

**Academic Assessment Report**  
**(Ph.D. / AFLS - Plant Pathology concentration)**  
**University of Arkansas**  
**Academic Year 2020-2021**

**Contact**

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**ENPL Mission**

The mission of the Plant Pathology Program within the department is to educate students and the public about plant diseases and to conduct basic and problem-solving research that results in new knowledge to minimize crop losses, ensure sustainable agricultural productivity and enhance the stewardship of our natural resources and environment.

**Program Goals**

1. Graduates have the discipline-specific knowledge in plant pathology required to perform successfully in appropriate-level private, government, or academic positions.
2. Graduates are able to design original research and interpret research results through statistical inference appropriate for post-graduate continuation of education or professional endeavors.
3. Graduates are able to prepare and synthesize information to effectively communicate, both orally and in writing, with technical or scientific and non-technical audiences.
4. Doctoral Graduates will contribute to the advancement of science through creation of original and independent ideas and research.
5. Graduates demonstrate leadership and teamwork through service to the department, outreach to the public or service in professional societies.

**Learning Outcomes**

1. Students will demonstrate the ability to critically evaluate situations or scenarios to arrive at well thought out and supported decisions and outcomes.
2. Students will demonstrate the ability to work through and solve complex, multidisciplinary problems.
3. Students will demonstrate the appropriate depth and breadth of discipline specific knowledge required to function as expert plant pathology professionals.
4. Communication Skills
  - a. Students will demonstrate the skills required to effectively communicate technical/scientific information in oral platforms to general and professional audiences.
  - b. Students will demonstrate the ability to integrate, organize, and effectively present written reports of technical/scientific information to general and professional audiences.
5. Students will contribute to the advancement of science by acquiring skills (e.g. conceptual, statistics, laboratory or field skills, etc.) to fulfill project requirements to generate original and independent research data.

6. Students will demonstrate leadership and teamwork abilities presentations and outreach activities presented in professional and public venues.

#### **Student Learning Outcome 4a.**

##### **A. Assessment Measure 1.**

- Achievement will be measured during participation in 4 Seminar courses and at the completion of a student's program during the dissertation defense.
- This is a direct measure of student learning.
- Effective oral communication will be evaluated during each of the four Seminar courses a PhD student is required to take during their program. Students present an Introductory Seminar within the first two semesters of their program where they discuss their plans for their program of study. In a following semesters, students present two Topic Seminars of their choosing, but not necessarily related to their project. At the end of their program before they defend their dissertation, students present their Exit Seminar. The four seminar courses will be led by different instructors each semester. All students are expected to participate in Seminar, even if they are not currently enrolled, and are expected to evaluate each speaker.
- Effective oral communication will be evaluated during a presentation and question and answer period during the dissertation defense. The dissertation advisory / examination committee will evaluate the delivery of presentation, effectiveness of visual aids, and quality and organization of content. The committee will also ask questions following the presentation. The length of the question and answer period (number and type of questions posed to the student) will be subject to the committee's discretion based on the student's background and research focus, presentation provided by the student, and responses to questions.
- The rubric used for scoring the dissertation defense is attached to this assessment plan.

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

- Acceptable: 70% of M.S. students presenting Seminars and defending their dissertation will score "proficient" or greater.
- Ideal: 90% of M.S. students presenting Seminars and defending their dissertation will score "proficient" or greater.

##### **C. Summary of Findings.**

- Thirteen ENPL Graduate Students took Seminar in 2019. Eleven students completed the course with a 4.0 average and two students have an Incomplete and will present their Exit Seminar in a future semester. All students who presented their seminar received favorable reviews from fellow students.
- Two students defended their dissertation. Assessment at the dissertation defense by examination committees indicates that most of the PhD graduates are proficient at oral communicators and that developing oral communication skills is likely a strength of the ENPL Department.

##### **D. Recommendations (not required for indirect measures)**

- ENPL graduate students in the Plant Pathology program are required to enroll in PLPA 5001 four semesters during their academic program. They learn how to construct and deliver

effective oral presentations, must deliver a departmental seminar with a passing grade, and often give multiple oral presentations at scientific meetings. Thus, it may not be surprising that, even with a small sample size, graduate students demonstrate proficiency for oral presentation skills.

- During exit interviews, students regularly indicate that the skills they learned during Seminar helped prepare them for their dissertation defense and improved their professional presentations skills. It is recommended that PLPA should continue with the current courses and programs developing oral communication skills.

#### **Student Learning Outcome 4b.**

##### **A. Assessment Measure 1.**

- Achievement will be measured at the completion of a student's program during the dissertation defense.
- This is a direct measure of student learning.
- Effective written communication skills will be evaluated through the written dissertation. The dissertation advisory / examination committee will evaluate the quality and organization of content, quality of references, style, and adherence to convention in writing, attention to detail, and overall effectiveness and credibility in delivery
- The rubric used for scoring the dissertation defense is attached to this assessment plan

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

- Acceptable: 70% of M.S. students defending their dissertation will score "proficient" or greater.
- Ideal: 90% of M.S. students defending their dissertation will score "proficient" or greater.

##### **C. Summary of Findings.**

- Two students defended their dissertation. Assessment at the dissertation defense by examination committees indicates that most of the Ph.D graduates are proficient at written communicators.

##### **D. Recommendations** (not required for indirect measures)

- Opportunities to communicate in written formats to diverse audiences should be encouraged throughout all graduate students' degree plan.

