

## **Elements of an Undergraduate Agricultural Leadership Program: A Delphi Study**

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### **Abstract**

Programs in agricultural leadership are continuing to enjoy success in institutions around the country. To this point, there has been a lack of research conducted to (a) identify objectives for these programs, (b) identify courses that should be taught in these programs, (c) identify the need for and objectives of an internship requirement, or (d) determine future placements of program graduates. This study sought the opinions of 15 agricultural leadership experts from across the nation to address these questions. Although the panel came to consensus on these areas it

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was apparent that the experts in agricultural leadership must continue to work toward national goals and standards for agricultural leadership programs.

## **Introduction**

People with leadership skills are highly sought after by employers, yet in the United States, organizations are finding it difficult to fill leadership positions because of a lack of trained leaders – a leadership void (Figura, 1999; Fritz & Brown, 1998; Hemp, 2008; Kiisel, 2012; Rothkopf, 2009; U.S. Department of Labor, 1999). Compounding this is that it appears college graduates, as a whole, are ineffective leaders, suggesting that the most likely cause of the leadership void is a lack of formal leadership training (Fritz & Brown, 1998; Ricketts & Rudd, 2002). Moreover, graduates from colleges of agriculture are expected to have leadership soft skills (Crawford, Lang, Fink, Dalton, & Fielitz, 2011).

In an attempt to fill this leadership void, departments of agricultural education have begun a concerted effort to train leaders (Fritz & Brown, 1998; Fritz et al., 2003b). Yet, what curriculum should be contained in these programs is still unclear (Brungardt, Greenleaf, Brungardt, & Arensdorf, 2006; Fritz et al., 2003b). Indeed, Sowick (2012) states that more research is needed to determine the needs of leadership education programs. This dearth of information begs the question, “What are the elements of an agricultural leadership program?” To address this, the following questions were posited:

- What should be the objectives of a leadership program?
- What courses should be included?
- What employment options are available for students who look to agricultural leadership as a major?

The purpose of this study was to determine and prioritize the elements required for an undergraduate agricultural leadership program by soliciting input from agricultural leadership education experts. The specific objectives that guided this study were to:

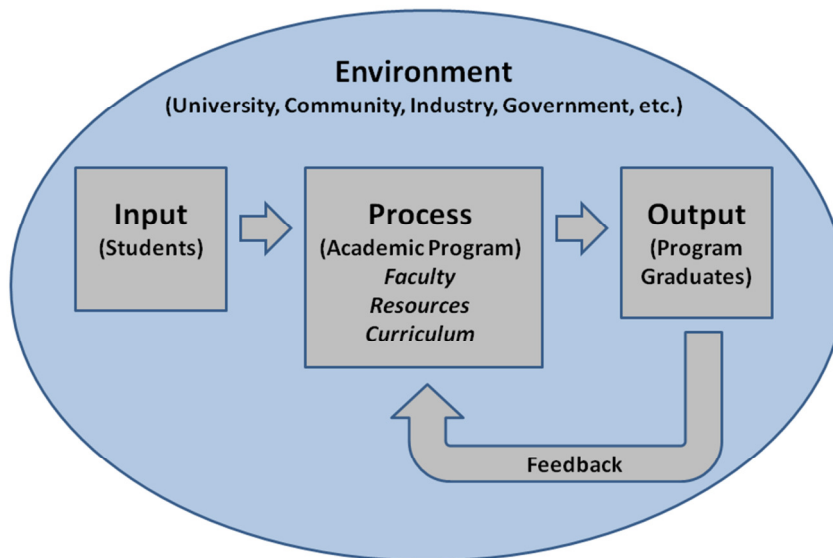
- Identify the objectives of an agricultural leadership program.
- Identify courses for inclusion in an undergraduate agricultural leadership program.
- Determine the need for internships and internship requirements for an undergraduate agricultural leadership program.
- Identify the careers available for undergraduate agricultural leadership program graduates.

## **Theoretical Framework**

Sprecker and Rudd (1997) acknowledged that it is difficult to predict curriculum needs for tomorrow, yet colleges of agricultural and life sciences must attempt to meet this difficult task to ensure the success of our future graduates. Curriculum planning and revision is often neglected by faculty and administrators for lack of an effective method to undertake this effort. Unfortunately, the need for curriculum reform is recognized only after students fail to enroll in the antiquated curriculum. To keep curriculum on target, Diamond (1989) recommended that outstanding practitioners and researchers in the field provide their input and thinking to keep curriculum viable and current.

