Colorado State University – Pueblo Academic Program Assessment Report for AY 2012-2013 **Due: June 1, 2013**

Program: MS Biochemistry (GPNS) **Date:** June 7, 2013

Completed by: Mel Druelinger

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

Please complete this form for each undergraduate, minor, certificate, and graduate program (e.g., B.A., B.S., M.S.) in your department. Please copy any addenda (e.g., rubrics) and paste them in this document, and return it to Erin Frew, erin.frew@colostate-pueblo.edu as an email attachment before June 1, 2013. You'll also find the form at the assessment website at http://www.colostate-pueblo.edu/Assessment/Resources/Pages/default.aspx. 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?	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.	E. What is the expected achievement level and how many 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 program are planned based on this assessment?
#1- Biochemistry MS students will be able to evaluate the scientific literature and to use it in their courses and	6/12	Thesis plan – Chem 510 (Foundations); Faculty evaluations – Chem 593 (Seminar); Thesis Defense – Chem 589	C510 – two (2) students; C593 –no students; Chem 589 – no students	Mastery; all students should attain mastery by completion of their degree	C510 – 2 of 2 students were successful in developing an approved thesis plan;	The department faculty were satisfied that these aspects of student learning and performance were satisfactorily completed.	A more formal and complete assessment of all aspects of the program, including this element will be conducted during the annual department Advance in the summer of 2013.

research							
#2 - Biochemistry MS students will be able to effectively communicate scientific research, both their own and information from the research literature, in written and oral fashions	6/12	Thesis plan – C510; Faculty evaluations in C593; Thesis defense – C589	C510 – Two students; no students in C593 or C589.	Mastery; all students should attain mastery by completion of their degree	C510 – 2 of 2 students were successful in developing an approved thesis plan; there were no studnts in C593 or C589	The department faculty were satisfied that these aspects of student learning and performance were satisfactorily completed.	A more formal and complete assessment of all aspects of the program, including this element will be conducted during the annual department Advance in the summer of 2013.
#3 – Biochemistry MS students will develop and master the scientific problem solving skills required to define and solve basic or applied original scientific questions using the scientific method	6/12	Thesis plan – C510; Faculty evaluations in C593; Thesis defense – C589	C510 – Two students; no students in C593 or C589.	Mastery; all students should attain mastery by completion of their degree	Both students enrolled in the C510 courses were successful in developing an approved thesis plan. However it is recognized that continual evaluation is required to assess the	The department faculty were satisfied that these aspects of student learning and performance were satisfactorily completed.	A more formal and complete assessment of all aspects of the program, including this element will be conducted during the annual department Advance in the summer of 2013.

					ability of students to solve problems that arise during the research progress		
#4 – Biochemistry MS students will actively engage in collaborative research or internships and discourse with the faculty in the Chemistry Department and other STEM disciplines as appropriate	6/12	Thesis plan – C510; Research – C592; Thesis research – C599, respective graduate committee meetings	Students and faculty	Required for a student to successfully complete their degree. At least 75% of the appropriate Chemistry faculty, based on a three year rolling average, will be engaged with at least one student's Biochemistry MS or other GPNS committee	100% of the students who entered and are continuing are engaged in collaborative research. 100% of the appropriate Chemistry faculty are currently serving on one or more graduate student committees. All graduate committees in this program include one or more Biology	The department faculty were satisfied that these aspects of student learning and performance were satisfactorily completed.	A more formal and complete assessment of all aspects of the program, including this element will be conducted during the annual department Advance in the summer of 2013.

					faculty.		
#5 – Biochemistry MS students and faculty will disseminate the products of the Biochemistry MS program within the CSU-Pueblo community and communities outside the university in activities using their professional expertise	6/12	Review activities with faculty	Students and faculty	At least 50% of the Biochemistry MS students and faculty, based on a three year rolling average will be engaged in these professional outreach activities	100% of the Chemistry faculty with Biochemistry graduate students have engaged in these types of activities. The students currently in the program have not yet completed sufficient research work to be able to present their work externally.	The department faculty were satisfied that these aspects of student learning and performance were satisfactorily completed.	A more formal and complete assessment of all aspects of the program, including this element will be conducted during the annual department Advance in the summer of 2013.

