#### Colorado State University – Pueblo Academic Program Assessment Report for AY 2014-2015 Due: June 1, 2016

Completed by:\_\_Richard Farrer\_\_\_\_\_

Assessment contributors (other faculty involved in this program's assessment): \_\_none\_\_\_\_\_

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

A. Which of the	B. When	C. What	D. Who was	E. What is	F. What	G. What were the	H. What
program SLOs	was this	method was	assessed?	the	were the	department's	changes/improvements
were assessed	SLO last	used for	Please fully	expected	results of the	conclusions about	to the <u>program</u> are
during this	assessed?	assessing the	describe the	achievement	assessment?	student	planned based on this
cycle? Please	Please	SLO? Please	student	level and		performance?	assessment?
include the	indicate	include a copy	group(s) and	how many			
outcome(s)	the	of any rubrics	the number	or what			
verbatim from	semester	used in the	of students	proportion			
the assessment	and year.	assessment	or artifacts	of students			
plan.		process.	involved.	should be at			
				it?			
1: Chemistry	Spring	This SLO is	CHEM510(1	All students	Only one	Faculty are happy.	None.
MS students	2015 by	assessed	student),	should	student		
will be able to	Richard	through both	CHEM592(0	receive a	(Brent		
evaluate the	Farrer.	performance in	students),	grade of A	Schofield)		
scientific		coursework	CHEM593(0	or B in all	active in the		
literature and		and	students),	graded	Biochem MS		
to use it in their		performance	CHEM589(0	courses. All	program at		
courses and		during thesis	students),	students	this time.		
research.		committee	CHEM599(1	should have	Brent is		
		meetings. I	student).	positive	doing very		
		believe that all	Also, the one	reviews	well.		
		500 level	student held	from			

			1	
courses involve	a thesis	committee		
some	committee	meetings –		
evaluation of	meeting	which shows		
literature;	during the	that the		
however all MS	year.	student is		
students begin		making the		
their		necessary		
coursework in		progress		
CHEM510,		toward		
where students		graduation.		
are expected to		All students		
develop a		should		
thesis plan.		receive an A		
Additionally, in		in the thesis		
CHEM593		defense –		
(seminar) and		showing		
CHEM589		mastery of		
(thesis		their area of		
defense),		study and		
students are		research.		
required to		Realistically,		
demonstrate		some		
significant		student		
knowledge of		perform		
scientific		poorly in		
literature. For		classwork –		
students who		many		
take the		students not		
intership		prepared for		
option,		depth,		
CHEM588 is		breadthe,		
the intership		and scope of		
defense. Also,		courses		
students are		and/or		

