group sessions with 20 students in a FS related major provided insight to factors influencing career decisions as well as the relationships between FS and chosen career paths. Sixty percent of the students majored in an agricultural related field. The remaining students were dietetics, hospitality, microbiology and biotechnology majors. Social Cognitive Career Theory served as the guiding force to develop the survey questions. The information shared by students was analyzed using focused coding methods to extract common descriptive terms. The descriptive terms led to themes of influential factors related to the students' chosen career paths. For example, students identified a desire for a career where they could help others ( $n=10$ ) and work with people ( $n=13$ ). These two common descriptors generated a theme of job satisfaction (influential factor). Market forces related to employment demands and financial gain were less of a factor. Agriculture classes, FFA, job shadowing, and work experience were described as influential factors in exposing students to career paths and confirming their decisions. When seeking professional employment, the students identified passion for their career while financial stability was referred to in a subtle manner.

## Introduction

Fewer students are enrolling in agricultural related sciences in higher education than is required to meet the need (Association of Public Land-grant Universities

[APLU], 2009). The United States Bureau of Labor Statistics (USBLS, 2012) projected a 10% increased need for Agricultural and Food Scientists from 2010 to 2020. Animal scientists were forecasted for a 13% increase by 2020 and plant scientists 12%. Additionally, the United States Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) proposed a goal to increase the supply of trained graduates in the food and agricultural sciences. The plan included strategies to inspire, ensure access, and enhance academic capacity of students from all groups in the United States to excel in the agriculture and natural resources sciences (APLU, 2009).

The National Academy of Sciences (NAS) recognized the potential pool of students for agriculture related disciplines is no longer a group of young people that grew up on farms. Many students were unaware of the multi-dimensional and challenging nature of agriculture related disciplines. Educators have not helped students make the connection between science, technology, engineering and mathematics (STEM) courses and an agriculture related degree (NAS, 2009). Additionally, Gilmore et al. (2006) found that 41% of students in high school have a misconception with agriculture sciences, 33% lack knowledge about employment opportunities and 22% are unaware of related fields of study. According to Collins (2008), traditional agriculture production science programs, such as soil science, have become much greater in scope and need to be packaged differently within university systems.

Choosing a career is a lifelong process (Ferry, 2006). Ferry's focus group research identified emerging themes of family, school and community influencing career choices. Behrman et al. (1997) identified the market place as key impact on a student's career choice.

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## Factors Influencing Choice of Food

Information related specifically to food safety (FS) related career paths was lacking. Therefore, this study focused on influential factors related to the decision of undergraduate students at South Dakota State University (SDSU) choosing a major closely connected to FS.

To obtain more quantitative and qualitative insight specific to students majoring in food safety, surveys in cooperation with focus group research methods are useful. The focus group process provides more insightful information than can be obtained through a standard survey (Krueger and Casey, 2000). Focus group discussions provide insight and clarification to the attitudes and values contributing to the decision making process when career choices are made.

### Purpose

Through focus group research, insight was gained regarding influential factors guiding students to specifically choose agriculture and food science majors. The primary purpose of the research was two-fold. First, students shared how they perceive their major area of study as they complete their coursework; and secondly, how their chosen major contributes to a vision regarding a future career.

A primary objective of the investigation was to identify if market forces, related to the growing need for agricultural and food science professionals, influenced students' decisions regarding a major related to FS. The opportunity for students to address the market forces in their career decision were incorporated into the focus group process.

### Methods

#### Online Focus Group Process

Four online focus group sessions were conducted simultaneously with students at SDSU obtaining a FS related bachelor's degree. The focus groups were conducted using an asynchronous Internet-based discussion board.

The primary purpose of the focus group investigation was to identify themes of student's perceptions regarding the relationship of their values, attitudes and experiences with their chosen major (Grudens-Schuck et al. 2004). Additionally, students were asked to share how they vision their career impacting the safety of the food supply. As recommended the Krueger and Casey (2009), the opportunity for students to share the influence of market forces in their career decision were also incorporated into the focus group process. To avoid suggestive answers, the question format did not include terms related to market forces such as job opportunity, salary, job security, potential salary, or other similar terms.

