

**Department of Entomology  
Assessment Plan for PhD program**

**1. Contact Name:** Lona Robertson

**2. Department Mission:** To prepare students for careers in research, education and outreach in academia, or the private and public sectors. We strive to ensure graduates have a fundamental understanding of entomology, competency in specialty areas, problem solving and analytical ability, oral and written communication skills, and demonstrated leadership.

**3. Program Goals:**

- **Discipline Expertise.** Graduates will have a broad-based knowledge of entomology through coursework and topical seminar courses that involve discussion of pertinent contemporary scientific literature.
- **Critical Thinking, Problem Solving, and Technical Skills.** Graduates will be able to apply their discipline-based knowledge and critical thinking skills to design original research and interpret research results through statistical inference. All students are prepared in analytical skills and use those skills in defense of a dissertation.
- **Communication Skills.** Graduates will be able to communicate effectively, demonstrating skills through written and oral presentations in courses, seminar presentations, presentations at scientific meetings and outreach presentations of non-technical material to the public.

**These goals would be achieved through four student learning outcomes. At the conclusion of their programs of study students will be able to:**

- 1. Design and execute scientifically sound research**
- 2. Prepare and deliver oral presentations on scientific information and research ideas**
- 3. Write scientifically sound research manuscripts and proposals**
- 4. Demonstrate broad knowledge of entomology and in-depth knowledge in the area of specialization**

**4A. Student Learning Outcome 1. Design and execute scientifically sound research**

**A1. Assessment Measure 1.**

- All students will develop and defend a written research proposal that outlines their research objectives and experimental approach.
- Direct measure:
  - The written research proposal will be assessed by the student's research advisory committee to assess the student's ability to define hypotheses and design appropriate experiments to test these hypotheses. The committee will provide written and oral comments about the written plan and the student's oral defense of the plan using criteria in Appendix 1A.

**B1. Acceptable and Ideal Targets** (not required for indirect measures).

- At least 50% of students will achieve scores of "3" or "4" (meets or exceeds expectations) on the majority of measures in Appendix 1A that pertain to outcome 1.

**C1. Key Personnel** (who is responsible for the assessment of this measure).

- The research advisory committee will evaluate the students' at the time of the defense. The committee chair will ensure that rubrics are distributed and completed at each defense. The

departmental administrative assistant will compile data from all students in the department, while maintaining the confidentiality of the students' identities.

**A2. Assessment Measure 2.**

- All students will write and defend a dissertation detailing their research and its findings.
- Direct measure:
  - The dissertation will be assessed by the student's research advisory committee to evaluate the student's competence in experimental design and analysis. The committee will provide written and oral comments about the dissertation using criteria in Appendix 1C.

**B2. Acceptable and Ideal Targets**

- At least 75% of students will achieve scores of "3" or "4" (meets or exceeds expectations) on the majority of measures that pertain to outcome 1 in Appendix 1C.

**C2. Key Personnel** (who is responsible for the assessment of this measure).

- Research advisory committee will evaluate students at the time of the defense. The committee chair will ensure that rubrics are distributed and completed at each defense. Confidential data will be compiled by the departmental administrative assistant.

**D. Summary of Findings.**

**4B Student Learning Outcome 2. Prepare and deliver oral presentations on scientific information and research ideas.**

**A1. Assessment Measure 1.**

- All students will present a research proposal seminar that outlines their research and plans to conduct the research.
- Direct measure:
  - The research proposal seminar will be assessed by the student's research advisory committee to assess the student's ability to organize a presentation, create and use effective visual aids, clearly summarize and justify their research project, and answer questions clearly and accurately. The committee will provide written and oral comments about the seminar using criteria in Appendix 1B.

**B1. Acceptable and Ideal Targets**

- At least 50% of students will achieve scores of "3 or 4" (meets or exceeds expectations) on the majority of measures that pertain to outcome 2 in Appendix 1B.

**C1. Key Personnel**

- Research advisory committee will evaluate the student presentations, and confidential data will be compiled by the departmental administrative assistant.

**A2. Assessment Measure 2.**

- All students will present a dissertation seminar and defend their research.
- Direct measure:

- The defense seminar will be assessed by the student’s research advisory committee, who will provide written and oral comments about the seminar using the same criteria that were applied to the research proposal seminar (Appendix 1D) .

**B2. Acceptable and Ideal Targets**

- At least 75% of students will achieve scores of “3 or 4” (meets or exceeds expectations) on the majority of measures that pertain to outcome 2 in Appendix 1D.

**C2. Key Personnel** (who is responsible for the assessment of this measure).

- Research advisory committee will evaluate the student presentations, and confidential data will be compiled by the departmental administrative assistant.

