Agricultural Education, Communications, and Technology
AFLS-AECT-PhD Assessment Report 2023-24

1. **Contact Name:**
Jeff Miller, AECT Assessment Coordinator
(479) 575-5650
jdmiller@uark.edu

A. AFLS-AECT-PhD Program Goals

The agricultural, food, and life sciences are undergoing a significant shift in their use of technology. This shift has led to the need for graduates prepared to enter career fields in which they work collaboratively with professionals in a wider variety of disciplines than ever before. In an effort to best prepare graduates to enter the interdisciplinary agricultural, food, and life sciences workforce, an interdisciplinary Doctor of Philosophy (Ph.D.) degree in Agricultural, Food, and Life Sciences is proposed (AFLSPH). This college-level Ph.D. program, encompassing four concentration areas, will enable faculty from across the Dale Bumpers College of Agricultural, Food, and Life Sciences (Bumpers College) to best prepare students in a wide array of natural and social sciences within agriculture, food and life sciences. Specific concentrations in Agricultural Education, Communications, and Technology (AECT), Entomology, Horticulture, and Plant Pathology allow students to specialize within a specific discipline, while developing a tailored degree program with electives and committee members from other disciplines. Because students will have a discipline-specific concentration embedded within an interdisciplinary degree program, graduates will be well prepared to enter their concentration-related career field, and at the same time, they will be competitive within a cross-disciplinary job market. Furthermore, the structure of the degree program will give the program the flexibility to change as the needs of employers and students change.

B. Key Expected Outcomes for Graduate Students, 2022-23

AFLS Student Learning Outcomes

1) Students shall have a broad understanding of the important areas of research being conducted in Agricultural, Food and Life Sciences.
2) Students will have an in-depth knowledge base in their chosen concentration.
3) Students shall understand how to formulate testable hypotheses and to design research to test the hypotheses.
4) Students will understand how to conduct appropriate statistical analyses of research data.
5) Students shall have the written and oral communication skills to allow them to effectively communicate research results to the scientific community, industry and the general public.

Student Learning Outcomes for AFLS-AECT PhD Students

1) Students will apply critical thinking skills related to technical agriculture and technology transfer delivery systems.

2) Students will demonstrate advanced problem-solving skills in a supporting area of agriculture, education, technology or communications.
3) Students will demonstrate written and oral communications skills.
4) Students will explain discipline-specific foundational philosophies and principles which undergird formal and non-formal educational delivery systems in agriculture, and develop their own personal philosophy of education.

C. Analysis

Program assessment efforts this year focused on Student Learning Outcome 2: Students will demonstrate advanced problem-solving skills in a supporting area of agriculture, education, technology or communications.

The assessment measure was connected to the dissertation writing process and a rubric used to evaluate AFLS-AECT PhD students' dissertation manuscripts. In 2023 and 2024, four students completed dissertations in the program. Their advisors' dissertation scores averaged 92.5 out of 100. All four scored well over 70%. This meets the ideal target set forth in the departmental assessment plan of 100% of the students scoring 70% or better on the dissertation evaluation rubric (see Appendix A).

Item analysis showed that students' ability to identify and explain a research problem then review the literature on that problem was strong, as was their ability to display research findings. However, areas for improvement included subject recruitment and sampling procedures as well as reporting conclusions and recommendations.

D. Recommendations

Students in the AFLS-AECT PhD program are expected to be experienced researchers, and they are strong in some aspects of research, including identifying research problems and objectives and reviewing the literature, but some appear to struggle specifically with human subject recruitment and sampling as well as with explaining research conclusions and making practical, problem-solving recommendations. A newly revised course offered this summer focusing on social science survey development may help address this problem, as will a renewed focus on subject selection and on writing up the conclusions and recommendations of research during PhD student advising/mentoring sessions.

Appendix A:

AFLS PhD

Concentration in Agricultural Education, Communications, and Technology

Graduate Program Assessment Plan, 2021

(Initial Master Plan)

1. Contact name:

George Wardlow, Professor and Head

(479) 575-2035

wardlow@uark.edu

2. Departmental Mission

The primary mission of the Department of Agricultural Education, Communication and Technology (AECT) is to develop human capital in agriculture. The Department prepares individuals as agricultural technology transfer specialists in either the public or private sector as agricultural educators, extension agents, industry-based trainers, information specialists, or technology management specialists.

3. Program Goals

The agricultural, food, and life sciences are undergoing a significant shift in their use of technology. This shift has led to the need for graduates prepared to enter career fields in which they work collaboratively with professionals in a wider variety of disciplines than ever before. In an effort to best prepare graduates to enter the interdisciplinary agricultural, food, and life sciences workforce, an interdisciplinary Doctor of Philosophy (Ph.D.) degree in Agricultural, Food, and Life Sciences is proposed (AFLSPH). This college-level Ph.D. program, encompassing four concentration areas, will enable faculty from across the Dale Bumpers College of Agricultural, Food, and Life Sciences (Bumpers College) to best prepare students in a wide array of natural and social sciences within agriculture, food and life sciences. Specific concentrations in Agricultural Education, Communications, and Technology (AECT), Entomology, Horticulture, and Plant Pathology allow students to specialize within a specific discipline, while developing a tailored degree program with electives and committee members from other disciplines. Because students will have a discipline-specific concentration embedded within an interdisciplinary degree program, graduates will be well prepared to enter their concentration-related career field, and at the same time, they will be competitive within a cross-disciplinary job market. Furthermore, the structure of the degree program will give the program the flexibility to change as the needs of employers and students change.