#### Sample Population

Students recruited for the focus groups were required to have a FS related major including agricul-

ture and food sciences, dietetics, nutrition, agriculture journalism, family consumer sciences education and hospitality management. Participants were recruited by faculty teaching FS related courses. Previous work by Hegerfeld-Baker et al. (2014) surveyed over 400 undergraduate students at SDSU. A recruitment email was sent to 76 of the 400 participating students who identified their willingness to participate in the upcoming focus group research.

The recruitment email was linked to an online survey generated through QuestionPro®. The survey described the research protocol, obtained demographic information and consent to participate. Twenty students consented to participate by registering for the online focus group discussion through Desire2Learn® (D2L), the SDSU course-management system. Students were familiar with the D2L system as all courses taught at SDSU are required to use D2L.

As students registered, they were blindly assigned to a discussion group. There were five students in each group. Krueger and Casey (2000) suggests six to nine people per group, with three to four groups to reach a saturation point when holding in-person focus group sessions. The groups were comprised of majors related to FS representing all levels of the food delivery system including production, processing, foodservice and supporting sciences (i.e. microbiology). The groups were homogeneous in nature since all represented majors were related to safety of the food supply (Krueger and Casey, 2009; Tillberg and Cahoon, 2005). However, there was variability within each group in regards to their major area of study. All students recruited had no personal stake in the research project (DeLeeuw, 2008).

#### Development of Research Questions

The questions were developed with the guiding force of Social Cognitive Career Theory (SCCT) focusing on self-efficacy, expected outcomes, interest of the person and individual goals (Lent and Brown, 2006; Kelly et al., 2009). Several reviews of the questions were carried out with colleagues and students to be certain they were clearly understood and of a difficulty level that participants could answer (Krueger and Casey, 2000 and 2009).

When students began the on-line focus group process, they viewed an introduction addressing technology, purpose of the study and participant expectations. Participants were also instructed to not be concerned with improper grammar and misspelling. These instructions were to encourage spontaneity (Kenny, 2005). The questions addressed the original research question by gaining insight of students' perspectives on career choice in respect to high school science classes and teachers; life experiences; desired employment; and safety of the food supply. The focus group questions, in their proposed final format, were reviewed by project advisors and a social sciences researcher with expertise in focus group research.

**Online Discussion Format**

Each student’s identity was not anonymous to other participants in their group. If using the anonymity option with a D2L discussion board, the response would also have been anonymous to the investigator, therefore impossible to track statements of each participant. Coding the participant’s major to their responses was necessary for the project. The student’s identity was confidential following the discussion group. This study was approved as exempt human subjects’ research by the SDSU Research Compliance Coordinator.

The questions were posted simultaneously for students to start responding to questions at their convenience. The questions were not of a sequential nature (Table 1). Participants were to respond to others’ posts as well (a minimum of one time required for each question). Similar research projects posting a new question at regular intervals, over several weeks, in a specific sequential order experienced difficulty keeping participants engaged in the study (Krueger and Casey, 2009; Deggs et al., 2010). Of the 20 students in this study, 16 (80%) fully participated, answering all questions and responding to at least one person for each question.

**Analysis of Focus Group Discussion**

The data (discussion) was analyzed using the focused coding method (Hesse-Biber and Leavy, 2011). The two types of codes generated from the discussion board conversation were literal and analytical. The literal

codes tended to be descriptive and were obtained from the D2L threaded discussion board, which were transferred to a spreadsheet. Specific words and phrases were pulled and color-coded in regard to the level of the food delivery system (production, processing, retail, consumer) generating the response. The literal codes were assessed for internal consistency, frequency and extensiveness of comments within the context of the question. These assessments contributed to the analytical codes. The analytical codes were more closely tied to the researcher’s insight into the subject and more interpretive in nature than the literal codes. The analytical codes served as a tool to generate a summary or final theme that “tells the story” related to the discussion (Hesse-Biber and Leavy, 2011; Krueger and Casey, 2009).

