

Q21. Welcome to COA's online portal for completing your Annual Program Update (APU). Your work will be saved at the end of each section. If you partially complete a section, that section's responses will not be saved. Prior sections will be saved, should you need to stop and leave the portal for a period of time and then come back to it.

If you have any questions about the portal during the process, please email Dominique Benavides, District Research Analyst at [dbenavides@peralta.edu](mailto:dbenavides@peralta.edu)

For questions about your program or the process, please contact your instructional dean or service area or administrative unit vice president. Thank you!

Q48. Please select one Program Type:

- Instructional
- Student Services
- Administrative Unit

Q1. Please select the discipline, department or program:

CHEM ▼

Q2. Please provide the name of the person(s) completing this Program Review:

Peter Olds

Q103. The mission of College of Alameda is to serve the educational needs of its diverse community by providing comprehensive and flexible programs and resources that empower students to achieve their goals.

Q3. Please provide the mission statement for your program:

COA chemistry offers general chemistry (Chem 1A/1B) for science majors, introductory general chemistry (Chem 30A/30B) for allied-health career track students. COA chemistry is a small program with one full time and five part time instructors. One chemistry laboratory (with four chemical hoods) exists which can reasonably accommodate 25 students and is currently used for all chemistry courses offered at COA. The COA chemistry program had been neglected for many years prior to Fall 2005 resulting in a substandard classroom/laboratory environment, serious safety issues in the lab, and a tendency to attract unprepared students looking for an easy grade. Efforts to address such issues are ongoing but have historically been hindered by the high administrator turnover rate, union protection of chronically unqualified staff, and an unacceptably low FT/PT ratio. Demand for chemistry courses is high since these are prerequisite for almost any career in the sciences or health care industry.

Q104. Please specify the date of your program's last Comprehensive Program Review (month and year):

Oct. 22, 2015

Q105. Cut and paste the program goals from your program's most recent Program Review into the left-hand column. Then complete the remaining columns of the table below. Program Review Archives, PCCD and COA Strategic Goals can be found on your program's APU home page at <http://alameda.peralta.edu/planning-documents/sample-page/instructional/>

Assessment	PCCD goal advanced upon completion (#)	COA goal advanced upon completion (#)	Progress on goal or AUO attainment (specify: the date completed, revised, or ongoing)	Explanation or Comments (describe any revisions or impediments)
<p>Improvement 1. A late start Chem 50 Beginning Chemistry was implemented to accommodate under-prepared Chem 1A students who are screened out of that course during the first two weeks. This is in response the typically high attrition rate for Chem 1A due to lack of math skills and study habits for a significant percentage of students. Late start Chem 50 allows these students time to develop these basic skills while becoming familiar with chemistry. 9-26-2017 Chem 50 was discontinued and changed to late start Chem 30A (for which the covered material is about the same). Subsequent to implementation of the Chem 30A being made a prerequisite for Chem 1A, three Chem 30A courses, including a late start class, have now been implemented this semester. It is hoped that this new prerequisite, and the greater availability of Chem 30A, will increase the success rate in Chem 1A (where the district-wide attrition rate has long been around 50%).</p>				
<p>Improvement 2. An excellent part-time instructor who was hired to teach Chem 1A did an outstanding job of rewriting the Chem 1A lab manual and developing new Chem 1A labs. On 9-26-2017 This instructor left for a full time job. Two new Chem 1A instructors have just been hired who are enthusiastic about continuing the lab manual update effort. A Chem 30A instructor is doing an excellent job rewriting the Chem 30A lab manual.</p>				
<p>Attempted Improvement 3. A high quality part-time lab tech, a student who excelled in the COA Chem 1A/1B series, was hired in 2016 to prepare Chem 1B labs. This hire was in response to nearly a decade of documented problems, including lack of inventory control, mis-bottled chemicals, unreliable solution concentrations and critical safety issues resulting from inappropriate storage of incompatible chemicals. 9-26-2017 This competent PT lab tech left for a high quality university with essentially a full scholarship. In 2017 this scenario repeated itself with another student who is interviewing for medical school. So we are stuck with the original problem and the need for perpetual training of new inexperienced part time lab techs to set up Chem 1B labs. At the moment this chronic issue remains unresolved.</p>				
Curriculum (if applicable)				
<p>in Fall 2017 Chem 50 was discontinued and replaced with Chem 30A. Currently three Chem 30A, two Chem 1A and one Chem 1B courses are offered at COA.</p>				
Instruction (if applicable)				
<p>The FT/PT ratio in chemistry is 1/5 (one FT and 5 PT chemistry faculty members). This presents a burden on students, who frequently are taught by inexperienced instructors due to high PT turnover. And this presents a burden to the single FT faculty member who is charged with continually hiring and evaluating new PT faculty members. And this is unfair to long-serving high quality PT faculty members who deserve a full time job and look for it elsewhere.</p>				