evaluated during research. Students must maintain a 3.0 GPA to remain in good standing in the program.  2: Chemistry MS students will be able to effectively communicate scientific research, both their own and information from the research illerature, in written and oral fashions.    Spring See SLO 1. CHEM510(1) formal evaluations of the program.   Student formal evaluations occur during students), and direct the student toward oral fashions.   Student our program.   Student formation for purposed of evaluating the students of the program.   Student format formation for purposed of evaluating the students or growp meetings are used to guide at thesis of growth and abilities in the program in the student of the student or growp meetings, meetings are during the students or growp meetings, meetings, meetings, meetings, meetings, meetings with the student or student or growp meetings, meetings, meetings with the student or students			a valvata d		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		-	-
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.    CHEM592.								
CHEM592.  2: Chemistry MS students will be able to effectively communicate scientific research, both their own and information from the research inform the research oral fashions.  CHEM592.  CHEM510(1) Formal students touchts), coursework, students), courses, committee wisdents), students), courses, committee made information from the research and oral fashions.  CHEM593(0) coursevry, committee wisdents), students), courses, committee made information for purposed of evaluating the students in meeting in the students of a thesis group meetings, meetings in meeting in the students occur in regular growth and abilities in meeting meetings, meetings			-					
2: Chemistry MS students will be able to effectively communicate research, both their own and information from the research literature, in written and oral fashions.  CHEM592.  3.0 GPA to remain in good standing in the program.  CHEM510(1) Formal evaluations occur during student), CHEM592(0 occur during students), courses, CHEM593(0 committee used to guide students), meetings and direct the student toward information from the research literature, in written and oral fashions.  CHEM592(0 occur during students), courses, CHEM593(0 committee used to guide students), meetings and thesis students), odefenses.  CHEM599(1) Non-formal students, odefenses.  CHEM599(1) Non-formal students, occur in			,					
2: Chemistry MS students will be able to effectively communicate scientific research, both their own and information from the research iliterature, in written and oral fashions.    Spring								
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.    Spring 2015 by Richard research, and seffectively communicate student toward information for al fashions.   Chemistry meetings are written and oral fashions.   Chemistry meeting students with the program.   Chemistry student), courses, committee well attents occur in this student, courses, committee meetings and thesis defenses.   Chemistry meetings are used to guide and direct the students occur in the student toward for purposed of evaluating the student held abilities in   Chemistry meetings meetings meetings   Chemistry meet			CHEM592.					
2: Chemistry MS students 2015 by Geffectively communicate scientific research, both their own and information from the research literature, in written and oral fashions.    Spring See SLO 1. CHEM510(1) Formal student, COUrsework, research, and research, and committee students), coursework, and committee students), committee students), courses, CHEM593(0) and thesis defenses.    CHEM599(1) students), committee students), meetings area, and also for purposed of student). CHEM599(1) students), area, and also students), courses, CHEM599(1) students), committee students), courses, committee students, courses, courses, committee students, courses, courses, courses, courses, courses, courses, courses, courses, courses, cours								
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.  Spring 2015 by Coursework, research, and Farrer. Spring 2015 by Richard research, both their own and oral fashions.  Spring 2015 by Coursework, student), Coursework, research, and Farrer. Committee students), courses, committee valuations occur during students), courses, committee waluations occurses, committee students), meetings and thesis area, and also for purposed of evaluating the student held at hesis group meetings are used to guide and direct the Students), CHEM599(1 Students), courses, committee waluations occur in regular at hesis group meetings, meetings meetings meetings, meetings					good			
2: Chemistry MS students will be able to effectively communicate scientific research, both their own and information from the research information from the research literature, in written and oral fashions.  Spring See SLO 1. CHEM510(1 student), CHEM592(0 students), CHEM593(0 students), CHEM593(0 students), CHEM593(0 students), CHEM593(0 students), CHEM593(0 students), CHEM599(1 students), CHEM599(1 student), CHEM599(1 students), CHEM59(1 students), CHEM599(1 students), CHEM599(1 students), CHEM599(1 students), CHEM599(1 students), CHEM599(1 students), CHEM59					standing in			
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.  2: Chemistry MS students 2015 by Coursework, will be able to effectively communicate scientific and oral fashions.  See SLO 1. CHEM510(1) student), student), student), cocur during courses, courses, committee evaluations occur during students), courses, committee evaluations occur meetings and thesis defenses.  CHEM593(0) students), defenses. CHEM589(0) and thesis defenses. CHEM599(1) student). Non-formal evaluations occur in regular a thesis group Growth and abilities in meeting meetings, meetings					the			
MS students will be able to effectively communicate scientific research, both their own and information from the research fired the written and oral fashions.  2015 by Richard Research, and CHEM592(0 Courses, CHEM593(0 Committee Students), Meetings Richard Richa					program.			
will be able to effectively	2: Chemistry	Spring	See SLO 1.	CHEM510(1	Formal	Student	Faculty happy.	None.
effectively communicate scientific used to guide and direct the student toward information from the research literature, in written and oral fashions.  Farrer. committee students), courses, committee students), meetings and thesis students), meetings and thesis students), defenses. CHEM599(1 students), CHEM599(1 Non-formal evaluations occur in student). evaluations group growth and abilities in meeting meetings	MS students	2015 by	Coursework,	student),	evaluations	doing well.		
communicate scientific used to guide students), their own and information from the research literature, in written and oral fashions.  meetings are used to guide students), cHEM593(0 students), defenses. CHEM599(1 Non-formal evaluations occur in student held regular group oral fashions.  meetings are cHEM593(0 students), meetings and thesis studentss, defenses.  CHEM599(1 Non-formal evaluations evaluations occur in student held regular group oral fashions. growth and abilities in meeting meetings	will be able to	Richard	research, and	CHEM592(0	occur during			
scientific research, both their own and information from the research literature, in written and oral fashions.  scientific used to guide and direct the CHEM589(0 students), CHEM599(1 students), CHEM599(1 students), Non-formal evaluations occur in regular group oral fashions.  meetings and thesis and thesis group occur in regular group growth and abilities in meetings meetings	effectively	Farrer.	committee	students),	courses,			
research, both their own and information from the research literature, in written and oral fashions.  and direct the student toward students), defenses.  CHEM599(1 Non-formal evaluations occur in regular group group growth and abilities in  and direct the CHEM589(0 and thesis defenses. Non-formal evaluations occur in regular group group meetings, meetings	communicate		meetings are	CHEM593(0	committee			
their own and information from the research literature, in written and oral fashions.  Their own and student toward mastery in this area, and also for purposed of literature, in written and oral fashions.  Their own and student toward students), defenses.  CHEM599(1 Non-formal evaluations occur in student).  Also, the one occur in regular group group meetings, meetings, meetings	scientific		used to guide	students),	meetings			
information from the research literature, in written and oral fashions.  mastery in this area, and also student).  Also, the one student held regular group oral fashions.  growth and abilities in meeting meetings  Non-formal evaluations occur in regular group  resultations occur in regular group  meetings	research, both		and direct the	CHEM589(0	and thesis			
from the research for purposed of literature, in written and oral fashions.  growth and also for purposed of evaluating the student held regular growth and abilities in meeting meetings  evaluations occur in regular group meetings, meetings	their own and		student toward	students),	defenses.			
research   for purposed of literature, in written and oral fashions.   growth and abilities in   meetings   for purposed of evaluating the student held regular group   meetings   meetings	information		mastery in this	CHEM599(1	Non-formal			
literature, in written and oral fashions.  evaluating the student held a thesis group oral fashions.  growth and abilities in meeting meetings	from the		area, and also	student).	evaluations			
written and oral fashions.  oral fashions.  students' a thesis group meetings, meetings meetings	research		for purposed of	Also, the one	occur in			
oral fashions.  growth and committee meetings, meetings abilities in meeting	literature, in		evaluating the	student held	regular			
oral fashions.  growth and committee meetings, abilities in meeting meetings	written and		students'	a thesis	group			
abilities in meeting meetings	oral fashions.		growth and	committee				
			abilities in	meeting				
			these areas.	during the	with			
Additionally, year. advisors,				_				
individual and in			• •	,	,			
research group everyday								
meetings often laboratory								
require interactions.			_					
students to			· ·		,			
discuss their								
			research with					