Comments:

We have a small number of students in the program and they are at various stages making meaningful assessment difficult. This small number is augmented by a similar small number of students in the Chemistry program. The MS Chemistry program is presented separately. We currently (6/13) have four students in the MS Biochemistry program. Three of these have entered the program this year, including one in the spring of

2013 and consequently has not yet taken the Foundations course (C510). None has yet taken the the seminar course (C593). All have however begun various aspects of their research projects. Many students take more than the expected and desirable two years to complete the degree because of outside jobs or other personal reasons. It is anticipated that one student will graduate this summer upon completion oa an incomplete in one course. He has taken the seminar course and written and defended a thesis. Despite the small numbers and the fragmented entry points, to date all students in the program have satisfactorily met all appropriate expectations as outlined. With numbers this small and fragmented in point along the path to a degree to it is difficult to gain statistically meaningful results on many measures. The Chemistry department is engaged in a number of discussions regarding the current and future nature of the MS Biochemistry program. Students aspiring to a MS – Chemistry program are also engaged within the department but that program (GPNS-MS-Chemistry) is assessed in a different document. We currently have no internship students and generally discourage this except in certain circumstances; instead, we strongly promote the thesis track as generally stronger for most students.

Students:
Kevin Darcy – Entered fall 2010 – anticipated graduation – August 2013
Sudeep Shakya – entered fall 2012
Srivatsan Parthasarathy – entered Fall 2012
Nishesh Singh – entered spring 2013

B. 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?	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?

Comments:

As noted in Item H in the assessment rubric, the overall program is being reviewed in the department as an ongoing activity and will be over the course of the 2013-2014 academic year and especially during the summer. Again, it is difficult to deal with the relatively small numbers of students in the program and there are continuing efforts underway to increase the number of applicants. This is hampered by the lack of financial support available for the graduate students. We feel that the students in the program are gaining the necessary elements to successfully join the workforce and/or go on to graduate school (PhD). We are increasingly selective in admitting students and are upholding academic standards as revealed by the applications denied.

Chemistry Department

Master of Science in Biochemistry

Graduate Advisory Committee Meeting Progress Report

To be filed with the Program Director, student and Advisor. Check: Thesis ☐ Internship ☐ 3+2 ☐

Student Name: _____ Date of meeting:_____

Title: _____

_____

	Satisfactory	Satisfactory with deficiencies	Unsatisfactory
1. _____ Graduate Advisor			
2. _____ Committee Member 1			
3. _____ Committee Member 2			

Each committee member signs and checks the appropriate box indicating the overall evaluation. The thesis advisor summarizes the major outcomes of the meeting below, discusses it with the student, and the students signs at the bottom.

Familiarity with Background Literature:

Experimental Design:

Communication of Project Design and Progress:

Progress Summary:

Action Plan for Next Semester:

_____ _____

Student signature Date

MASTER OF SCIENCE IN BIOCHEMISTRY

THESIS PLAN

Student Name:_____ **PID**: _____

MS Research Advisor:_____

Committee Members: _____

_____

Emphasis Area: _____

Title: _____

_____

Please provide a brief description of the research project (use as much space as necessary; have it signed in the sequence given)

INTRODUCTION (Statement of the Problem):

OUTLINE OF ANTICIPATED RESULTS/DISCUSSION:

DESIGN: (methods, materials, techniques, etc.):

REFERENCES:

	Signature	**Print**	**Date**
1. Student			
2. Advisor			
3. Committee member			
4. Committee member			
5. Department Chair			
6. Dean CSM			
7. MSANS Director			

Revised 12/5/12

MD – MS Biochemistry

COLORADO STATE UNIVERSITY – PUEBLO

GRADUATE PROGRAMS IN NATURAL SCIENCE

COMPLETION FORM

THESIS OPTION

The thesis must be submitted to the Graduate Committee four (4) weeks prior to the date of oral defense. The Program Director must be notified in writing of the date of oral defense by the student's advisor.

Program Degree Area (Biology, Biochemistry, or Chemistry: _____
Student Name: _____ PID Number: _____

Address:_____

Title: _____

_____

_____

	Approved	Approved with Changes	Disapproved	Date
4. _____ Advisor				
5. _____ Committee Member				
6. _____ Committee Member				

After all the committee members have approved the thesis and signed the approval form, the major professor will have the form sent to the Program Director. A thesis that has been approved with suggested changes must have those changes incorporated before the major professor can send the completion form to the Program Director. **The Program Director will send one complete form to the Registrar's Office, one to the major professor, one to the student and keep one for the records.**

_____

Program Director Date

Records' Office Clearance: According to our records the above student has cleared ☐ not cleared ☐

_____

Signature of Records' Office Agent Date