**4C Student Learning Outcome 3. Write scientifically sound research manuscripts and proposals**

**A1. Assessment Measure 1.**

- All students will write a research proposal that outlines their research and plans to conduct the research. See Learning Outcome 1, Assessment Measure 1.
- Direct measure:  
See Learning Outcome 1, Assessment Measure 1. In addition to evaluating the scientific content of the proposal, the committee will also evaluate the student’s ability to organize a scientific paper, follow rules of grammar and syntax, and present a clear, concise, and accurate description of their research plan. The committee will provide oral and written feedback using criteria in Appendix 1A.

**B1. Acceptable and Ideal Targets** (not required for indirect measures).

- At least 50% of students will achieve scores of “3” (meets expectations) or “4” (exceeds expectations) on the majority of measures that pertain to outcome 3 in Appendix 1A.

**C1. Key Personnel** (who is responsible for the assessment of this measure).

- Research advisory committee (evaluation) and departmental administrative assistant (record-keeping and summarization).

**A2. Assessment Measure 2.**

- All students will write a dissertation detailing their research and its findings. See Learning Outcome 1, Assessment Measure 2.
- Direct measure:  
In addition to evaluating the scientific content of the presentation, the committee will also evaluate the student’s scientific writing abilities, as described above for the research proposal. The committee will provide oral and written feedback using criteria outlined in Appendix 1C.

**B2. Acceptable and Ideal Targets**

- At least 75% of students will achieve scores of “3 or 4” (meets or exceeds expectations) on the majority of measures that pertain to outcome 3 in Appendix 1C.

**C2. Key Personnel** (who is responsible for the assessment of this measure).

- Research advisory committee (evaluation) and departmental administrative assistant (record-keeping and summarization).

## D. Summary of Findings

Students completing their dissertation were required to make a public, oral presentation and respond to audience questions. Members of the students' program committees determined that all students who made their oral dissertation defense met or exceeded expectations.

### 4D Student Learning Outcome 4. Demonstrate general knowledge of entomology and in-depth knowledge in the area of specialization

#### A1. Assessment Measure 1.

- All students will perform satisfactorily in a preliminary written and oral exam within their first two years of graduate study.
- Direct measure:
  - The research advisory committee will evaluate the student's performance in both written and oral exams; criteria are in Appendix 1E.

#### B1. Acceptable and Ideal Targets (not required for indirect measures).

- At least 50% of students will achieve scores of "3 or 4" (meets or exceeds expectations) on the majority of measures that pertain to outcome 4 (A-F) in Appendix 1E.
- At least 75% of students will achieve scores of "3" or "4" (meets or exceeds expectations) on at least four knowledge areas in Measure G.

#### C1. Key Personnel (who is responsible for the assessment of this measure).

- Research advisory committee (evaluation) and departmental administrative assistant (record-keeping and summarization).

#### A2. Assessment Measure 2.

- All students will write a dissertation that, in addition to describing their research, also reviews the literature relevant to their project. See Learning Outcome 1, Assessment Measure 2.
- Direct measure:  
The committee will evaluate the student's dissertation to assess their overall knowledge of their area of specialization, and their ability to relate this background information to their own project. The committee will provide oral and written feedback using criteria outlined in Appendix 1C.

#### B2. Acceptable and Ideal Targets

- At least 75% of students will achieve scores of "3" or "4" (meets or exceeds expectations) on the majority of measures that pertain to outcome 4 in Appendix 1C.

#### C2. Key Personnel (who is responsible for the assessment of this measure).

- Research advisory committee (evaluation) and departmental administrative assistant (record-keeping and summarization).

#### A3. Assessment Measure 3.

- All students will perform satisfactorily on questions testing their general and in-depth background knowledge in a final oral exam at the conclusion of graduate study.

- Direct measure:
  - During the dissertation defense, the research advisory committee will evaluate the student's performance on answering questions on general entomology and their area of specialization; criteria are in Appendix 1F.

**B2. Acceptable and Ideal Targets** (not required for indirect measures).

- At least 75% of students will achieve scores of "3" or "4" (meets or exceeds expectations) the majority of measures that pertain to outcome 4 (A-F) in Appendix 1F.
- At least 75% of students will achieve scores of "3" or "4" (meets or exceeds expectations) on at least four knowledge areas in Measure G.

**C2. Key Personnel** (who is responsible for the assessment of this measure).

- Research advisory committee

D. Summary of Findings

During 2015-2016 two PhD candidates completed their dissertation. Through this process, both students demonstrated the ability to design and execute scientifically sound research, communicate their findings through written communication, and demonstrate general knowledge of entomology and in-depth knowledge in the area of specialization. The committee membership indicated that both students met or exceeded expectations.

**8. Supporting Attachments**

- Attach appropriate rubrics (scoring criteria) or instruments (assessments, interview questions, etc.) for each measure if appropriate.
- If the instrument uses a test bank, provide a sample of the questions.

**NOTES:**