the faculty mentor and other group members — such discussions often lead to analysis of data via the scientific method and through critical thinking. Thus, some of the best areas for growth of the students occurs in non- formal, non- graded settings. Honestly, these are the	·	1		
other group members — such discussions often lead to analysis of data via the scientific method and through critical thinking. Thus, some of the best areas for growth of the students occurs in non- formal, non- graded settings. Honestly, these				
members — such discussions often lead to analysis of data via the scientific method and through critical thinking. Thus, some of the best areas for growth of the students occurs in non- formal, non- graded settings. Honestly, these				
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via the scientific method and through critical thinking. Thus, some of the best areas for growth of the students occurs in non- formal, non- graded settings. Honestly, these				
scientific method and through critical thinking. Thus, some of the best areas for growth of the students occurs in non- formal, non- graded settings. Honestly, these	analysis of data			
method and through critical thinking. Thus, some of the best areas for growth of the students occurs in non-formal, non-graded settings. Honestly, these	via the			
through critical thinking. Thus, some of the best areas for growth of the students occurs in non-formal, non-graded settings.  Honestly, these	scientific			
thinking. Thus, some of the best areas for growth of the students occurs in non- formal, non- graded settings. Honestly, these	method and			
some of the best areas for growth of the students occurs in non- formal, non- graded settings. Honestly, these	through critical			
best areas for growth of the students occurs in non-formal, non-graded settings. Honestly, these	thinking. Thus,			
growth of the students occurs in non-formal, non-graded settings. Honestly, these	some of the			
students occurs in non- formal, non- graded settings. Honestly, these	best areas for			
occurs in non- formal, non- graded settings. Honestly, these	growth of the			
formal, non- graded settings. Honestly, these	students			
graded settings. Honestly, these	occurs in non-			
settings. Honestly, these	formal, non-			
settings. Honestly, these	graded			
Honestly, these	settings.			
	are the			
important	important			
times the	times the			
student needs	student needs			
to succeed –	to succeed –			
since	since			
employment	employment			
will be more				
similar to these				
occasions than				
courses.				