To address this question, the curriculum model posited by Finch and Crunkilton (1999) was used for this study (see Figure 1). The model is based upon the systems approach. In this application, students are the input entering the academic program. They then enter the process by enrolling in courses based on the program curriculum and at some future point become the output by graduating from the program. Included within the academic program are faculty, resources, and curriculum, all of which are affected by the environment of the university, college, community, and industry. The feedback loop in this systems model consists of feedback from program graduates who offer suggestions for program improvement.

Figure 1  
Program System Model



From Finch and Crunkilton, 1999, *Curriculum development in vocational education and technical education: Planning, content, and implementation* (p. 27).

As seen in the model, Finch and Crunkilton (1999) placed faculty at the core of the academic program because faculty are essential in the *development* and *delivery* of the curriculum. First, faculty are experts in their discipline, possessing a deep knowledge of the subject matter, which is the basis of how they establish the knowledge, skills, and practicum required for degree attainment. Second, they control how the curriculum is delivered to the students; how material is presented, what elements are emphasized, and the type of activities used for knowledge acquisition. With this in mind, faculty members are well equipped to determine what program elements are essential.

Although there are a number of undergraduate programs in agricultural leadership currently in place, this study sought to examine the need for leadership education from a national perspective. With this perspective in mind, the researchers were attempting to frame the strategic thinking of current practitioners and researchers identified as experts in leadership education in the hopes of moving this curriculum toward strategic programming and implementation across the United States.

### Conceptual Frame

Throughout the country 73% of agricultural education departments offer leadership courses and the offerings have been on the rise for more than a decade.

Leadership development has been a part of agricultural education for nearly a century, emerging out of a necessity to train students for advisor responsibilities in FFA and 4-H youth organizations (Fritz & Brown, 1998; Fritz et al., 2003b; Simonsen & Birkenholz, 2010).

Agricultural leadership courses attract a wide variety of students from within and outside of colleges of agricultural and life sciences (Brown & Fritz, 1994; Fritz, Hoover, Weeks, Townsend, & Carter, 2003a). In addition, most agricultural leadership programs have support from their college dean, thus helping to provide sustained growth for these programs (Brown & Fritz, 1994; Fritz et al., 2003a; Fritz et al., 2003b; Fritz & Brown, 1998). Based on the experiences of departments of agricultural education from across the country, adding a leadership component has proven to be beneficial (Fritz & Brown, 1998).

Even still, academic program curriculum can quickly become outdated and, therefore, must be constantly examined in terms of its effects and its effectiveness (Finch & Crunkilton, 1999). Unfortunately, colleges and universities have seldom applied continuous planning principles to curriculum (Briggs, Stark, & Rowland-Poplowski, 2003). Even though curriculum planning is at the heart of academic work (Middlebrooks & Allen, 2009), few studies are available to aid researchers or academic administrators in understanding the dimensions of program planning (Stark, Lowther, Sharp, & Arnold, 1997).

As the discipline of leadership has developed over the years, no national guidelines or frameworks have been established (Brungardt et al., 2006). Similarly, agricultural leadership course offerings across the country show little consistency of courses offered, content within courses, or texts used (Fritz & Brown, 1998; Simonsen & Birkenholz, 2010). Because of these inconsistencies it is essential that a consensus of curriculum essentials be established so programs of leadership may have a benchmark by which they may compare their curriculum.

## Methods

This national study used the *Delphi* technique to determine the elements required for an undergraduate agricultural leadership program. The *Delphi* method was chosen because it is an effective technique to determine consensus from a group of people with diverse opinions (Dalkey, 1969; Stitt-Gohdes & Crews, 2004) and is useful for “formulating group judgment for subject matter where precise subject matter is lacking” (Keegan, 2000, p. 120). The *Delphi* technique has been an effective research method in prior curriculum studies (Bruening & Shao, 2005; Morgan, 2010).