**Results and Discussion**

**Participant Demographics**

The majority (85%) of the 20 participants were from STEM related backgrounds. The gender of the group was predominantly female (n=18). Females are more likely to respond to surveys and qualitative research than males (Dillman et al., 2009). A \$15 gift card served as an incentive for recruitment and full participation. Similar qualitative investigations (online and face-to-face) varied in overall number of participants with as little as six to 182 (Hong and Schull, 2010; Tillberg and Cohoon, 2005). Of the 20 students, seven major area of study were represented (Table 2).

The first question was related to food and agriculture careers. Students were asked: “When considering a career related to food or agriculture, what first comes to your mind and what do you think most people would think is a food or agriculture related career?” The students were asked to justify why they chose those answers. A word summary (literal code) and emerging theme were generated from the responses (Table 1).

From the recruiting process, students were aware that FS careers were a focus of the investigation. Therefore, they may have emphasized FS in their answer. Their responses provided insight as to what first comes to their mind, along with an explanation of their response. Overwhelmingly, the most common career identified was farming and ranching (n=13). The students listed additional

**Table 1. Focus Group Questions used to generate data (discussion) among undergraduate students (n=20) in a food safety related major.**

Questions	Descriptive Analysis of Data – Emerging Themes
1) When considering a career related to food and agriculture, what first comes to your mind, and what do you think most people would think is a food or agriculture related career?	<ul style="list-style-type: none"> <li>• Student view – farming and ranching - positive view of feeding the world and nutritious choices</li> <li>• Perception of general public view – farming and ranching; foodservice/grocery stores - negative view of agriculture – GMO, animal welfare</li> </ul>
2) Think of your high school science class and/or teachers. How critical was this experience in directing you to the career path you have chosen?	<ul style="list-style-type: none"> <li>• Six students identified agriculture classes and FFA, ignoring the reference to science class.</li> <li>• Eight students majoring in courses related to biotechnology and microbiology recognized science as preparing them for college, and less critical in directing their career path.</li> </ul>
3) Consider the various life experiences you had while in high school and during your first year of college. How do you think these experiences influenced your choice for a major in college?	<ul style="list-style-type: none"> <li>• Growing up on a farm or ranch (most predominant answer) and a passionate response</li> <li>• Extracurricular activities of 4-H and FFA</li> <li>• Opportunities to experience career of interest (i.e. job shadowing)</li> </ul>
4) Looking ahead to the day you receive your bachelor’s degree, what type of job do you hope to get, and why do you want that type of a job?	<ul style="list-style-type: none"> <li>• Job satisfaction – rewarded by work outcomes</li> <li>• Market forces – secondary</li> <li>• Types of employment varied by major</li> </ul>
5) You have been asked to participate in this group because you have chosen a major area of study that is related to the safety of the food supply. On a scale of 1 to 10 (one being low and 10 exceptionally high), at what level do you think your major is related to the safety of the food that Americans eat every day?	<ul style="list-style-type: none"> <li>• Perceived value of majors in contributing to a safe food supply (highest to lowest):                             <ol style="list-style-type: none"> <li>1. Production Ag and regulatory inspections – dairy, animal and veterinary science</li> <li>2. Preparation – primarily foodservice</li> <li>3. Education – dietetics, agriculture education followed by journalism.</li> </ol> </li> <li>• Dairy ranked the highest (10)</li> <li>• Agriculture journalism was the lowest (3)</li> </ul>

**Table 2. Number of Students in Focus Group Study by Major in College**

Major	Number of Students
Dairy Production	2
Agriculture Education	3
Dietetics	5
Microbiology & Biotechnology	5
Animal Science	5
Hospitality Management	2
Range Science	1

Note: three students had two majors, therefore the sum of all majors (n=23) is greater than the number of participants (n=20).