3: Chemistry	Spring	See SLO 2.	CHEM510(1	Again, all	Only one	Faculty are joyous.	None.
MS students	2015 by		student),	students	student		
will develop	Richard		CHEM592(0	should	active in		
and master the	Farrer.		student),	complete	Biochem MS		
scientific			CHEM593(0	each course	– he is		
problem			students),	with an A or	progessing		
solving skills			CHEM589(0	B, and	toward		
required to			students),	students	degree.		
define and			CHEM599 (1	should have			
solve basic or			students).	positive			
applied original			Also, all	reviews			
scientific			students	after each			
questions using			have had at	committee			
the scientific			least one	meeting.			
method			committee	However,			
			meeting this	the			
			past year.	committee			
				meetings			
				are also to			
				assist			
				misdirected			
				students			
				back to a			
				path toward			
				graduation.			
				At the time			
				the students			
				choose to			
				defend their			
				thesis/inters			
				hip, the			
				student			
				must be at			
				or very near			

4: Chemistry MS students will actively engage in collaborative research or internships and	Spring 2015 by Richard Farrer.	CHEM592 and CHEM599 – research, CHEM598 – intership. Final assessment at thesis defense	CHEM592(0 students), CHEM599(1 student), CHEM589(0 students).	mastery of their material, and have a firm grasp on the scientific method and how to apply it to experimenta I design, data analysis, and production of results.  Students graded on CHEM599 – thesis research and CHEM588/5 89 defenses.	No thesis defenses during the year.	Faculty await the next defense	None.
				•			
1				data			
-				analysis, and			
1				production			
				of results.			
4: Chemistry	Spring	CHEM592 and	CHEM592(0	Students	No thesis	Faculty await the	None.
MS students	2015 by	CHEM599 –	students),	graded on	defenses	next defense	
will actively	Richard	research,	CHEM599(1	CHEM599 –	during the		
	Farrer.	CHEM598 –	student),	thesis	year.		
		·	`				
			students).				
internships and							
discourse with		(CHEM589) or		All other			
the faculty in		intership		internship/r			
the Chemistry		defense		esearch is			
Department		(CHEM588).		pass/fail. All			
and other		,					
CTENA		,		students			
STEM		,		should be			
disciplines as		,		should be receiving			
		,		should be receiving either an A			
disciplines as		,		should be receiving			

	1						T
				students			
				should be			
				receiving			
				satisfactory			
				grades in			
				S/U			
				coursework.			
				Students			
				should			
				receive A's			
				for			
				defenses.			
5: Chemistry	Spring	CHEM588,	CHEM589 (0	Students are	Brent	Faculty impressed	None.
MS students	2015 by	CHEM589,	students)	expected to	presented a	with the work he	
and faculty will	Richard	CHEM593,	and	receive A's	poster at the	has completed.	
disseminate	Farrer.	CSU-Pueblo	CHEM593 (0	in their	2016 CSU-	•	
the prodcts of		symposia, and	students).	defenses.	Pueblo		
the Chemistry		regional and	Graduate	For	Research		
MS program		national	students	symposia,	Symposium.		
within the CSU-		scientific	presented	students are	-, -, -		
Pueblo		meetings.	their	expected to			
community and		Also,	research at	know the			
communities		publication of	the RAGE	material and			
outside the		material in	Graduate	confidently			
university in		scientific	Student	discuss their			
activities using		journals.	Symposium	experiments			
their		, ,	that was held	and results.			
professional			Spring 2015 –	This is			
expertise			four students	typically the			
			presented	case, since			
			research as	faculty			
			this	ensure that			
			symposium.	the material			
			, '	is prepared			

	well, and the	
	student is	
	also	
	prepared.	
	Faculty	
	spend many	
	hourse	
	working	
	with	
	students in	
	preparation	
	of	
	presentation	
	S.	