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The population for this study consisted of 19 agricultural leadership university faculty selected from the 2001 AAAE Directory of University Faculty in Agricultural Education (Dyer, 2001). Faculty listed in the directory self-identify their areas of expertise and the individuals selected for this study indicated expertise and experience in leadership instruction. Four individuals declined to participate in the study, thus providing 15 participants. According to Dalkey (1969), a *Delphi* group size in excess of 13 yields a reliability of 0.80 or greater.

The study consisted of three rounds of questions with the participants. All 15 participants completed rounds one and two, and 13 of the participants completed round three. The participants' responses were collected using an electronic, web-based form consisting of questions or statements, text-boxes, and radio buttons. The first round questionnaire consisted of the following open-ended prompts:

- What should the objectives of an agricultural leadership program be?
- What required courses should be included in an undergraduate agricultural leadership program?
- Should an internship be required in an undergraduate agricultural leadership program? If so, what are the objectives of the internship?
- What will a graduate be able to do with a degree in agricultural leadership (i.e., jobs are available for graduates of agricultural leadership)?

Using the constant comparative method (Glazer & Strauss, 1967; Lincoln & Guba, 1985), responses to these questions were sorted and grouped by common answers. These answers were written as statements for round two.

In round two, participants were asked to indicate their level of agreement with each statement using a five-point Likert-type scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Undecided*, 4 = *Agree*, 5 = *Strongly Agree*). After each statement, a text-box was provided for the participants to provide additional comments about the statement. Statements with a mean of 4.0 or greater were kept for round three.

For round three, the participants were asked to use a five-point Likert-type scale to indicate their level of agreement with the statements carried over from round two. As in round two, responses to the statements from round three were analyzed using descriptive statistics. The mean of each question was determined and the responses were sorted by level of agreement. The findings considered reliable included items where the *Delphi* panel reached an 80% level of agreement (4.00/5.00).

## Findings

For the first research objective was to identify the objectives of an agricultural leadership program. The *Delphi* panel identified 26 leadership program objectives at the 80% agreement level (see Table 1). The objective reaching the highest level of agreement was “the student will develop an understanding of personal leadership strengths and weaknesses and how to accentuate their strengths” (4.79/5.00). Additional objectives included “identify and apply contemporary key leadership theories and leadership models” ( $M = 4.71$ ), “develop a personal leadership philosophy” ( $M = 4.64$ ), and “apply leadership theories and practice in a structured, supportive learning environment” ( $M = 4.64$ ). Other objectives included various components of defining, developing, and demonstrating leadership related theories and skills including visioning, goal setting, and ethics.

Table 1  
Mean levels of agreement for objectives for an agricultural leadership program

Objective	<i>M</i>
Develop understanding of personal leadership strengths/weaknesses; how to accentuate their strengths	4.79
Identify and apply contemporary key leadership theories & leadership models	4.71
Develop a personal leadership philosophy	4.64
Apply leadership theories & practice in structured, supportive learning environment	4.64
Define leadership	4.57
Develop decision making skills	4.54
Practice team building skills	4.50
Develop problem solving skills	4.50
Develop a personal vision for leadership	4.50
Effectively discuss ethics in the workplace	4.50
Develop professional human relation skills	4.50
Effectively communicate via public speaking & written communication	4.50
Develop the leadership skill of visioning	4.43
Increase understanding of human interaction in all relationships and tasks	4.43
Demonstrate an understanding of personality types and/or learning styles	4.36
Integrate leadership theory with critical issues in agriculture	4.36
Demonstrate the ability to set achievable goals	4.29
Develop critical thinking skills	4.29
Demonstrate the ability to delegate effectively	4.29
Develop the leadership skill of recognizing others	4.21
Communicate effectively through presentations	4.21
Demonstrate the ability to lead change in organizations	4.14
Demonstrate effective time management skills	4.14
Demonstrate the steps required for conflict resolution	4.07
Demonstrate the ability to empower others	4.00
Demonstrate the ability to enable others	4.00

Note: Scale anchors were 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Undecided*, 4 = *Agree*, 5 = *Strongly Agree*.

The second objective was to identify the courses for inclusion in an agricultural leadership undergraduate degree program (see Table 2). The responses receiving the highest level of agreement were “Introduction to leadership theory and practice” ( $M = 4.57$ ), followed by “Team building/working with teams and groups” ( $M = 4.43$ ) and “Capstone course to allow students to present their leadership discoveries” ( $M = 4.43$ ). Five other courses also met minimum level necessary to be considered reliable.

