FACILITIES NEEDS ASSESSMENT APPLICATION
Fall 2019

Name of Person Submitting Request:	**Sheri Lillard & Amy Avelar**
Program or Service Area:	**Chemistry**
Division:	**Science**
Date of Last Program Efficacy:	**Spring 2016**
What rating was given?	**Continuation**
Amount Requested (if available):	**$120,000**
Strategic Initiatives Addressed:	2. Student Success (completions, including transfer and degrees)
Needs Assessment Resources (includes Strategic Initiatives):	https://www.valleycollege.edu/about-sbvc/campus-committees/academic-senate/program-review/needs-assessment.php

NOTE: To facilitate ranking by the committee, submit separate requests for each project; however, multiple items can be submitted as one request if it is required that the projects are packaged together.

You are required to meet with Robert Jenkins--Director, Facilities, Maintenance, & Operations—by WEDNESDAY, OCTOBER 9 if you are submitting a Facilities Needs Request. 909-384-8662 or rjenkins@sbccd.cc.ca.us.

Please provide the date of your meeting:

Meeting with Bob Jenkins, Kevin, Casey Thomas, and Amy Avelar: 9/26/19 at 11:30 am; 10/17/19 at 12:15 pm

Capital Improvement ☐

Brief Statement of Request:

Increasing lab drawers for Organic Chemistry (CHEM 212/213) in PS 310 and PS 311, and equipping CHEM 205 drawers (PS 311) with locks. Increasing the drawers in the balance rooms, PS 317, 313 with locks.

Are there alternative funding sources? (for example, Department, Budget, Perkins, Grants, etc.)

Yes ☐ NO X

If yes, what are they? _____

1. Provide a rationale for your request. (Explain, in detail, the need for this project.)

We moved into the Physical Science building during Summer 2011, and have been fully occupied beginning with the 2011-2012 academic year. We currently have one laboratory dedicated for courses in Organic Chemistry, which include CHEM 104, 105, 212, and 213. The chemicals used in these courses require that students have individual fume hood space, and therefore these courses should not be scheduled in any other chemistry lab room. The adjoining room, PS 311 is an instrument room, which contains balances, other instrumentation, and additional drawers. In recent years, due to increased lab offerings and occupation of the other four lab rooms, the CHEM 205 lab has also migrated to PS 310/PS 311, and now utilizes unlocking lab drawers in PS 311.

2. Indicate how the content of the department/program's latest Efficacy Report and/or current EMP supports this request and how the request is tied to program planning. *(Directly reference the relevant information from your latest Efficacy Report and/or current EMP in your discussion.)*

In the past several years (including 2018-2019 EMP), a goal has been to increase number of science majors and STEM degrees. Since 2011, our offerings of CHEM 212/213 have grown significantly (see Enrollment Trends below). If we are to maintain the quality of instruction for our current lab offerings, ensure student success, and grow according to the District's and College's projections, we must be able to expand the number of lab drawers for these courses. We have also increased our offerings of CHEM 101, 150, and 151. We have had to resort to the use of totes because we are out of lab drawers and this creates a safety hazard. The totes of to be placed on the lab bench which takes up the limited space for the actual experiment.

3. Indicate any additional information you want the committee to consider *(for example, regulatory information, compliance, updated efficiency, student success data, planning, etc.).*

Quality of Instruction. CHEM 212/213 are sophomore courses at the transfer institutions. When our students transfer, and most of them do, they are expected to have acquired a certain standard of laboratory skills. In this particular year-long sequence, it is absolutely necessary that students work independently and this can only be accomplished if they have their own set of glassware in their own lab drawer. CHEM 150/151 are freshman courses at the transfer institutions and the skills the students learn transfer to organic chemistry and beyond.

Enrollment Trends. When this building was designed, the typical offering of Organic Chemistry was on-sequence; in other words, CHEM 212 in the Fall and CHEM 213 in the Spring, for a total of 2 sections per year. In Fall 2011, we had 3 sections in the Fall and 2 sections in the Spring, for a total of 5 for the year. This already represented a 150% increase in Organic lab sections, compared to what had been offered for many years. If we further compare 2011–2012 (5 sections) to 2018–2019 (11 sections), we have doubled the number of sections offered, or have experienced another 100% increase in the past several years.

Current Lab Drawers. We have 76 lab existing drawers that are used for CHEM 212/213. Given that we currently offer 5 sections of CHEM 212/213 this semester, with a cap of 20 students, this amounts to 100 lab drawers needed. We are already short by about one section, to allow each CHEM 212 and CHEM 213 student to perform their lab work independently.

Proposed Expansion. There are three areas in PS 310/311 proposed for this project: 1) There is space in PS 310 that is currently used to hold backpacks, etc., which students rarely use; 2) There are a few large cabinets, which are also rarely used; and 3) There are large cabinets in PS 311 that are sometimes used. A preliminary estimate reveals that converting these spaces would provide an additional 64 lab drawers, which when combined with the existing 76 will give a total of 140 drawers. This number of drawers could house 7 complete sections of CHEM 212/213, would allow our current students to work independently, and would accommodate additional growth over the next several years. The other part of this request is simply to have locks installed on the bank of drawers currently used for CHEM 205. Given the rigorous nature of the expected lab results, it is critical that the students can lock up their glassware.

4. What are the consequences of not funding this facilities request?

Most importantly, quality of instruction will suffer, because we will have no choice but to have students share lab equipment. We already know that such a situation does not promote student success in the laboratory sciences—students who have relied too heavily on lab partners in previous courses lack the necessary skills to set up the glassware and perform the experiments accurately and efficiently. This practice of working with lab partners is pedagogically unsound,

especially for a lab sequence so critical to many of the sciences (e.g., chemistry, biology, biochemistry) and professional health areas (e.g., medical school, pharmacy school, etc.). The students will not achieve the independence that is expected by our faculty, the degree, and the instructors at the transfer institutions. Additionally, we will have no room to grow, because we are already beyond capacity with the existing lab drawers.