Colorado State University – Pueblo Academic Program Assessment Report for AY 2015-2016

Program:____MS Biology_____

Date: _June 5th, 2016_____

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?
Mastery of the Scientific Method Independent development and mastery of problem solving skills experimental design execution critical analysis interpretation	AY 2013- 2014	(see attached)	We have rubrics from 2 of 2 graduate defenses during AY 2015-2016.	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 60%, 40% for the proficient category, and 0% in the development al category.	The department is satisfied with the students' performance.	None

of the results of				
original				
scientific				
experimentatio				
n (thesis) or				
experiential				
learning				
(internship).				

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	B. When was	C. What were the	D. Were the	E. What were the results of the
address? Please include	this SLO last	recommendations for change	recommendations for	changes? If the changes were not
the outcome(s)	assessed?	from the previous assessment?	change acted upon? If not,	effective, what are the next steps
verbatim from the	Please		why?	or the new recommendations?
assessment plan.	indicate the			
	semester and			
	year.			
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).	2012-2013	Reviewers liked the quality of the rubric, but would like to see a better record of when each SLO will be evaluated. We alos 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:

Graduate Programs in Natural Sciences MS in Biology Program assessment rubric	Excellent	Proficient	Developmental	Ineffective
Independence and ownership of project	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: Mastery of the Scientific Method and Proficiency in Problem Solving

SLO2: Mastery of Dissemination of Scientific Products

Graduate Programs in Natural Sciences MS in Biology Program assessment rubric	Excellent	Proficient	Developmental	Ineffective
Written Thesis Accepted	Department accepts the thesis with revisions and minimal changes	Department accepts the thesis with revisions and some major changes	Department accepts the thesis with major changes and revisions	Department cannot accept the thesis due to major defects in the thesis
Oral Thesis Defense	Student completes Oral Thesis defense with strong organization and questions answered	Student complete the Oral Thesis defense with adequate organization and ability to answer questions with some help	Student completes Oral Thesis defense with some difficulty with organization and difficulty answering question without assistance	Student does not complete Oral Thesis Defense due to major defects in the organization and discussion

SLO3: Utilization of the Literature

Graduate Programs in Natural Sciences MS in Biology Program assessment rubric	Excellent	Proficient	Developmental	Ineffective
Written evaluation of the scientific literature	Comprehensive review of literature that give a solid foundation using both primary and secondary literature for the hypothesis and thesis plan	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	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	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.