Table 2  
Mean levels of agreement for courses for inclusion in an agricultural leadership program

Course	<i>M</i>
Introduction to leadership theory and practice	4.57
Team building/working with teams and groups	4.43
Capstone course to allow students to present their leadership discoveries	4.43
Personal communication techniques for leaders	4.14
Personal leadership development (intrapersonal leadership)	4.14
Seminar related to leadership in the food, agricultural, and natural resource sciences	4.14
Organizational leadership theory (systems thinking)	4.00
Leadership ethics	4.00

Note: Scale anchors were 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Undecided*, 4 = *Agree*, 5 = *Strongly Agree*.

For objective three, participants were asked to address the topic of internships in leadership education programs, and they overwhelmingly agreed that internships should be a requirement for agricultural leadership students (11 of 13 stated internships should be required). They were then asked to identify internship objectives and 14 were identified to guide leadership internships (see Table 3). The internship objective receiving the highest level of agreement was “Students will practice their personal leadership behaviors in a structured but safe real-world learning environment” ( $M = 4.69$ ). Next was “Apply leadership and learning theories to the educational, training, and development needs of the agricultural business, organization, or governmental agency” ( $M = 4.62$ ), followed by “Apply a variety of verbal, written, and interpersonal communication techniques” ( $M = 4.62$ ).



Table 3  
Mean levels of agreement for agricultural leadership internship student objectives

Objective	<i>M</i>
Practice personal leadership behaviors in a structured but safe real-world learning environment	4.69
Apply leadership and learning theories to the educational, training, and development needs of the agricultural business, organization, or governmental agency	4.62
Apply a variety of verbal, written, and interpersonal communication techniques	4.62
Complete the outcomes identified by the intern, the intern supervisor, and the university coordinator	4.54
Compile a portfolio to document accomplishments during the internship	4.54
Practice, analyze, and assess interpersonal skills	4.54
Practice and analyze team building skills and organizational development skills	4.38
Practice ethical decision making	4.31
Participate in business meeting and project meetings	4.31
Learn and operate under office/business protocol	4.15
Shadow different employees in the company	4.15
Identify the communication systems in the company	4.08
Attend professional development sessions/programs	4.00
Visit clients of the cooperating organization	4.00

Note: Scale anchors were 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Undecided*, 4 = *Agree*, 5 = *Strongly Agree*.

Objective number 4 was to identify careers available for agricultural leadership program graduates. Table 4 lists the 22 possible career paths that achieved 80% agreement. “Commodity groups and breed associations” and “Youth leadership positions” received the greatest level of agreement ( $M = 4.67$ ). Other suggested career paths included “Community organization leadership,” “Government agencies,” and “FFA director/secretary” ( $M = 4.53$ ), and “Non-profit organization leadership” ( $M = 4.47$ ).

Table 4  
Mean levels of agreement with career paths identified for agricultural leadership graduates

Career path	M
Commodity groups and breed associations	4.67
Youth leadership positions	4.67
Community organization leadership	4.53
Work for government agencies responsible for leadership in agricultural issues	4.53
FFA executive director/secretary	4.53
Non-profit organization leadership	4.47
Agricultural policies and legislation (legislative aide)	4.40
Organization/association representative	4.40
Business leadership	4.33
Volunteer organization leadership	4.26
Employee leadership training and education	4.27
Sales and marketing	4.27
Government agencies	4.20
University student activities director	4.20
Public relations	4.13
Event planning	4.13
Service	4.13
Management	4.07
State and national policy positions	4.07
Extension	4.07
Lobbying	4.07
Human resource development	4.00

Note: Scale anchors were 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Undecided*, 4 = *Agree*, 5 = *Strongly Agree*.

## Conclusions and Recommendations

A *Delphi* panel of 13 experts in agricultural leadership completed all three rounds of this study to arrive at consensus in four critical areas for undergraduate agricultural leadership programs. Agricultural leadership program objectives, courses offered, internship objectives, and career paths for agricultural leadership graduates were addressed in this study.