#### **Overall Recommendations**

The assessment results suggest we are preparing students well. However, there is always room for improvement and changes are planned to further enhance the degree programs offered to students to best prepare them for careers.

In 2019, the Ph.D. in Plant Sciences – Plant Pathology ended and a new AFLS Ph.D. with a Plant Pathology concentration will be offered. This consolidation of programs under a single umbrella Ph.D. better positions the AFLS College to continue to offer exceptional graduate programs. Great care was taken to identify and build a plant pathology concentration for this new Ph.D. to meet modern need.

Furthermore, changes will be made to the M.S. degree plan to clearly identify required coursework for the degree and remove credits that have proven unnecessary in the pursuit of a well-rounded education.

### Action Plan

- Integrating graduate students from the ENTO and PLPA programs into joint activities (seminar, outreach efforts, new courses, social events) will improve and expand the experiences of each group.
- Our faculty curriculum committee will make a concerted effort in the coming year to optimize available courses and adapt requirement to best fit the needs of our students.

### Supporting Attachments Rubrics for Assessment Measure 2

Rubric 1: Oral Communication VALUE  
Adapted from AACU rubric for oral communication

*Evaluators are encouraged to assign a one to any work sample or collection of work that does not meet benchmark (cell one) level performance.*

	<b>Capstone 4</b>	<b>Milestones 3</b>	<b>Benchmark 2</b>
<b>Organization Scientific presentations should include all of the following sections: introduction with hypotheses and objectives, methods, results and conclusion.</b>	The presentation includes all the sections and the contents of each section are seamlessly integrated. Each section is clear and concise. The final conclusions are fully supported. Overall, the presentation is memorable.	The presentation includes all the sections and the contents of each section are consistently integrated. Most of the final conclusions are supported. The presentation is very informative.	The presentation includes all the sections and the integration of all the sections is apparent. Some sections are not thoroughly explained. Some conclusions are supported. The presentation is understandable.
<b>Language and use of technical vocabulary</b>	Uses appropriate and precise professional language and, language that is appropriate to the audience.	Mostly uses appropriate and precise professional language and, language that is appropriate to the audience.	Generally uses appropriate and precise professional language, but may not always be appropriate to audience.
<b>Delivery Clearly points to pertinent aspects</b>	Demonstrates confidence and knowledge. Engages the audience by skillfully keeping eye contact with the audience while making use of the supporting material and appropriate use of technology. Body language appropriately used to enhance value of presentation.	Appears comfortable with the topic and, consistently engages the audience. Makes appropriate use of the supporting material. Body language tentative.	Does not always appear comfortable with the topic or able to engage the audience. Uses supporting materials inconsistently... Limited eye contact with audience. Some distracting mannerisms.
<b>Supporting Material</b>	Supporting materials are attractive, carefully designed and with clear purpose that	Supporting materials are well designed and properly used to convey	Supporting materials are adequately prepared and help conveying the message. Proper

<b>Presented and shows clear understanding</b>	elegantly supports the message. They do not repeat the oral content. Proper credit to references given.	message. Proper credit to references given.	credit to references given in most cases.
<b>Central Message effort</b>	Central message is strongly supported by all the sections of the presentation. The audience fully understands the relevance and implications of the research.	Central message is clear. The audience understand the basic aspects of the research.	Central message is clear. The audience can deduce the importance of the research.

Rubric 2: Written Communication Value  
 Adapted from the written communication rubric from AACU

Evaluators are encouraged to assign a 1 to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	<b>Capstone 4</b>	<b>Milestones 3</b>	<b>Benchmark 2</b>
<b>Purpose for Writing</b>	Demonstrates a thorough understanding of audience, intent of writing is clear and focuses all elements of the work.	Demonstrates adequate consideration of audience, intent of writing is clear and and focuses most elements of the work.	Demonstrates awareness of audience, intent of writing can be inferred by the audience and focuses some elements of the work.
<b>Content</b>	Contains the necessary amount of information carefully summarized to convey a clear and informative message to the audience	Contains the necessary information conveying a general message to the audience.	Contains relevant information but not well- focused to accurately convey the message to the audience.
<b>Genre and Disciplinary Conventions</b>	Understands scientific conventions of writing and, skillfully uses appropriate scientific terms. Demonstrates excellent understanding of technical language.	Understands scientific conventions of writing and consistently uses relevant scientific language.	Uses some scientific conventions and is aware of relevant scientific language.
<b>Sources:</b> include published literature	Comprehensively uses published references that are critically analyzed and presented in the appropriate context. Background information is clear and carefully summarized given proper credit to authors in publications. Meticulously uses own words and style avoiding any possible plagiarism.	Comprehensibly uses publishes references that are assumed to be of high quality. Background information is well summarized given proper credit to authors in publications. Uses own words frequently.	Uses most references that provide relevant information. Avoids plagiarism.
<b>Results:</b> includes data from research and in the form of figures, tables, images.	Logically presents high quality data that is comprehensive, informative, cohesive and skillfully integrated. Appropriate data is properly analyzed and adheres to scientific standards.	Presents high quality data that is well integrated. Data is well presented and properly analyzed.	Presents sufficient data and properly analyzed. Presentation is adequate.
<b>Discussion</b>	Demonstrates comprehensive knowledge of the topic by carefully integrating published information with results from own research. Conveys a strong message that is fully supported by results.	Demonstrates broad knowledge and is capable of integrating published information with results from own research. Conveys a general message about research	Demonstrates relevant knowledge and relevance of the research is apparent. Integration of literature and own work adequate. General message lacks depth.