

Characteristics of U.S. Agricultural Communications Undergraduate Programs

Jefferson D. Miller, Morgan M. Large, K. Jill Rucker,
Kate Shoulders, and Emily B. Buck

Abstract

This study characterized agricultural communications undergraduate programs nationwide. A total of 40 undergraduate agricultural communications programs were identified via the National Agricultural Communicators of Tomorrow database, Internet searches, and previous academic program research, and their existences were verified via multiple sources. Objectives included creating an accounting of existing programs, describing the programs' demographics, and identifying top programs. This study employed a census approach and used a descriptive survey design, including both quantitative and structured qualitative questions. The quantitative data were analyzed via descriptive statistics. A total of 26 respondents — faculty representing U.S. undergraduate agricultural communications programs — participated in this study. An increase in the number of academic programs across the U.S. was observed, compared to the last similar study published in 2000, suggesting an increase in popularity and student demand, which is most likely a result of an increase in industry demand for agricultural communications graduates. While programs varied in size and age, most faculty respondents projected an increase in enrollment in their undergraduate programs. Future studies characterizing the discipline should be conducted on a more frequent, standardized schedule, and improved participation in the study should be a goal. National curriculum studies also should be conducted to tie program characteristics and instructional methodologies to program success and to correlate program characteristics and demographics.

Key Words

Agricultural communications, academic programs, curriculum development, program development, and program evaluation

Introduction

With a history that can be traced back to the colonial times in the U.S., the profession of agricultural communications has developed and expanded, just as the media used to communicate about agriculture have changed and advanced over time (Telg & Irani, 2012). As the profession grows, driven by the demand for communicators to assist with advocacy and technology transfer (Bonnen, 1986), so does the enrollment in post-secondary agricultural communications academic programs (Weckman, Witham, & Telg, 2000a). In 2000, Weckman, Witham, and Telg published the results of their sample survey of 22 agricultural communications academic programs, which found the number of students majoring in agricultural communications in programs across the nation ranged from four students to 115 students, and the average number of students for academic departments was 36.63. Nine years earlier, in 1991, 30 agricultural communications programs across the country were

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identified (Doerfert & Cepica, 1991). Both Doerfert and Cepica's work and Weckman, Witham, and Telg's work noted the continued growth of the academic discipline. As the discipline grows, the relatively small group of faculty who teach and conduct research in it are challenged to prioritize their time among increasing responsibilities, including teaching, advising, recruitment, mentoring, club sponsorship, and placement of graduates (Weckman, Witham, & Telg, 2000a). Because of these ever-increasing responsibilities, a need exists to examine program growth with an eye toward managing it thoughtfully.

Acquah's (2010) academic program growth model proposed a collection of types of life cycles for academic programs in higher education. The model, simple as it is, includes several types of curves representing the stages of an academic program's life cycle. The life cycles of most programs follow a traditional bell curve, but Acquah suggests some programs may follow an s-shaped cycle-recycle curve (see Figure 1). Understanding the academic program life cycle enables higher education professionals to evaluate their programs' current stage in the life cycle and readily prepare for the next step in program development. Therefore, if the agricultural communications discipline can identify an applicable model (bell or s-shaped curve), it can more easily predict future growth patterns of programs and their various stage of growth.

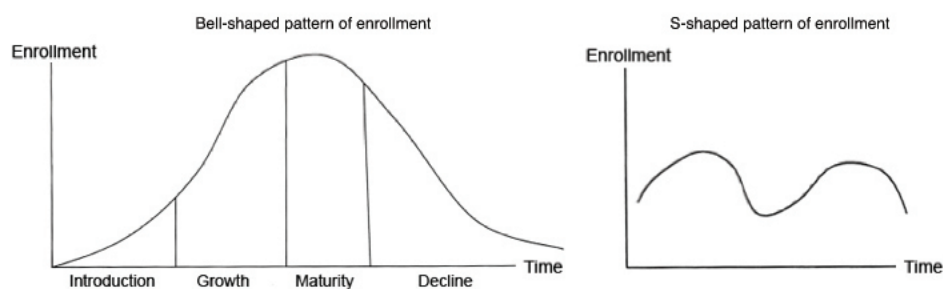


Figure 1. Bell- and s-shaped patterns of enrollments, adapted from Acquah (2010).