## Factors Influencing Choice of Food

careers and shared their opinion regarding the impact a specific career has on food, agriculture and FS. The participants shared that a career in agriculture is beyond farming and ranching, such as feeding the world (n=3) and providing nutritious food choices (n=4).

When discussing what the general public thinks is a food and agriculture careers, the most common response was also farming and ranching (n=16). The second most common career response was directly related to the handling of food at the retail level with references made to foodservice or grocery stores (n=9). The students shared 9 different terms (36 postings) when identifying how the general public perceives food and agriculture careers. In contrast, they shared 17 different terms (57 postings) when describing how they perceive food safety careers. Their explanations often described the general public as unaware or misinformed of careers related to food and agriculture. Seven participants provided personal experiences of the general public being uninformed or misinformed.

Several students (n=9) speculated the general public as having a negative perception of food and agriculture related careers. The students volunteered no perceived favorable or positive views of food and agriculture careers by the general public. In contrast, they shared several positive statements (n=7) such as feeding the world or more nutritious foods for their perspective regarding food and agriculture careers. These descriptors were not identified as the general public perception. The students (n=5) shared careers with a strong science and technology foundation such as chemical research, genetically modified organisms (GMO) and biotechnology (n=5). Students did not speculate on the general public's perceiving these types of careers related to food and agriculture.

Two students served as advocates for agriculture while in high school and college. They identified this type of job as a food and agricultural career. A non-agriculture food related major shared concerns regarding large for-profit farms, mistreatment of animals, and the need for labels describing how the animal was raised. There were no responses from the group to the posting provided by this student.

A disconnect was indicated between what students think about food or agriculture careers and how they perceive what the general public thinks. This indication was based on the difference in number and diversity of responses as previously described. A disconnect between the agriculture industry and the general public has been clearly identified by professionals in agriculture and food system. The United States Department of Agriculture (USDA) is addressing this issue through the program Know Your Farmer, Know Your Food. This program is described on the USDA website as a "national conversation about food and agriculture to strengthen the connection between consumers and farmers" (USDA, 2012).

The second focus group question asked the students to think of their high school science class and/

or teachers. How critical was this experience in directing your chosen career path and to explain your answer. The emerging themes from this discussion are provided in Table 1.

The majority of students (57%, n=12) were from a major related to agriculture. Several students (n=5) did not address the question; instead they responded that their high school agriculture class was critical in directing their career path, ignoring the reference to science classes in the question. The responses by these students (n=6) also stressed how important the agriculture teacher was in their career choice. The most common descriptor used for describing their agriculture teacher was "caring".

The students shared the impact of high school science classes on a STEM related career choice were based on the teacher's ability to engage students and the diversity of courses offered. High school science classes (n=8) were identified particularly by students that were majoring in a field of study immersed in science such as biotechnology or microbiology. When referring to science classes, students (n=4) most often identified their science classes preparing them for college. Hegerfeld-Baker, et al. (2014) identified high school classes as influencing students when choosing a STEM major instead of a non-STEM in college. However, the odds ratio reflecting the level of predictability was only slightly positive (1.14,  $P < 0.001$ ).

Four students identified college courses as more influential in directing them to a specific career path in comparison to high school classes. In three instances, animal science was identified. One student decided to not pursue a veterinarian degree after learning in animal science class about the role veterinarians fulfill in animal slaughter. The opportunity to learn more about a career in an introductory college course was valuable to those confirming or changing their major.

Students (n=6) identified FFA as an organization directing their chosen career path by describing FFA as exposing them to a career they desired to pursue. These same students shared definitive statements regarding the role FFA played in their career decision. Agriculture industries have recognized FFA as a key student organization to partner with for students to experience agriculture related careers (AVMA, 2007). A national study comparing FFA to non-FFA high school students identified that FFA members more than non-members plan to attend a four-year college. The same study identified that six of the top ten career choices for FFA members were related to agriculture. In comparison, non-FFA members chose one career related to agriculture (Balschweid and Talbert, 2004).

