

Student Learning Outcome 1	
Students show a proficiency of scientific writing and presentation skills	
Outcome 1: Assessment Measure 1	
Class:	NRE 502 Scientific Writing
Course Mode:	Face-to-Face
Assignment:	Introductory writing assignment in NRE 502 (3 out of the 4 questions)
Evaluation Tool:	Rubric: Assessment evaluates an understanding of the importance and need for publishing, ethical issues, and preliminary considerations associated manuscript preparation. Assessment includes four
Performance Target:	At least 100% of all submitted assignments will answer 3 out of the 4 questions correctly (greater than 8/10 on each of the questions).
Results:	
Use of Results:	
Outcome 1: Assessment Measure 2	
Class:	NRE 591 Graduate Seminar
Course Mode:	Face-to-Face
Assignment:	Acquire the necessary skills to effectively present independent research as measured through grade in class presentation (PhD Students).
Evaluation Tool:	Grading Rubric: Eleven components will be assessed: knowledge of the subject; presentation style; coverage of topic; ability to engage audience; demeanor, enunciation, volume, and vocabulary; clarity and readability; good amount of material per slide; effectiveness; scientific content; quality and quality of the seminar; response to questions.
Performance Target:	90% of the presentations will score good or higher on each components. The course is pass/fail. To pass students will be required to score 7/10 on each of the components. 90% of the presentations
Results:	
Use of Results:	

Student Learning Outcome 2	
Ability to design experiments and develop quantitative analytical skills.	
Outcome 2: Assessment Measure 1	
Class:	NRE 529 Biostatistics
Course Mode:	Face-to-Face
Assignment:	Homework assignment
Evaluation Tool:	Holistic rubric. Students must answer homework questions focusing on three areas: 1. Different biological data and approaches to describe them using graphs and summary statistics; 2. The relationship
Performance Target:	100% of assignments will score 8 or above on the defined questions.
Results:	
Use of Results:	
Outcome 2: Assessment Measure 2	
Class:	NRE 530 Principles of Experimentation
Course Mode:	Face-to-Face
Assignment:	Assignment
Evaluation Tool:	Holistic rubric. Students must answer homework questions focusing on three areas: 1. Basic principles of hypothesis testing and their relationship with scientific method; 2. The appropriate statistical tests for different research questions, data, and research design; 3. Statistical test assumptions, statistical errors and their impact for making inferences. Each area is evaluated on a 0-10 points scale.
Performance Target:	80% of assignments will score 8 or above on the defined questions.
Results:	

Use of Results:	
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Student Learning Outcome 3	
Ability to effectively prepare, propose, and conduct scientific research for development and defense of the dissertation, while demonstrating adequate depth of knowledge in the field study in a professional setting.	
Outcome 3: Assessment Measure 1	
Class:	Outside of Class
Course Mode:	Face-to-Face
Assignment:	Dissertation proposal
Evaluation Tool:	Dissertation Oral proposal Criteria: (1) Effectively presented the objectives, techniques of the dissertation? (2) Shown adequate depth of knowledge of the study area and
Performance Target:	100% of the submitted presentations will earn a pass on all oral proposal criterion
Results:	
Use of Results:	
Outcome 3: Assessment Measure 2	
Class:	Outside of class
Course Mode:	Off campus
Assignment:	Dissertation Defense
Evaluation Tool:	Dissertation Oral Examination Criteria: (1) Effectively presented the objectives, techniques, and findings of the thesis/dissertation? (2) Shown adequate depth of knowledge of the results and
Performance Target:	80% of presented oral defenses will earn a pass on each of the listed criteria of the oral defense.
Results:	
Use of Results:	

Program Outcome 1	
Increase, strengthen, and diversify the research capacity of the PSS MS graduate program	
Assessment Measure:	Number of discipline specific and cross-discipline research grants/proposals submitted
Assessment Target:	The number of discipline specific and cross-discipline research grants/proposals submitted will increase by 2.5% each year.
Assessment Results:	
Use of Results:	
Program Outcome 2	
Increase the number of graduating students	
Assessment Measure:	Number of students in the program.
Assessment Target:	Increase the number of students in the program by 10% per year over a 5 year period. In 15/16 there were 14 students in the program, target for 19/20 is 21.
Assessment Results:	

Use of Results:	
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***Evidence of Improvements Implemented for Performance Targets Not Met in 2018-19
for the Plant & Soil Science Ph.D. Program***

Student Learning Outcome 2: Assessment Measure 1

Course: NRE 529: Biostatistics

Evaluation Tools: Holistic rubric. Students must answer homework questions focusing on three areas: 1. Different biological data and approaches to describe them using graphs and summary statistics; 2. The relationship between statistics and parameters and needs for inference; 3. Probability theory and its impact on research design and statistical inference. Each area is evaluated on a 0-10 points scale.

Performance Target: 80% of assignments will score 8 or above on the three defined questions.

Performance Results: For the area of different biological data and approaches to describe them using graphs and summary statistics, the average score is 9.125, 19 of the 21 students scored 8 or above (89%). For the area of the relationship between statistics and parameters and needs for inference area of the homework assignment, the average score is 7.24, 13 of the 21 students scored 8 or above (63%). For the area of the probability theory and its impact on research design and statistical inference, the average score is 8.50, 16 of the 21 students scored 8 or above (76%).

Performance Targets not Met: The performance targets were not met for the following areas:

- o Relationship between statistics and parameters and needs for inference (63%)
- o Area of the probability theory and its impact on research design and statistical inference (76%)

Evidence of Improvements Implemented: The instructor will revisit the areas on relationship between statistics and parameters and needs for inference and probability theory and its impact on research design and statistical inference as needed to ensure students are grasping the fundamental concepts associated with each area. In addition, pre-assessment of student knowledge as it relates to introductory statistics, natural distribution systems, sampling techniques, data arrangement, tests of significance, and logical inference will be conducted for graduate students prior to enrollment in the course. If needed, students will be recommended to enroll in either MTH 500 or NRE 430 before enrolling in NRE 529: Biostatistics.

Program Outcome 2: Increase the number of graduating students

Assessment Measures: Number of students in the program.

Assessment Target: Increase the number of students in the program by 10% per year over a 5 year period. In 14/15 there were 15 students in the program, target for 18/19 is 22.

Assessment Results: In 18/19 there were 20 students in the PhD program (14/15 15; 15/16 14; 16/17 14; 17/18 17; 18/19 20).

Use of Results: Target not met, given the 5 year time frame it is expected that measure will continue to reflect changes in the program.

Evidence of Improvements Implemented: Stronger recruitment activities for graduate students have been undertaken and faculty have been encouraged to include graduate assistantships in research grant proposals. In addition, discussions have been undertaken with other institutions to establish pipelines for the entrance of graduate students from other universities into the PSS PhD program at AAMU.