During the 2014-2015 academic year, one students received an MS in Biochemistry. However, his work had been completed for a year, and the degree was held up by a paperwork issue. The student listed in the above evaluations is listed as a Biochemistry student; however, he has switched from Biochemistry to Chemistry. Therefore, the numbers listed in this evaluation should actually be part of the evaluation for the MS in Chemistry.

## 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)	B. When was this	C. What were the	D. Were the	E. What were the results of the
did you address?	SLO last assessed?	recommendations for change	recommendations for	changes? If the changes were not
Please include	Please indicate the	from the previous	change acted upon? If not,	effective, what are the next steps or
the outcome(s)	semester and year.	assessment?	why?	the new recommendations?
verbatim from				
the assessment				
plan.				

Only one student active in the Biochemistry MS program at this time. As a result, assessment of the program based on one student is difficult (impossible?). However, the student, Brent Schofield, is performing at a high level and is well on his way to completing his degree.

## COLORADO STATE UNIVERSITY - PUEBLO GRADUATE PROGRAMS IN NATURAL SCIENCES

#### MASTER OF SCIENCE IN BIOCHEMISTRY PROGRAM <u>DEGREE PLAN</u>

The courses outlined below will constitute the course of study leading to the graduate degree Master of Science in Chemistry for:

Student Name:		Stu	dent PID.#:		
Option:	Non Thesis	Thesis			
Program Plan:	Regular	3+2			
Prefix Number	Title	Credit Hours	Substitute Transfer	Semester & Year	Grade
<u>CHEM510</u>	Foundations in Graduate S	tudies 3		F	
	(Approved b	by Signature)		Date	
Student:					
GraduateAdvisor	:				
Committee Memb	per 1:				
Committee Memb	per 2:				
Program Director					
Department Chair	r:				
Dean of CSM:					



### MASTER OF SCIENCE IN BIOCHEMISTRY THESIS PLAN

Student Name:	PID:
MS Research Advisor:	
Committee Members:	
	e research project (use as much space as necessary;
SIGNIFICANCE	
BACKGROUND	
HYPOTHESIS:	
SPECIFIC AIMS	
EXPERIMENTAL DESIGN AND MET	THODOLOGY
ANTICIPATED RESULTS	
REFERENCES	

	<u>Signature</u>	<u>Print</u>	<b>Date</b>
1. Student			
2. Advisor			
3. Committee member			
4. Committee member			_
5. Department Chair			
6. Dean CSM			
7. MSANS Director			

Revised 15Oct2015 RAF – MS BIOCHEM



# Chemistry Department Master of Science in Biochemistry Graduate Advisory Committee Meeting Progress Report

e filed with the Program Director, studer	nt and Advisor. Check	k: Thesis Intern	ship 3+2
ent Name:	Date of meeting:		
	Satisfactory	Satisfactory with deficiencies	Unsatisfactory
Graduate Advisor			
Committee Member 1			
Committee Member 2			
Committee Member 3			
committee member signs and checks the or summarizes the major outcomes of that the bottom.	he appropriate box inc he meeting below, dis	licating the overall eval cusses it with the stude	luation. The thesis ent, and the students
liarity with Background Literature:			
rimantal Dagign.			
rimentai Design:			
	Graduate Advisor  Committee Member 1  Committee Member 2  Committee Member 3  committee member signs and checks the or summarizes the major outcomes of the at the bottom.	Graduate Advisor  Committee Member 1  Committee Member 2  Committee Member 3  committee member signs and checks the appropriate box incor summarizes the major outcomes of the meeting below, dis at the bottom.  liarity with Background Literature:	Satisfactory Satisfactory with deficiencies  Graduate Advisor  Committee Member 1  Committee Member 2  Committee Member 3  committee member signs and checks the appropriate box indicating the overall eva or summarizes the major outcomes of the meeting below, discusses it with the stude at the bottom.  liarity with Background Literature:

Communication of Project Design and	Progress:	
Progress Summary:		
Action Plan for Next Semester:		
Student signature	Date	