The third question asked students to consider various life experiences (i.e. jobs, volunteer work, farm life, family, friends, extracurricular activities, etc.) they had while in high school and during their first year of college. They were to describe how they thought these experiences influenced their choice for a major in college.

Three main themes emerged relating to the influence of life's experiences on their chosen career path (Table 1): 1) opportunities to experience a career; 2) extracurricular activities; and 3) growing up on a farm or ranch. Students (n=4) very explicitly described the impact of job shadowing on their career decision. This was similar to research by Hodges and Barbuto (2002) identifying the importance of school counselors creating opportunities for students to experience various careers.

The extracurricular programs identified most often were 4-H and FFA (n=8). Those in non-agriculture majors did not identify FFA (they could have been a member but it was not identified). One student (3-B, Online Focus Group Session [OFGS], February 2013) stated: *"I believe that extracurricular activities and work experiences are what led me to choose the majors I did. While in high school I was very involved in 4-H and FFA, these organizations inspired my interest ... and my job educating people from urban areas about agriculture."* FFA organizations hold career development events for students to explore career opportunities in today's agriculture industry through an inquiry-based problem solving approach.

Nine of the participants explicitly identified growing up on a farm as influential in their career choice, this included students seeking non-agriculture degrees. The experience of growing up on a farm may not be unique in the rural Midwest. Since only 2% of the U.S. Population lives on farms, the experience of growing up on a farm is less common nationally (EPA, 2012a). One student (3-C, OFGS, February 2013) stated the following regarding farm life: *"When you live on a farm, you have many opportunities to experience things that people in the big cities rarely do or maybe even heard of. Life experiences make you who you are today without them you would probably have turned out in a different field or lifestyle than you are right now."*

A report by Goecker, et al. (2010) identified that five percent more college students with expertise in food and agriculture will be needed from 2010 to 2015. Their expertise to agriculture and food systems will be needed at a greater level than in the past. The concern regarding the shrinking pool of young people entering college who grew up on farms and were exposed to agricultural careers is a concern for the agricultural industry (NAS, 2009).

A passion for what they hoped for after completing their degree was evident from the five students identifying a passion or love for an aspect specific to their career choice. These passions were cultivated through experiences primarily achieved in a rural agricultural environment. This is a concern for the agriculture industry since fewer students have the experience of growing up in a production agricultural environment (APLU, 2009; Collins, 2008; Goecker et al., 2010).

The fourth question focused on employment opportunities in their career path. Students were asked to look ahead to the day they receive your bachelor's degree, what type of job did they hope to get and why

did they want that type of job. The overall response was favorable to job satisfaction (Table 1). Indicators related to market forces were shared secondary to job satisfaction.

A primary objective of the investigation was to identify if market forces favorable to agriculture and food science influence the student's career path. Question #4 was developed in a manner to not be suggestive in nature toward market forces. Responses such as job security, long-term ambitions and goals served as indicators that market forces did play a role in decision making. However, the leading responses were connected to the theme of job satisfaction. The results contrasted with a previous investigation by Hegerfeld-Baker, et al (2014) in regard to the level of influence of market forces in choosing a STEM related major. The market forces predictor variable odds ratio (1.976, P < 0.001) was higher than passion for career (1.494, P < 0.01).

Students expressed how their career choice provided an opportunity to positively impact the lives of the people they would work with. Ten students identified helping others as a reason for their chosen career path. A focus group study by Tillberg and Cohoon (2005) reported a similar conclusion in regard to women identifying that a computer programming degree interested them because they could help people, while men were more interested in computer hardware. The results relating to the desire to help people in their chosen career path may be related to the predominant number (90%) of females in this focus group study.

Terms or phrases (n=13) related to helping and working with people were common. Students entering the agriculture industry specifically shared that they wanted to work with producers. For example, a student (1-B, OFGS, February 2013) with plans to be a dairy farm inspector *"liked the idea of being able to interact with farmers and getting to know different operations."*

Passion and love were two words that were shared by those expressing a connection to animals. The students planning to work in dairy production always connected their career with passion and love for animals.

