

Colorado State University – Pueblo Academic Program Assessment Report for AY 2016-2017

Due: June 1, 2017

Program: __MS Biology_____

Date: _May 19th, 2017_____

Completed by: _Daniel Caprioglio_____

Assessment contributors (other faculty involved in this program’s assessment): _____

Please describe the 2015-2016 assessment activities for the program in Part I. Use Column H to describe improvements planned for 2016-2017 based on the assessment process. In Part II, please describe activities engaged in during 2014-2015 designed to close-the-loop (improve the program) based on assessment activities and the information gathered in 2014-2015. Thank you.

I. Program student learning outcomes (SLOs) assessed in this cycle, processes, results, and recommendations.

A. Which of the program SLOs were assessed during this cycle? Please include the outcome(s) verbatim from the assessment plan.	B. When was this SLO last assessed? Please indicate the semester and year.	C. What method was used for assessing the SLO? Please include a copy of any rubrics used in the assessment process.	D. Who was assessed? Please fully describe the student group(s) and the number of students or artifacts involved.	E. What is the expected achievement level and how many or what proportion of students should be at it?	F. What were the results of the assessment?	G. What were the department’s conclusions about student performance?	H. What changes/improvements to the <u>program</u> are planned based on this assessment?
<i>Mastery of the Scientific Method</i> <ul style="list-style-type: none"> • <i>Independent development and mastery of problem solving skills</i> • <i>experimental design</i> 	AY 2016-2017	(see attached)	We have rubrics from 1 of 1 graduate defenses during AY 2016-2017.	Satisfactory performance will be defined on an individual basis by the student’s graduate committee.	On the 4 point rubric the average for the category excellent was 80%, 20% for the proficient category, and 0% in the developmental	The department is satisfied with the students’ performance.	None

<ul style="list-style-type: none"> • <i>execution</i> • <i>critical analysis</i> • <i>interpretation of the results of original scientific experimentation (thesis) or experiential learning (internship).</i> 				Additionally, university and program rules	category.		
<p>Utilization of the Literature</p> <ul style="list-style-type: none"> • <i>written evaluative of the scientific literature</i> • <i>Oral evaluation of the scientific literature</i> 	AY2016-2017	(see attached)	We have rubrics from 1 of 1 graduate defenses during AY 2016-2017.	Satisfactory performance will be defined on an individual basis by the student's graduate committee. Additionally, university and program rules	On the 4 point rubric the average for the category excellent was 100%, 0% for the proficient category, and 0% in the developmental category.	The department is satisfied with the students' performance	None

Comments:

II. Follow-up (closing the loop) on results and activities from previous assessment cycles. In this section, please describe actions taken during this cycle that were based on, or implemented to address, the results of assessment from previous cycles.

A. What SLO(s) did you address? Please include the outcome(s) verbatim from the assessment plan.	B. When was this SLO last assessed? Please indicate the semester and year.	C. What were the recommendations for change from the previous assessment?	D. Were the recommendations for change acted upon? If not, why?	E. What were the results of the changes? If the changes were not effective, what are the next steps or the new recommendations?
<i>Mastery of the Scientific Method Independent development and mastery of problem solving skills including experimental design, execution, critical analysis, and interpretation of the results of original scientific experimentation (thesis) or experiential learning (internship).</i>	2015-2016	Reviewers liked the quality of the rubric, but would like to see a better record of when each SLO will be evaluated. We also struggle due to the small size of our program, as seen this year with a lack of information.	The rubric was developed and is attached. New rubrics for SLOs 2 and 3 will be developed and implemented during AY 2017-2018 after discussion with the department	No changes were implemented during this cycle.

Comments:

SLO: Mastery of the Scientific Method and Proficiency in Problem Solving

**Graduate Programs in
Natural Sciences MS in
Biology Program
assessment rubric**

**Independence and
ownership of
project**

Excellent

Proficient

Developmental

Ineffective

Fields questions intelligently without assistance; thorough understanding of project; complete ownership

Fields questions; demonstrates basic understanding of project

Needs help answering questions; lacks complete understanding of some aspects of project

Cannot answer basic questions; poor understanding of key aspects of project; no ownership

**Quality of
experimental design**

Aims test the hypothesis; methods appropriately test the aims; justified choice of variables and controls; adequate sample size

Aims mostly test the hypothesis; methods test most of the aims; questionable choice of variables and controls; sample size questionable

Aims partially test the hypothesis; methods poorly test the aims; dubious choice of variables and controls; insufficient sample size

Aims do not adequately test the hypothesis; methods fail to test the aims; poor choice of variables and controls; sample size is deficient

**Execution of
experimentation**

Very high quality data; completed by student

Good data; mostly completed by student

Adequate data; less than half completed by student

Poor quality of data; most data was not completed by the student

**Critical analysis
of results**

Superb and clearly communicated data presentation; correct and valid statistical analysis

Adequately communicated data presentation; statistical analysis meets minimum standards for validity

Partial or incomplete communication of data; questionable or incomplete statistical analysis

Poorly communicated data presentation; invalid or missing statistical analysis

**Interpretation of
the results**

Relates all results back to aims and hypothesis; communicates significance of results; appropriate comparisons to literature; extends knowledge in field; additional hypotheses generated

Relates some results back to aims and hypothesis; significance of results implied but not clearly stated; partial comparisons to literature; extends knowledge in field; additional hypotheses implied

Results poorly linked to aims and hypothesis; weak communication of significance of results; little comparison to literature; insufficiently adds knowledge in field; no future direction generated

Results not linked to aims and hypothesis; does not communicate significance of results; no comparison to literature; merely repeats previous work; no future direction generated

SLO: Utilization of the Literature

**Graduate Programs in
Natural Sciences MS in
Biology Program
assessment rubric**

**Written evaluation
of the scientific
literature**

Excellent

Comprehensive review of literature that give a solid foundation using both primary and secondary literature for the hypothesis and thesis plan

Proficient

Review of literature that has some omissions in key areas of primary or secondary literature and leave some questions of the hypothesis and thesis plan

Developmental

Review of literature that has major omissions in key areas of primary or secondary literature and leave large questions of the hypothesis and thesis plan

Ineffective

Incoherent of literature that has causes difficulty in understanding the hypothesis and thesis plan

**Oral evaluation
of the scientific
literature**

Able to discuss the literature orally and bring up strengths and weaknesses of different interpretation of the current state of the field

Able to discuss the literature orally but has difficulty with application without help from others.

Able to discuss literature at a limited level and cannot apply the literature without help from others

Cannot discuss the literature at any detail and cannot understand the application of the literature.