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

Program: MS Chemistry (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- Chemistry MS students will be able to evaluate the scientific literature and to use it in their courses and research	6/12	Thesis plan – Chem 510 (Foundations); Faculty evaluations – Chem 593 (Seminar); Thesis Defense – Chem 589	C510 – one (1) student; C593 – Two (2) students ; Chem 589 – one (1) student	Mastery; all students should attain mastery by completion of their degree	C510 – 1 of 1 student was successful in developing an approved thesis plan; C593 – 2 of 2 students were	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.

					successful in presenting a seminar; 1 of 1 student was successful in defending a thesis		
#2 - Chemistry 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 – One student; C593 – 2 of 2 students; C589 – One student	Mastery; all students should attain mastery by completion of their degree	C510 – 1 of 1 students was successful in developing an approved thesis plan; C593 – 2 of 2 students successfully completed this aspect of the course; C589 – 1 of 1 students made a successful thesis defense	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 – Chemistry MS students will develop and master the scientific problem solving skills	6/12	Thesis plan – C510; Faculty evaluations in C593; Thesis defense – C589	C510 – One student; C593 – 2 of 2 students; C589 – One student	Mastery; all students should attain mastery by completion of their	All students enrolled in these courses were successful in developing	The department faculty were satisfied that these aspects of student learning and performance were satisfactorily	A more formal and complete assessment of all aspects of the program, including this element will be conducted during the annual department

required to define and solve basic or applied original scientific questions using the scientific method				degree	an approved thesis plan, presenting a seminar and defending a thesis as appropriate to each course and student. However it is recognized that continual evaluation is required to assess the ability of students to solve problems that arise during the research progress	completed.	Advance in the summer of 2013.
#4 – Chemistry MS students will actively engage in collaborative research or internships and discourse with the faculty in	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 Chemistry faculty,	100% of the students who entered and are continuing are engaged in collaborative research.	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.

the Chemistry Department and other STEM disciplines as appropriate				based on a three year rolling average, will be engaged with at least one student's Chemistry MS or other GPNS committee	100% of the Chemistry faculty are currently serving on one or more graduate student committees.		
#5 – Chemistry MS students and faculty will disseminate the products of the Chemistry 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 Chemistry MS students and faculty, based on a three year rolloing average will be engaged in these professional outreach activities	100% of the Chemistry faculty with graduate students have engaged in these types of activities. Two current graduate students have presented.	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 Biochemistry program, most of whom are also administratively housed in the Chemistry department. The MS Biochemistry program is presented separately and students in that program may come from either a Chemistry or a Biology background. We currently (6/13) have six students in the MS Chemistry program. This includes both full and part-time students and includes three 3+2 students. Two of the latter students have only entered the program this past spring and consequently have not yet taken the Foundations course (C510) or the seminar course (C593). Many students take more than the expected and desirable two years to complete the degree because of outside jobs or other personal reasons. Some are part time students. It is anticipated that one student will graduate this summer and one did graduate last December. 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 Chemistry program. Students aspiring to a MS – Biochemistry program are also engaged within the department but that program (GPNS-MS-Biochemistry) 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:
Pradeep Gautam – entered spring 2009; graduated December 2012
Matthew Dunbar – entered fall 2011; expected graduation August 2013
Wei Cao – entered fall 2012
Cheryl Armstrong – entered fall 2010 – part time student
David Bemis – entered 3+2 fall 2009
Amanda Anaya – entered 3+2 spring 2013
Elly Vergunst – entered 3+2 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 number of applications denied and the removal of a student from our program a year ago.

Chemistry Department

Master of Science in Chemistry

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 CHEMISTRY

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 Chemistry

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