Academic literature in the agricultural communications discipline (Doerfert & Miller, 2006; Miller, Stewart, & West, 2006; Morgan, 2012) has highlighted the need for agricultural communications curriculum to be systematically reviewed and updated. This process would allow programs to evolve with purpose, leading to stronger programs and better-prepared students entering the workforce. The concept of describing program growth patterns was alluded to in a study conducted 20 years ago by Terry, Vaughn, Vernon, Lockaby, Bailey-Evans, and Rehrman (1994, p. 24). Their study, which resulted in the development of a guidebook for new and growing programs across the U.S., exemplified the value of conducting a thorough review of agricultural communications programs every few years to reevaluate and make changes to the agricultural communications curriculum. Terry et al. analyzed the opinions of leaders from the agricultural communications profession and established the undergraduate agricultural communications curriculum should include coursework in 28 disciplines and 89 specific competencies. Additionally, over the last four decades, numerous institutional, regional, and national agricultural communications curriculum studies have been conducted (Bailey-Evans 1994; Ettredge & Bellah, 2008; Fryar & Miller, 2006; Irani & Scherler, 2002; Kroupa & Evans, 1973; Reisner 1990; Sprecker & Rudd, 1997; Sprecker & Rudd, 1998; Weckman, Witham, & Telg, 2000a and b). However, literature fails to note a more recent comprehensive assessment of agricultural communications undergraduate programs since 2000. Therefore, it is clear that an

Purpose & Objectives

The purpose of this study was to describe and characterize agricultural communications undergraduate programs. The following research objectives guided the study:

1. To create an updated account of existing national agricultural communications academic programs.
2. To describe demographic characteristics of national agricultural communications programs and describe potential trends in the discipline.
3. To identify the best agricultural communications academic programs as valued by agricultural communications faculty from programs across the country.

Methods

The data reported in this article resulted from a larger project, which was a mixed-methods descriptive examination of agricultural communications undergraduate programs, employing both quantitative and qualitative survey research and focusing not only on program demographics but also on faculty, faculty support, and curriculum. However, this article reports only the quantitative data describing the demographics of the identified programs.

Subjects

The subjects were agricultural communications faculty and administrators from colleges and universities in the United States. Programs falling under the umbrella of agricultural communications included those that offered majors, minors, concentrations, specializations, emphases, and/or options. Existing agricultural communications academic programs were first identified from the National Agricultural Communicators of Tomorrow's (ACT's) membership databases from 2001 through 2013, from the Association of Public and Land-Grant Universities (APLU) membership roster, and from online searches. ACT is the premier college student organization for agricultural communicators. Though not every academic program has an ACT chapter, the national organization maintains the most up-to-date list of programs in the United States. Once academic programs were identified from the ACT database, the APLU website was used to identify additional universities with agricultural communications programs. The APLU website acted as a starting point to lead to institutional websites. Websites belonging to the institutions that were members of APLU were searched and reviewed for the presence of an agricultural communications program via degree options offered. Web searches were also conducted to identify programs and corroborate the existence of previously identified programs. Terms used in keyword searches included "agricultural communications," "agricultural communications degree," and "agricultural communications degree program." Some institutions were contacted directly via personal communication (telephone or email conversations) to verify the presence of a program in instances where program existence may have been uncertain. For triangulation purposes, all programs were verified by more than one method. Additionally, the snowballing method, as described by Ary, Jacobs, and Razavieh (1996), was employed during surveys to further identify programs not identified by previous methods. The snowballing technique involved asking survey participants to name any additional programs they were aware of that might not be in the database or easily accessible via web searches. Finally, a few programs were identified and included in this study as a result of having been identified in another recent pedagogical study by Ahrens (2014). In all, 40 programs recognized as agricultural communications were identified. (Eight more programs were identified serendipitously after the survey and were verified by the same

methods. This fact and related details are noted below Table 1.)

Unit heads or equivalent faculty members overseeing the agricultural communications programs were asked to choose the most appropriate faculty member, based on his or her institutional knowledge, to participate in the survey.