The panel reached consensus on 26 objectives of an undergraduate agricultural leadership program, with 12 objectives reaching a 90% (4.50/5.00) agreement level. Several of the key objectives relate to developing an understanding of personal leadership strengths and weaknesses. At the foundation of all quality leadership degree programs must be for each student to understand their personal leadership traits and know how to accentuate these individual skills for the success of a team or organization. Future research should be conducted to determine the best practices for achieving this outcome.

Consensus was reached on eight courses to be included in an undergraduate agricultural leadership program: “leadership theory and practice,” “team leadership,” “capstone experience,” “communication,” “intrapersonal leadership,” and “organizational theory.” Several of the courses, such as “ethics” and “organizational theory,” are relatively clear in their intended content. Conversely, some of the course titles are ambiguous and beg a clear definition of intended course content and objectives. However, the list provided in Table 2 may serve as a helpful guide as faculty decide what types of courses should be included in an ideal undergraduate agricultural leadership degree program. Future research should seek to compare course offerings of premier leadership programs and clarify objectives for the vaguer titled courses.

The vast majority of the panel (11 of 13) agreed that internship programs were an important requirement for undergraduate agricultural leadership students and identified numerous objectives to guide the internship experience. Again, as in the overall program objectives, there was a broad range of objectives ranging from the very specific (“compiling a portfolio”) to the very broad (“apply leadership and learning theories”). The wide range of objectives could prove problematic for faculty developing leadership internship programs. However, the objectives listed in Table 4 may serve as an invaluable starting point as faculty work to outline an appropriate internship program and offer opportunity to customize the objectives based upon the needs of the student and organization involved. The most agreed upon internship objective was to “practice personal leadership behaviors in a structured but safe real-world learning environment.” Combined with the overall leadership program objective of “applying leadership theories and practice in a structured, supportive learning environment” shows a need to carefully select internship sites and consider students’ past experiences, abilities, and interests when making placements.

Completion of a leadership program does not automatically qualify a student as a leader. The agreed upon objectives make it clear that real world practice and application are vital components of true leadership development. While the internship experience should provide the necessary application and practice, further study should be conducted on the mentor/mentee relationships involved in agricultural leadership internship experiences to provide insight into planning the most beneficial pairings of student and internship organization.

As with program and internship objectives, the range of potential career paths was great. The panel identified careers in 22 different areas from the very specific (e.g., “FFA executive secretary”) to the broad (e.g., “governmental agencies”). One concern among faculty with the agricultural leadership degree is the future placement of graduates. Although a lengthy list helps to alleviate some of the

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concern for graduate placement, it appears leadership graduates can fill any number of positions available at the time of graduation. The career areas reaching the highest level of agreement may be helpful to consider as students and faculty identify potential internship areas. In addition, the identified career areas could prove useful in promoting undergraduate agricultural leadership programs to attract both participants and supporters.

This study implemented the recommendation of Diamond (1989) to solicit feedback from expert practitioners for the purpose of keeping curriculum current. In order to fully realize the feedback portion of the Program System Model (Finch & Crunkilton, 1999), further steps should be taken to assess perceptions of graduates of agricultural leadership programs. Additionally, impacts from the environment portion of the Program System Model should be addressed by consulting industry stakeholders. Considering the importance indicated for the internship portion of a leadership program and the plethora of potential career paths identified by panelists, further insight could be gained from an analysis of industry expectations pertaining to graduates from agricultural leadership programs. With the need for leadership skills in new graduates established (Crawford et al., 2011; Fritz & Brown, 1998), it is important to not become focused on eliminating the leadership void to the detriment of technical skills in new graduates. The proper balance needs to be defined, with input from industry and graduates of agricultural leadership programs, applied to the foundation developed in this study and implemented by faculty experts in agricultural leadership.

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**Rick D. Rudd** is Professor and Head in the department of Agricultural and Extension Education at Virginia Tech. While at the University of Florida (1994-2006) he was the director of the Institute of Food and Agricultural Sciences (IFAS) Teaching Resource Center and directed the LEAD-IFAS program. Rick's professional accomplishments include receiving the Association of Leadership Educators Distinguished Service and Leadership award, receiving the North American Colleges and Teachers of Agriculture Teaching Award of Merit, and being named a national winner of the USDA teaching award. Dr. Rudd's research interests include teaching for critical thinking and organizational leadership.

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