Colorado State University – Pueblo Academic Program Assessment Report for AY 2014-2015

Program: Physics

Date: June 1, 2016

Completed by: <u>Bruce Lundberg</u>

Assessment contributors (other faculty involved in this program's assessment): Ms. Julie Spangler participated in an exit interview session

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 2015-2016 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	B. When	C. What	D. Who was	E. What is the	F. What were the	G. What	H. What changes/improvements to
program SLOs	was this	method was	assessed?	expected	results of the	were the	the program are planned based on
were assessed	SLO last	used for	Please fully	achievement level	assessment?	department's	this assessment?
during this cycle?	assessed?	assessing the	describe the	and how many or		conclusions	
Please include	Please	SLO? Please	student	what proportion		about	
the outcome(s)	indicate	include a copy	group(s) and	of students		student	
verbatim from	the	of any rubrics	the number	should be at it?		performance	
the assessment	semester	used in the	of students			?	
plan.	and year.	assessment	or artifacts				
		process.	involved.				
(SLO #2) Understand and apply knowledge of the various subfields of physics at the undergraduate level.	Spring 2014 (This assessment will be performed every year.)	The assessment tool is a standardized examination.	All graduating physics majors.	Criterion: Overall and in the two breakdown areas of the MFT, ninety percent of CSU – Pueblo physics majors will score at or above the 50 th percentile on the MFAT standardized exam.	For the most recent testing, 100% of the students (1/1 @ 77 th percentile) met the criterion for achievement. Over the past two years, the cumulative resuts are that 44% of the students (4/9) met the criterion.	This was an outstanding, hard working, independent learner, and also a math major.	Keep pushing for qualified, young and energetic new faculty. Keep recruiting strong independent students for the physics major. This last improvement is in conflict with our lack committed, energetic faculty. I have great concern over the continued viabaility of the physics service program in physics, let alone the physics major itself.

Comments: See comments below.

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 recommendation s 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?
(SLO #3) Effectively communicate their results orally and in writing (SLO #4) Learn independently, locate and use appropriate sources of technical material and make use of modern scientivic and computational tools	June 2015	Need for new tenure track faculty members with a physics Ph.D who is energetic, and a committed leader.	Partially—with the resignation of Karen Lundberg, a Math Lecturer position was shifted to Physics, and we obtained Dr. Caixia Gao as a visiting lecturer (now converted with physics endowment funds to a VAP for AY 16-17. We also were able to hire another PhD in physics as a sabbatical replacement for Dr. Brown. We hope to gain in quality and morale by these two young scholar-teachers. However, the physics program needed at least one new committed (I.e. Tenure Track) faculty to improve. The AY13-14 budget crisis left the program with only one faculty member (E.E. Phd), putting the program and service teaching in an unworkable condition. The hoped-for replacement of Dr. Marta Wallin after her budget-driven retirement has now turned into a loss of her position	We hope to gain in quality and morale by these two young scholar-teachers. Dr. Gao has indeed worked well, added enthusiasm and quality to our teaching and scholarship in physics. However, the physics program needed at least one new committed (I.e. Tenure Track) faculty to improve. However, the loss of one position from Mathematics has weakened and stressed current faculy, lowered quality, and made us less flexible.

Comments: With the resignation of Karen Lundberg May 2015, a lecturer position was opened, and used to hire a visiting physics lecturer, Dr. Caixia Gao, who has worked out well. Using the Sallie Watkins Endowed Professor of Physics money, we were able to keep Dr. Gao (who planned to leave for another position) for AY 16-17 by upgrading her position to Visiting Assistant professor. In March 2016 another new PhD physicist, Shamim Ahktar, was successfully hired as a sabbatical replacement for Dr. Brown's AY 16-17 sabbatical. These concrete actions, and the resulting presence of a young, happy and engergetic physicist, have give a bit of hope and new life in the physics service and majors program, and probably enabled a few new solid majors to be recruited. Morale has improved, and the one tenured physics program has become more engaged with active recruiting, willingness to advise a new major, attending and energetically reporting on a conference in physics teaching and program building, etc. It is not surprising if this one tenured faculty member is not active in program review or program assessment. Progress has been made, but the visiting position gives uncertain program commitment to and from the visiting people. It was very disappointing that and the position opened up by the retirement of Dr. Marta Wallin, which we hoped offered an opportunity to bring in a new, junior faculty member to lead the program, has apparently been taken away from our staffing. Even a physics service program for Chemistry, Engineering, Math, Biology, Exercise Science, etc. is not viable without replacing Dr. Wallin. (Dr. Brown talks of retirement, but is committed to returning AY17-18 following his sabbatical year.)