Survey Instrumentation and Administration

The survey instrument consisted of a collection of researcher-developed questions as well as questions from previous instruments used in similar research. The survey consisted of 64 questions and included Likert-type, rank-order, fill in the blank, and open-ended questions. The questions reported upon in this article were guided by two constructs: (1) basic program information and (2) perceptions of model programs. To ensure stability of the instrument over time, test-retest reliability was calculated using data from a pilot test of the survey. The Cronbach's alpha calculated for the instrument was .818. The closer the Cronbach's alpha level is to 1, the more reliable the instrument (Gliem & Gliem, 2003). A coefficient of .7 and above is acceptable for proving reliability of the instrument (George & Mallery, 2003). Additionally, academic faculty — experts in agricultural communications involved in conducting the study — reviewed the instrument for content and face validity. Prior to the pilot test, cognitive interviews were conducted with qualified faculty members (but who were not selected to participate as subjects in the actual study). Their feedback led to further improvements in the validity and reliability of the instrument. The instrument was deemed valid for content and face validity both for the pilot test and actual study, and minor changes were made to the wording of the questions as a result of the cognitive interviews and pilot test. Following the recommendations of Dillman (2007), a series of emails was used to contact all identified subjects between March 18 and March 31, 2014. The emails contained a link to the online survey, created and offered through Qualtrics™.

Data Analysis

After the administration of the surveys, a quantitative analysis of the data was performed. The answers to Likert-type questions were reported as frequencies and percentages. A simple point system was developed to report the responses related to subjects' perceived top five agricultural communications academic program. A first-ranked program was awarded five points, a second-ranked program four points, and so on.

Results

Identification of Programs

A total of 40 programs across the U.S. were identified and verified as having an agricultural communications undergraduate program. A total of 26 subjects representing their programs responded to the survey, resulting in a 65% response rate. A total of six respondents chose to have their identities remain anonymous. Therefore, these programs were assigned letter identifiers A-F in Tables 2 and 3.

Table 1 identifies all 40 of the verified agricultural communications programs and the method by which their existence was most recently confirmed as of May 2014. The methods of verification included examination of the program's website, personal communication with a representative of the program, and the presence of the program in a recent agricultural curriculum study by Ahrens (2014).

Table 1

Identified Agricultural Communications Programs (N = 40)

Institution	Final Method
Auburn University	Institutional website
California Polytechnic State University	Institutional website
Clemson University	Personal verification
Connors State College	Institutional website
Cornell University	Institutional website
Fresno State University	Institutional website
Iowa State University	Institutional website
Kansas State University	Institutional website
Louisiana State University	Institutional website
Michigan State University	Personal verification
Mississippi State University	Personal verification
Murray State University	Institutional website
New Mexico State University	Institutional website
North Dakota State University	Institutional website
Northwest College (Wyoming)	Institutional website
Ohio State University	Institutional website
Oklahoma State University	Institutional website
Pennsylvania State University	Institutional website
Purdue University	Institutional website
South Dakota State University	Institutional website
Southern Illinois University	Institutional website
Tarleton University	Institutional website
Tennessee Tech University	Institutional website
Texas A&M University	Institutional website
Texas Tech University	Institutional website
University of Arkansas	Institutional website
University of Florida	Institutional website
University of Georgia	Institutional website
University of Idaho	Institutional website
University of Illinois at Urbana-Champaign	Institutional website
University of Kentucky	Institutional website
University of Minnesota	Institutional website
University of Missouri	Institutional website
University of Nebraska-Lincoln	Institutional website
University of Tennessee	Ahrens, 2014
University of Wisconsin-Madison	Institutional website
University of Wisconsin-River Falls	Institutional website
University of Wyoming	Institutional website
Utah State University	Ahrens, 2014
West Texas A&M University	Ahrens, 2014

Note: After the conclusion of this study in May 2014, eight more institutions with programs were identified serendipitously and confirmed via the same methods used in the study. They included Casper College, Colorado State University, Redlands Community College, Arkansas Tech University, Eastern Oklahoma State College, Illinois State University, University of Wisconsin-Platteville, and Sam Houston State University. This brought the total of confirmed agricultural communications undergraduate programs to 48.

Program Demographics

The second objective of this study was to describe the identified programs. Tables 2 through 4 provide demographic data pertaining to the programs responding to the questions ($N = 26$). Table 2 provides basic program information, including name of program, college and department in which the program is housed, and position in the organizational structure. Table 3 includes the year the agricultural communications program began at each institution along with the academic degree awarded to students. Table 4 displays responses describing estimated current, historical (last five years), and projected (next five years) program enrollment, according to the participating faculty. Most respondents referred to their programs as *agricultural communications* or a close variant, and most reported programs were housed in colleges of agriculture. Seventeen of the respondents reported their programs offered a full major in the discipline, while others reported offering concentrations, emphases, specializations, options, minors, or combinations of all these. Sixteen of the 26 programs responding reported being housed in departments with *agricultural education* or some close variant in the departmental name.