A pattern of opportunity was identified with terms and phrases that related to the types of jobs students were quite certain was waiting for them after finishing their degree (n=4). In all of these situations, the student was going back home. These students did not express any negativity in their responses.

Nineteen of the 20 students described the type of employment they hoped to find after graduation and shared how this first job would evolve toward their career goals. Those striving for internships or veterinary school identified options if they do not get accepted into a program. A career goal for several students (n=6) was to own their business, primarily farming operations. These students described their plan to work hard to eventually reach their career goals. These descriptions were interpreted as an indication of market forces and financial stability by the researcher.

## Factors Influencing Choice of Food

Not one student explicitly identified financial reasons for their career path. The terms money and financial were not mentioned. However, they shared terms or phrases connected to financial stability as indicated by the following statements: *“ag economy is vital to the growth of America; ... industry does well; ... opportunity to return to dairy I worked at in high school; ... take over dairy operation; ... food products become more valuable due to increased safety; ... job openings in two years when I graduate; and, high demand for agriculture educators”* (Students 1-D, 1-A, 1-F, 3-D, 3-B, OFGS, February 2013). These comments were not the leading response when answering this question.

Information from the USBLS reported a 10% increase from 2010 – 2020 along with competitive entry-level salaries (median salary \$58,450). Based on this information, it was expected that students would volunteer comments related to market forces (Gilmore et al., 2006; Goecker et al., 2010; USBLS, 2012). However, terms related to job satisfaction (n=34) were expressed in a more obvious nature and more often.

The students identified content and performance goals while pursuing their respective bachelor degrees (Lent and Brown, 2006). Market forces such as enticing salary packages were not identified. However, as addressed previously, several of the students had speculated on the type of job they hoped to have and where it will eventually lead them. One-third of those responding had plans to own a farming operation or business. Since these businesses were all related to production agriculture, a multi-million dollar investment would be required, particularly related to land values and input costs (SDSU-AES, 2012; EPA, 2012b).

The final question addressed the relationship between their chosen career and the safety of the food supply. The students were first informed that they were asked to participate in this focus group discussion because they have chosen a major area of study related to safety of the food supply. Students were then asked to express on a scale of 1 to 10 (one being low and 10 exceptionally high), at what level did they think their major was related to the safety of the food Americans eat every day and to explain their answer. The students identified a clear distinction to various areas of agriculture; agriculture education versus regulatory, consumer perspective and educating consumers (Table 1).

Those (n=11) involved in livestock related majors (dairy, veterinarian and animal science) gave high values (eight or greater) to their chosen profession regarding the direct impact on the safety of the product they are producing. Non-livestock production majors responded in agreement regarding the responsibility of livestock production in providing a safe food supply.

Dietetics and Ag Education students viewed their majors as contributing to food safety education, and impacting the safety of food secondary to livestock production. Those working with consumers regarding consumer safe food handling practices were higher (seven and eight) and Ag Education ranged from five

to eight. The Ag Educators planned to implement lab exercises connected to FS at the production level of agriculture.

The overall findings for this question were very similar to a survey conducted with 38 economics students from North Dakota State University (NDSU). Their perception of careers related to FS were people directly handling food and food inspectors (Wachenheim and Beauchamp, 2013). The students in the focus group repeatedly recognized policies and regulations that must be met. On a scale of one to ten, they continually rated careers related to food policy and regulations very high, most often a ten, particularly related to the production and inspection of dairy and meat products.

## Conclusions, Implications, Future Research, Limitations

### Conclusions

The results of the focus group process provided additional insight into the predictability of influential factors to choosing a food safety (FS) related major. The focus group was considered homogenous since it consisted of students with FS related majors. The focus groups were discussion based therefore information was descriptive and included insight regarding how the participants were influenced by their life experiences.

Several themes were identified from the responses students shared in their discussion (Table 1). The most pronounced theme was the strong passion participants have for their career path. They were very explicit, particularly the students that had majors related to agriculture. These students did not address the amount of money they hope to make.