**Student Services and Student Equity**

First semester chemistry courses Chem 1A and Chem 30A have success percentages in the 50% vicinity because under-prepared students tend to sign up without realizing the work load and/or prerequisite math knowledge. Chem 30A was recently implemented as a Chem 1A prerequisite district-wide to mitigate this issue. Second semester courses Chem 1B and Chem 30B have higher success percentages, 65% to 80% because the smaller number of students who enter these courses have already passed the first semester prerequisite courses Chem 1A and Chem 30A. Summer Chem 1A students tend to be stronger than regular semester students because a significant number are from four year colleges completing science requirements at COA while at home over the summer. Four year college students tend to complete homework, study, etc. and know what it takes to get a good grade. Some students, already familiar with the material, take the six-week summer Chem 1A as an intense chemistry review.

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**Professional Development, Institutional and Professional Engagement, and Partnerships**

The FT faculty member is collaborating with several Bay Area research institutions including Stanford. At the time of the previous APU update, a Stanford professor had agreed to be co-PI and/or collaborate on a COA undergraduate research grant involving geochemistry and geophysics.

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**Other Program Improvement Objectives or AU Outcomes**

Plan 1. Refurbish and bring up to satisfactory standards the abandoned D-109 main campus chemistry lab plus D-105 stockroom area. This includes reinstallation of hoods, laboratory furniture, and a complete plumbing upgrade.

Similarly refurbish and bring up to satisfactory standards for demos the D-119 lecturn (gas and water) and D-119 chem demo prep area. 9-26-2017 four hoods and bench faucets have been reinstalled. Another hood is needed for the Chem/Demo prep area in addition to shelving and lab bench re- installation. Dry chemical storage area also needs shelving replacement.

Plan 2. Integrate chemistry with a new earth sciences program that embraces chemistry of rocks and minerals.

Plan 3. Obtain an electron microscope with an EDS elemental analysis attachment for shared use between chemistry, physics, biology, and earth sciences. Hire a FT faculty member whose responsibilities include instruction on using and maintenance of this facility.

Plan 4. Coordinate with COA's CTE dean (and SEM manufacturer) to develop a SEM operator plus maintenance training program with this equipment.

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**Other Program Improvement Objectives or AU Outcomes**

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**Q107.**

Use the Course Completion Dashboard and the Enrollment Trends Dashboard, review and reflect upon the data for your program. Describe any significant changes and discuss what the changes mean to your program. Consider whether performance gaps exist for disproportionately impacted students. Performance gaps exist when a group's completion rate falls 3% points below the discipline average. Focus upon the most recent year and/or the years since your last comprehensive program review. Cite data points from the dashboard to support your answer.

Success rate for Chem 1A was 60% during Spring 2017, 58% in Fall 2017 and 44% in Spring 2018, roughly fluctuating around 60% for the past seven years. The Chem 1A success rate drop seen in Fall 2018 reflects a single course (statistics of small numbers) since the other Chem 1A was cancelled that semester. District-wide Chem 1A success rates have historically been around 50%, motivating implementation of the Chem 30A prerequisite in Fall 2018. Chem 1B success rate fluctuation may reflect ongoing prep/instruction issues with Chem 1B lab. The FT lab tech is incapable of prepping Chem 1B labs forcing us to repeatedly hire and train of students as part-time lab techs to carry out Chem 1B lab prep. This Spring 2019 semester, such a student has not been hired yet. Also, the high turnover rate for part time instructors adversely impacts the continuity of instruction, particularly in the lab which is, and has been, plagued with substandard management and infrastructure.

**Q109.**

Describe the department's progress on Student Learning Outcomes (SLOs) since the last Program Review/APU. If your discipline offers a degree or certificate, please describe the department progress on Program Learning Outcomes (PLOs).

At COA Chemistry all instructors use the American Chemical Society standardized exams appropriate to their particular course. This allows objective comparison of COA student performance with the rest of the nation in chemistry.

**Q153.**

Describe the outcomes and accomplishments from previous year's funded resource allocation request.