Of the responding programs, a total of 88.5% offered a Bachelor of Science degree, while 7.7% offered a concentration/specialization/emphasis/option of a bachelor's degree. It is also noteworthy one program reported offering an Associate of Science degree. Of the programs surveyed, Texas A&M reported having the oldest agricultural communications program, established in 1918. The youngest program was established in 2009. (The respondent from this program chose to keep his/her responses anonymous.)

Table 4 shows each responding institution's estimates of current undergraduate student enroll-

ment totals, past enrollment trends, and future enrollment trends. Historical enrollment trends were based on the respondent's description of the last five years (2009–2014), and projected enrollment trends were based on respondents' estimated projections for the next 5 years (2014–2019).

The average student enrollment per institution was 69. Responses indicated 26.9% of the institutions' student enrollment numbers had remained constant over the past five years, whereas 73.1% of institution's student enrollment had increased. A total of 84.6% of respondents reported their programs plan to increase student enrollment numbers in the future, and 8% projected student enrollment numbers would remain constant over the next five years. No respondents reported a decrease in program enrollment over the last five years, nor did any respondents predict a decrease in student numbers in the coming five years.

Programs offering majors in agricultural communications ($n = 14$) reported graduating an average of 23.9 undergraduate students per year; programs with minors, 8.8 students; and programs with concentration/specialization/emphasis/option only reported 6.0 students. Agricultural communications majors were perceived as more likely to find a job within agricultural communications, while minors were viewed as more likely to find jobs in other aspects of agriculture outside the communications discipline. Students graduating from a concentration/specialization/emphasis/option program were also viewed as more likely to find a job outside agricultural communications.

Though the focus of this portion of the study is on the demographics of the programs, considerable amounts of data were collected on the characteristics of the programs' faculty. A more complete explanation of these characteristics will be reported in a future article, but basic faculty characteristics are germane to describing the programs across the nation. Programs varied somewhat in number of faculty, tenure/non-tenure track positions, gender and rank. Across the U.S., programs averaged 2.16 full-time faculty per program and .45 part-time faculty, with an average of 1.8 males and 2.4 females. Among 20 responses to a question about tenure track positions, the programs employed 10 full professors, 9 associate professors, 13 assistant professors, and 16.5 instructors. On average across all responding programs, full professors taught 2 courses per semester/quarter, associate professors 3.5 courses, assistant professors 2.6 courses, and instructors 2.6 courses. Furthermore, 77.2% of responding institutions ($n = 17$) planned to hire new faculty within the next five years, while 22.8% ($n = 5$) did not plan to hire any new faculty. Six programs (28.5% of the respondents to this question) predicted losing faculty members to retirement or resignation in the next five years; 15 (71.5%) did not anticipate faculty loss.

Table 2
Basic Program Information (N = 26)

Institution	Name of Program	College Housed	Department	Position in Organizational Structure	Degree Type
Program A	Agricultural Communications	College of Agriculture	It is an interdepartmental (multidisciplinary) program overseen by an appointed faculty advisory group.	Shared program housed by more than one unit	Major
Cal Poly State University	--	College of Agriculture, Food and Environmental Sciences	Ag Education and Communication	Program in multi-program unit	Major, Minor, Concentration/ specialization/ emphasis/ option
Clemson	--	--	The School of Agricultural, Forest, and Environmental Sciences in the College of Agriculture, Forestry and Life Sciences	It is one option of three in Ag Ed, others are teaching option and leadership	Concentration/ specialization/ emphasis/ option
Connors State College	Agricultural Communications	N/A	Division of Agriculture	Program in multi-program unit	Major
Kansas State University	Agricultural Communications and Journalism	College of Agriculture	Communications and Agricultural Education	Academic unit that also houses the service group	Major
Program B	Agricultural Communication	School of Agriculture	School of Agriculture	Program in multi-program unit	Major
New Mexico State University	Agricultural Communications	Agricultural, Consumer and Environmental Sciences	Agricultural and Extension Education	Program in multi-program unit	Concentration/ specialization/ emphasis/ option
Program C	Agricultural Communication	College of Arts, Humanities, and Social Sciences	Department of Communication	Program in multi-program unit	Major, Minor
Ohio State University	Agricultural Communication	College of Food, Agriculture and Environmental Sciences	Ag Communication, Education, Leadership	Program in multi-program unit	Major, Minor
Oklahoma State University	Agricultural Communications	College of Agricultural Sciences and Natural Resources	Agricultural Education, Communications and Leadership	Program in multi-program unit	Major
Pennsylvania State University	Agricultural Communications	College of Agricultural Sciences	Agricultural Economics, Sociology, and Education	Program in own academic unit	Minor
Purdue University	Agricultural Communication	College of Agriculture	Department of Youth Development and Agricultural Education	Program in multi-program unit	Major