The focus group process provided additional insight from previous research by Hegerfeld-Baker et al. (2014) regarding the impact of high school courses. The students were asked to reflect on their high school science class regarding the influence in choosing their career path. The most predominant answer identified their agriculture class in combination with the FFA program as influencing their career path. One student described FFA as an experience that exposed them to a career path bringing them to SDSU for a major they would not have known existed without FFA. They identified their high school science class as preparing and inspiring them to attend college. Additional life experiences students described as influential were growing up on a farm and work experience including job shadowing.

### Implications

According to the survey results from Hegerfeld-Baker et al. (2014) high school classes were slightly positive (1.14, P<0.001) in predicting that a student would choose a food and agriculture STEM major in college. The focus group process provided additional insight regarding the engagement of high school courses. According to student responses, science classes were viewed as

preparing and inspiring them for college. The students identified agriculture classes as teaching them about careers. Bringing agriculture and food STEM concepts and laboratory techniques into high school science classes using an inquiry-based approach exposes more students to food and agriculture careers.

The responses of students support the agriculture and FFA programs in their schools as critical influential factors in their career decisions. As budgets at schools and universities struggle with shortfalls in revenue and rising expenses, non-mandatory programs such as FFA and agriculture education can be targeted for cutbacks. The agriculture industry needs to continually evaluate their involvement with schools, universities, organizations and policy makers to provide the needed support of these programs that are critical to the vitality of their industry and to the safety of the food supply.

The students overwhelmingly shared descriptors related to job satisfaction. This was evident in descriptors such as enjoy, passion, love, privilege, diversity, not boring, helping others, excited, enthusiastic, no regrets and giving back. Students explicitly shared descriptions related to job reward and satisfaction when describing why they chose their specific career path. Understanding how they want to help others or the qualities they enjoy in a career can be useful when developing marketing materials for recruitment of students into programs at universities. The aspect of job demand and potential earnings may be a consideration in the marketing strategy, however job reward and satisfaction may be more important to a student choosing this type of a career path. The SDSU Dairy Science Department captured the various components for marketing a career path through a video on their website, "SDSU Dairy Science – The Cream. And the Crop" (South Dakota State University – Dairy Sciences [SDSU-DS], 2012). The market forces were addressed in the video as well as job rewards and satisfaction.

The need to utilize more than one type of investigation to gather data to set policies, develop curriculums and recruiting materials, was exemplified in the research results. If the survey results from previous work by the researcher (Hegerfeld-Baker et al., 2014) was used to set a policy related to the impact of extra and co-curricular school activities, the decision would not have been favorable to support these types of programs. However, when including the focus group results, the impact of FFA in guiding students to needed careers was very favorable. As described by Krueger and Casey (2009), the focus group process fulfilled added detail to the information generated by a quantitative survey, provided information on participants' attitudes and values, and gained clarity on the impact of personal experiences.

Needs assessments provide qualitative and quantitative data to assist in the decision making process. Focus group studies of this nature should be solely to gather the data needed. The investigative design should not make the decision. The stakeholders will make decisions based on the results of the investigation.

### **Future Investigation**

The differing perspective of agricultural and food careers provided by the students in regard to how they view these careers compared to the general public revealed a need to expand on question #1. Research bringing together students with agriculture and non-agriculture majors addressing differing perceptions may provide insight on how to best address views and values regarding FS, food production and processing.

### **Study Limitations**

The majority of the students in this program were from the production aspect of the food delivery system (57%) and 45% stated growing up on a farm. This was not representative of the general population since 2% of the U.S. population lives on farms (EPA, 2012a). A homogenous focus group study is limiting in scope regarding the population that was studied. Therefore, the results may not be comparable to a university located in a metropolitan environment.

The study consisted of 20 students and 90% were females. The students were from one university and the number of participants was low. However, the most important aspect was reaching saturation (repeated views and values). The results may have been impacted by the high percentage of females.

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## Factors Influencing Choice of Food

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