	Source (any additional award outside your base allocation)	Total Award Amount	Outcome/Accomplishment
<p>Brief description of funded request</p> <p>There has been no progress on developing an allocation of resources to hire an additional one or two FT instructors.</p>			
<p>Brief description of funded request</p> <p>There has been no progress on developing an allocation of resources to hire a competent chemistry laboratory technician qualified for compliant lab management.</p> <p>The critical unresolved issue in chemistry revolves around substandard laboratory facilities and unqualified staff "in charge" of these facilities. By law chemistry laboratories are required to have:</p> <ol style="list-style-type: none"> <li>1) A current and maintained chemical hygiene program.</li> <li>2) A current and maintained inventory system (accessible to faculty).</li> <li>3) A safety officer to enforce and maintain the above.</li> </ol> <p>COA is out of compliance in each case, and has been out of compliance since at least 2005, when the FT chemistry faculty member was hired, despite his documentation efforts since then.</p>			

Brief description of funded request

Funding for TAs, tutors, lab workers, and instructional assistants has not materialized, or is temporarily promised only to be withdrawn. An excellent Chem 1B tutor is currently working without pay since the LRC can only hire current students as tutors. But successful Chem 1B students are often not enrolled at COA subsequent to completing Chem 1B (since organic chemistry is not offered here).

Brief description of funded request

Brief description of funded request

**Q140. Personnel:** If you are requesting new or additional positions, in any job classification, please explain how new positions will contribute to increased student success:

	Already requested in recent program review?	Program goal (cut and paste from program review)	Connected to assessment results and plans?	Contribution to student success	Alignment with <a href="#">college goal</a> (#)	Alignment with <a href="#">PCCCD goal</a> (letter)
Request 1: Two full time chemistry faculty.  The FT/PT ratio is currently 1/5. The stability, longevity and banked experience of FT instructors will obviously benefit struggling students.	Yes					
Request 2: One full time laboratory technician.  Currently COA is out of compliance with the following statutory requirements since the laboratory lacks: 1) A current maintained chemical hygiene plan. 2) An inventory system accessible to faculty. 3) A safety officer to enforce and maintain 1) and 2).  This is obviously relevant to the personal safety of students, faculty and staff who use the lab.	Yes					
Other:						

**Q141. Technology and Equipment:** Please explain how the new technology or equipment will contribute to increased student success:

	Already requested in recent program review?	Program goal (cut and paste from program review)	Connected to assessment results and plans?	Contribution to student success	Alignment with <a href="#">college goal</a> (#)	Alignment with <a href="#">PCCCD goal</a> (letter)
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Request 1:

Before we can assess, we need a current maintained technology plus equipment inventory. A chronic issue for COA science labs is chronic lack of inventory control for both supplies and equipment.

Request 2:

Electron microscope with EDS attachment plus service maintenance contract for geochemistry undergraduate research and CTE SEM operator/maintenance training program.

Other:

Yes					
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Q142. Facilities: How will this facilities request contribute to student success? Indicate whether and how facilities maintenance and repair affected your program in the past year with your request.

Request 1:

An additional chemistry laboratory. The D-109 chemistry area upgrade is stalled. Finishing this upgrade could be accomplished for around \$50,000 based on a recent VWR quote and would greatly increase chem lab use flexibility, in addition to providing a space for students to participate in rock chemistry research and geology lab activities.

COA is the only Peralta college with one chemistry laboratory.

Request 2:

Other:

Already requested in recent program review?	Program goal (cut and paste from program review)	Connected to assessment results and plans?	Contribution to student success	Alignment with <a href="#">college goal</a> (#)	Alignment with <a href="#">PCCCD goal</a> (letter)
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Yes					
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Q145. Professional Development or Other Requests: How will the professional development (PD) activity contribute to student success? What PD opportunities and contributions will your program make to the college in the future?

Already requested in recent program review?	Program goal (cut and paste from program review)	Connected to assessment results and plans?	Contribution to student success	Alignment with <a href="#">college goal</a> (#)	Alignment with <a href="#">PCCCD goal</a> (letter)
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Request 1:

Geology: Funding for conferences. The FT faculty member routinely presents at and participates in scientific conferences worldwide. This excitement is passed on to students in chemistry and geology classes, motivating them to want to participate. Some limited funds have been provided by Prof. Dev. and President Tim Karas for this effort. Thank you!

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Request 2:

Geology: Funding for Annual Cretaceous-Paleogene Field Expedition to Rocky Mountain States. President Karas and the Peralta Foundation have successfully found some funds for participating students and faculty for the 2017 and 2018 expeditions. Thank you!

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Other:

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**Q144.** Congratulations! You have completed your Annual Program Update for 2018-19. If you have completed each question in each section, you may close this tab. Your answers will be saved and submitted. Thank you!

**Location Data**

**Location:** [\(37.768798828125, -122.2620010376\)](#)

**Source:** GeolIP Estimation