South Dakota State University	Agricultural Communications	College of Agriculture & Biological Sciences	Teaching Learning and Leadership	Program in service unit	Major
Southern Illinois University	Agricultural Communications	College of Agricultural Sciences	Dept. of Plant, Soil and Agricultural Systems	Program in multi-program unit	Concentration/ specialization/ emphasis/ option
Texas A&M University	Agricultural Communications and Journalism	College of Agriculture and Life Sciences	Agricultural Leadership, Education, and Communications	Program in multi-program unit	Major
Texas Tech University	Agricultural Communications	College of Agricultural Sciences and Natural Resources	Department of Agricultural Education and Communications	Program in own academic unit	Major, Minor
University of Arkansas	Agricultural Communications	Dale Bumpers College of Agricultural, Food and Life Sciences	Agricultural Education, Communications, and Technology	Program in multi-program unit	Minor, Concentration/ specialization/ emphasis/ option
University of Florida	Communication and Leadership Development	College of Agricultural and Life Sciences	Agricultural Education and Communication	Program in own academic unit	Major, Minor
Program D	Agricultural Communication	College of Agricultural and Environmental Science	Agricultural Leadership, Education and Communication	Program in own academic unit	Major
University of Idaho	Agricultural Science, Communication, and Leadership	College of Agricultural and Life Sciences	Department of Agricultural Education and 4-H Youth Development	Program in own academic unit	Concentration/ specialization/ emphasis/ option
University of Illinois at Urbana-Champaign	Agricultural Communications	College of Agricultural, Consumer and Environmental Sciences and the College of Media	The Agricultural Communications is a freestanding academic unit.	Shared program housed by more than one unit	Major
Program E	Community and Leadership Development	College of Agriculture, Food and Environment	Dept. of Community and Leadership Development	Program in own academic unit	Concentration within a minor
University of Nebraska-Lincoln	Agricultural and Environmental Sciences Communication	College of Agricultural Sciences and Natural Resources	Agricultural Leadership, Education and Communication	Program in multi-program unit	Major
Program F	Life Sciences Communication	College of Agricultural and Life Sciences	Department of Life Sciences Communication	Program in own academic unit	Major
Utah State University	Agricultural Communication and Journalism	College of Agriculture and Applied Sciences	School of Applied Sciences, Technology and Education	Program in multi-program unit	Major
West Texas A&M University	Agricultural Media and Communication	College of Agriculture, Sciences and Engineering	Department of Agricultural Sciences	Shared program housed by more than one unit	Major

Note: Subjects from programs A-F chose to keep their responses anonymous.

Table 3

Years Programs Were Founded and Degrees Awarded (N = 26)

Institution	Year Founded	Degree Awarded
Program A	--	Bachelor of Science
Cal Poly State University	--	Bachelor of Science
Clemson	1999	Bachelor of Science
Connors State College	2006	Associate in Science
Kansas State University	1946	Bachelor of Science
Program B	1995	Bachelor of Science
New Mexico State University	1995	Bachelor of Science
Program C	2009	Bachelor of Science
Ohio State University	1980	Bachelor of Science
Oklahoma State University	--	Bachelor of Science
Purdue University	1971	Bachelor of Science
South Dakota State University	--	Bachelor of Science
Southern Illinois University	2007	Concentration/specialization/emphasis/ option of a B.S. degree
Texas A&M University	1918	Bachelor of Science
Texas Tech University	1992	Bachelor of Science
University of Arkansas	1998	Concentration/specialization/emphasis/ option of a B.S. degree
University of Florida	1993	Bachelor of Science
Program D	2000	Bachelor of Science
University of Idaho	2000	Bachelor of Science
University of Illinois at Urbana-Champaign	1961	Bachelor of Science
Program E	--	Bachelor of Science
University of Minnesota	--	Bachelor of Science
University of Nebraska-Lincoln	--	Bachelor of Science
Program F	2006	Bachelor of Science
Utah State University	2006	Bachelor of Science

Note: Several respondents did not provide a year in which their program was founded. Respondents from programs A-F elected to keep their responses anonymous.