AFLS Student Learning Outcomes

1) Students shall have a broad understanding of the important areas of research being conducted in Agricultural, Food and Life Sciences.
2) Students will have an in-depth knowledge base in their chosen concentration.
3) Students shall understand how to formulate testable hypotheses and to design research to test the hypotheses.
4) Students will understand how to conduct appropriate statistical analyses of research data.
5) Students shall have the written and oral communication skills to allow them to effectively communicate research results to the scientific community, industry and the general public.

AECT Concentration Program Outcomes

1) Develop technology transfer specialists with strong communication skills and problem-solving abilities who are prepared to serve diverse populations.
2) Stimulate intellectual capacity in students for integrating multi-disciplinary knowledge, technology and values.
3) Enhance the leadership skills of future professionals in agriculture, food and natural resource careers.
4) Produce graduates with broad technical skills in agricultural science and technology.

Student Learning Outcomes for AFLS-AECT PhD Students

1) Students will apply critical thinking skills related to technical agriculture and technology transfer delivery systems.

2) Students will demonstrate advanced problem-solving skills in a supporting area of agriculture, education, technology or communications.

3) Students will demonstrate written and oral communications skills.

4) Students will explain discipline-specific foundational philosophies and principles which undergird formal and non-formal educational delivery systems in agriculture and develop their own personal philosophy of education.

4. Student Learning Outcome 1. Students will apply critical thinking skills related to technical agriculture and technology transfer delivery systems.

A. Assessment measure 1.

- PhD qualifying exams, dissertations, and defenses will be evaluated for evidence of the application of critical thinking to develop an approach to solving a specific research problem.

B. Acceptable and **Ideal Targets** (not required for indirect measures).

- Minimum score for passing is 60 out of 100 possible points on the qualifying exam and dissertation defense rubrics
- Acceptable target: 70% of AEEDMS students pass dissertation defense
- Ideal target: 100% of AEEDMS students score 70 or above on dissertation defense

C. Key Personnel (who is responsible for the assessment of this measure).

- Jill Rucker, professor and graduate coordinator
- AECT graduate faculty advising AFLS-AECT PhD students and serving on committees

D. Summary of Findings.

TBA

E. Recommendations (not required for indirect measures)

TBA

Student Learning Outcome 2. Students will demonstrate advanced problem-solving skills in a supporting area of agriculture, education, technology or communications.

A. Assessment measure 1.

- PhD qualifying exams, dissertations, and defenses will be evaluated for expertise in problems solving related to a specific research problem.

B. Acceptable and **Ideal Targets** (not required for indirect measures).

- Minimum score for passing is 60 out of 100 possible points
- Acceptable target: 70% of AEEDMS students pass thesis defense
- Ideal target: 100% of AEEDMS students score 70 or above on thesis defense
- Scoring rubrics for Master's thesis defenses are under development

C. Key Personnel (who is responsible for the assessment of this measure).

- Jill Rucker, professor and graduate coordinator
- AECT graduate faculty advising AFLS-AECT PhD students and serving on committees

D. Summary of Findings.

TBA

E. Recommendations (not required for indirect measures)

TBA

Student Learning Outcome 3. Students will demonstrate written and oral communications skills.

A. Assessment measure 1.

- Student blog assignments in the AEEDMS core course AGED 5053: History and Philosophy of Agricultural and Extension education will be evaluated for skill in writing.

B. Acceptable and **Ideal Targets** (not required for indirect measures).

- Minimum score for passing is 60 out of 100 possible points
- Acceptable target: 70% of AGED 5053 students pass
- Ideal target: 100% of AGED 5053 students score 70 or above on the blog assignment
- Scoring rubric for student blog assignment is attached in Appendix A.

C. Key Personnel (who is responsible for the assessment of this measure).

- Jill Rucker, professor and graduate coordinator

D. Summary of Findings.

TBA

E. Recommendations (<u>not required</u> for indirect measures)

TBA

Student Learning Outcome 4. Students will explain discipline-specific foundational philosophies and principles which undergird formal and non-formal educational delivery systems in agriculture, and develop their own personal philosophy of education.

<u>A. Assessment measure 1.</u>

- Student research synthesis writing assignments in AECT 6903 Emerging Scholarship in the Discipline will be evaluated for students' understanding of current research and teaching topics in the broad discipline of agricultural education and will demonstrate how their own research and teaching philosophies and efforts fit into the current state of the discipline.

B. Acceptable and **Ideal Targets** (<u>not required</u> for indirect measures).

- Minimum score for passing is 60 out of 100 possible points
- Acceptable target: 70% of AECT 6903 students pass
- Ideal target: 100% of AECT 6903 students score 70 or above on the research synthesis writing assignment

C. Key Personnel (who is responsible for the assessment of this measure).

- Donna Graham, professor and graduate coordinator

D. Summary of Findings.

TBA

E. Recommendations (<u>not required</u> for indirect measures)

TBA

5. Overall Recommendations

TBA

6. Action Plan

TBA

NOTES:

Other programmatic measures:

Outcome	**Standards**
6-year completion rates	Maintain PhD program completion rate higher than University average
Placement	100% job placement within 6 mo