Table 4

Current, Historical (Last Five years) and Projected (Next Five Years) Enrollment (N = 26)

Institution	Current	Historical	Projected
Program A	37	Increased	Increase
Cal Poly State University	130	Increased	Increase
Clemson	8	Remained constant	Increase
Connors State College	10	Increased	Increase
Kansas State University	68	Increased	Remain constant
Program B	60	Increased	Increase
New Mexico State University	30	Increased	Increase
Program C	40	Increased	Increase
Ohio State University	83	Increased	Increase
Oklahoma State University	150	Increased	Increase
Pennsylvania State University	8	Increased	Increase
Purdue University	44	Increased	Increase
South Dakota State University	20	Remained constant	Increase
Southern Illinois University	7	Remained constant	Increase
Texas A&M University	360	Increased	Increase
Texas Tech University	160	Increased	Increase
University of Arkansas	41	Increased	Increase
University of Florida	85	Increased	Increase
Program D	40	Remained constant	Increase
University of Idaho	50	Increased	Increase
University of Illinois at Urbana-Champaign	40	Remained constant	Increase
Program E	--	Remained constant	Remain constant
University of Nebraska-Lincoln	25	Remained constant	Increase
Program F	--	Increased	--
Program A	37	Increased	Increase
Cal Poly State University	130	Increased	Increase

Note: Several respondents did not provide a year in which their program was founded. Respondents from programs A-F elected to keep their responses anonymous.

Identification of Programs Held in High Regard

Table 5 shows a ranking of agricultural communications program across the United States, according to the opinions of 17 subjects who responded to this question. Respondents were asked to identify and rank what they believed to be the top five agricultural communications programs in the U.S. Below are the results of these rankings from the top ranked program to the tenth-ranked program.

Table 5

Top Agricultural Communications Programs (N = 17)

Program	First rank (5 points)	Second rank (4 points)	Third rank (3 points)	Fourth rank (2 points)	Fifth rank (1 point)	Total points
1. Texas Tech University	3	7	1	1	0	48
2. University of Florida	5	1	5	0	3	47
3. Oklahoma State University	4	2	4	3	1	47
4. Texas A&M University	2	3	3	0	2	30
5. Kansas State University	2	2	1	1	1	25
6. Ohio State University	1	0	1	2	1	13
7. University of Arkansas	0	1	0	4	1	13
8. California Polytechnic State University	0	0	1	2	0	7
9. University of Nebraska- Lincoln	0	1	0	0	0	4
10. Purdue University	0	0	0	1	2	4

Texas Tech University's agricultural communications program, which was established in 1992 and had 160 students, emerged as the top-ranked program in this poll. The Texas Tech University program was followed closely by the agricultural communications programs at the University of Florida and Oklahoma State University. The programs at Texas A&M and Kansas State were fourth and fifth. Five points were awarded for each first place vote, four points for second place votes, and so on. Ties were broken based on the number of higher-ranked votes.

Conclusions, Implications, and Recommendations

Forty agricultural communications programs (48, counting programs identified after initial data collection) were identified and verified in this 2014 study. In the early 1990s, Doerfert and Cepica (1991) compiled a list of 30 known agricultural communications programs nationwide. Similar studies (Weckman, Witham, & Telg, 2000a; Weckman, Witham, & Telg, 2000b) were conducted on both a regional (southern) and a national level nearly 14 years ago. A total of 14 programs were reported in the South, of which nine programs responded, and 22 programs responded nationwide, though the total number of existing programs was not reported in that study. Also, these studies did not concretely identify the institutions where the existing programs resided. This made it impossible to track exactly which programs have closed since 2000. Nevertheless, it is clear that while a few programs have been phased out over the last two decades, the data from this study indicate the creation of numerous new agricultural communications programs.

The fact some programs have disappeared while more have emerged should be of specific importance to those who are interested in tracking the discipline's growth. Acquah (2010) noted most academic program lifecycles follow a bell curve, while some programs may follow an S-shaped curve. If U.S. agricultural communications programs follow the more common bell curve, with a net increase of at least 11 new programs over 23 years, it is possible that disciplinary growth nationwide is still on the rise and that the discipline remains on the left side of the bell curve. This increase in

agricultural communications academic programs over the last two decades is a logical result of an increased demand for agricultural communications practitioners and an increase in popularity of the discipline among college students and college-bound high school students. The vast growth of agricultural advocacy and the ever-increasing demand for communicators to aid in technology transfer, as predicted three decades ago by Bonnen (1986), are logical drivers of the growth of the agricultural communications discipline.

This study also indicates agricultural communications programs are diverse in structure and degree type and require a variety of faculty resources. This finding aligns with Reisner's (1990) observation that the most predominant characteristic of agricultural communications programs was variety. This appears to remain true for the most part in 2014.

Additionally, this study found a majority of programs are titled "agricultural communication" or "agricultural communications." Other (fewer) programs are called "agricultural science, communication, and leadership," "agricultural communication and journalism," and "agricultural media and communication." This finding suggests the common theme present among all programs is a focus on agriculture or sciences, with a second, equally important focus on general communications studies. All responding programs were affiliated with a bachelor degree except one (Connors State College), which offered an associate degree in agricultural communications. The emergence of associate degree programs could mark the beginning of a new trend among junior colleges and community colleges. (It is important to note several of the eight programs identified after the initial data analysis included associate's degrees, as well). Also, all but one program was housed in a college of agriculture, so the data clearly indicated colleges of agriculture have remained the home of the agricultural communications discipline.

Student enrollment in these programs varied from seven total students to 360 total students. The average student enrollment per institution was 66 students. The average enrollment in 2014 is more than twice the average of 29 students enrolled in agricultural communications programs as reported by Doerfert and Cepica (1991) and nearly twice the average of 36.6 reported by Weckman, Witham, and Telg (2000a). The increase in student enrollment is further evidence that the discipline's growth may still be on the left side of Acquah's (2010) proposed bell curve. Furthermore, a large majority of programs reported having experienced growth over the last five years and also predicted growth in the next five years. No programs reported decreases in the last five years, and none predicted drops in enrollment in the near future. These data are an indicator the academic discipline of agricultural communications is growing, which supports the notion of a growing industry demand for agricultural communicators. It is apparent students are becoming more aware of career opportunities in the discipline and academic programs are attentive to these opportunities for students, as well.

The first recommendation for further research is to conduct descriptive national studies on a more regular basis to achieve the best and most accurate responses to understand programs' current standing. Program descriptions and evaluations need to be conducted more frequently, with similar constructs measured to allow for longitudinal comparisons. Moreover, it should be noted the information in this research study was self-reported and estimated by agricultural communications faculty. Future studies, to increase the level of accuracy, should attempt to cross check reported information such as program size with official university records, therefore ensuring a more accurate profile of agricultural communications programs. Secondly, a study with a higher response rate would increase the accuracy of describing all agricultural communications programs nationwide. A substantial response rate (63.4%) was obtained in this study, but more responses would lead to a more

accurate census of the discipline. Finally, specific regional studies (North Central, Southern, and Western) should be conducted to describe programs in these specific locations along with identifying their needs and future plans. Variation in program characteristics likely exists among geographic locations due to different regional industry-related needs and overall program demographics. In addition to regional and nationwide studies, agricultural communications academic programs are emerging on an international forefront; they should be described and characterized in future studies.

References

- Acquah, E. H. K. (2010). A growth model for academic program life cycle (APLC): A theoretical and empirical analysis. *The 50th Forum of the Association of Institutional Research*, Chicago, IL: 1-27.
- Ahrens, C. A. (2014). *Understanding communication apprehension and writing apprehension in agricultural communications students: A national study*. (Unpublished doctoral dissertation). Texas Tech University, Lubbock, TX.
- Ary, D., Jacobs, L. C., & Razavieh, A. (1996). *Introduction to Research in Education* (5th ed.). Fort Worth, TX: Harcourt Brace College Publishers.
- Bailey-Evans, F. (1994). *Enhancing the agricultural communications curriculum: A national Delphi study*. Unpublished doctoral dissertation, Texas Tech University, Lubbock, TX.
- Bonnen, J. T. (1986). A century of science in agriculture: Lessons for science policy. *American Journal of Agricultural Economics*, 68(5), 1065-1080.
- Dillman, D. A. (2007). *Mail and Internet surveys the tailored design method*. (2nd ed.) Hoboken, NJ: John Wiley & Sons, Inc.
- Doerfert, D. & Cepica, M. (1991). The current status of agricultural communications/journalism programs in the United States. Center for Agricultural Technology Transfer (CATT), Texas Tech University, Lubbock.
- Doerfert, D. L., & Miller, R. P. (2006). What are agricultural industry professionals trying to tell us? Implications for university-level agricultural communications curriculum. *Journal of Applied Communications*, 90(3), 17-31.
- Ettredge, T. M., & Bellah, K. A. (2008). A curriculum for university agricultural communication programs: A synthesis of research. Paper presented at the Southern Association of Agricultural Scientists, Dallas, TX.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference, 11.0 update* (4th ed.). Boston: Allyn and Bacon.
- Gliem, J. A., & Gliem, R. R. (2003). Calculating, interpreting, and reporting alpha reliability coefficient for Likert-type scales. Midwest Research to Practice Conference in Adult, Continuing, and Community Education. Columbus, OH: 82-88.
- Irani, T., & Scherler, C. (2002). Job satisfaction as an outcome measure of the effectiveness of an agricultural communications undergraduate program. *Journal of Agricultural Education*, 43(1), 12-23.
- Miller, J. D., Stewart, D. M., & West, L. M. (2006). Themes, authors, and citations in the *Journal of Applied Communications*, 2000-2004. Paper presented at the Southern Association of Agricultural Scientists Agricultural Communications Meeting. Quebec City, Quebec, Canada.
- Kroupa, E. A., & Evans, J. (1973). New directions in agricultural communications curricula. *ACE Quarterly*, 56(3), 23-31.

- Morgan, A. C. (2012). Competencies needed by agricultural communication undergraduates: A focus group study of alumni. *Journal of Applied Communications*, 96(2), 17-29.
- Reisner, A. (1990). An overview of agricultural communications programs and curriculum. *Journal of Applied Communications*, 74(1), 8-17.
- Sprecker, K. J., & Rudd, R. D. (1997). Opinions of instructors, practitioners, and alumni concerning curriculum requirements of agricultural communication students at the University of Florida. *Journal of Agricultural Education*, 38(1), 6-13.
- Sprecker, K. J., & Rudd, R. D. (1998). Opinions of practitioners concerning curricular requirements of agricultural communication students at the University of Florida. *Journal of Applied Communications*, 82(1), 31-42.
- Telg, R. W., & Irani, T. A. (2012). *Agricultural communications in action: A hands-on approach*. Clifton Park, NY: Delmar, Cengage Learning.
- Terry, R., Vaughn, P. R., Vernon, J. S., Lockaby, J., Bailey-Evans, F., & Rehrman, M. (1994). *Enhancing the agricultural communications curriculum. A vision for the future*. Research report, Texas Tech University, Lubbock, TX.
- Tucker, M. (1996). Ferment in our field: Viewing agricultural communication research from a social science perspective. *Journal of Applied Communications*, 80(4), 25-41.
- Weckman, R., Witham, D., & Telg, R. (2000a). Characteristics of agricultural communications undergraduate programs: Findings from a national survey. US Agricultural Communicators' Congress, Washington, DC.
- Weckman, R., Witham, D., & Telg, R. (2000b). Southern agricultural communications undergraduate programs: A survey. *Journal of Applied Communications*, 84(4), 41-50.

About the Authors

Jeff Miller, a professor of agricultural communications, is a long-time ACE member. He teaches and conducts research in agricultural communications at the University of Arkansas. Morgan Large is a recent master's graduate of the University of Arkansas' agricultural communications program. She works for Field Agent, a crowdsourcing mobile technology company that provides shopper research for large retail clients. Jill Rucker teaches and conducts research in the fields of agricultural leadership and agricultural communications. Kate Shoulders teaches agricultural education courses and conducts research on teaching methodologies as well as on renewable energy. Emily Buck is an associate professor at The Ohio State University.