Program Review Update 2025

Program: Biology

Division: STEM

Writer(s): Biology Faculty

SLO/SAO Point-Person: Federico Lopez Borghesi

Email your completed form to Karin Spirn and your dean by November 3.

Helpful Links:

- ★ Tools for Writers - with contacts and info for help with specific sections.
- ★ Program Review Glossary - defines key terms you can review when writing.
- ★ Discipline Data Packets – institutional research about disciplines and student services
- ★ Course Success Rates Dashboard – allows you to research your program's success rates

Detailed information and instructions appear at the end of this form. For help, please contact Karin Spirn at kspirn@laspositascollege.edu.

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1. Please describe your program's most important **achievements** in year 24-25.

- Onboarded new full time biology faculty: Federico Lopez Borghesi
- Made headway on discuss and planning for compressed calendar, new course numbering within department and in coordination with Chabot
- Established curriculum to change three-semester Biology sequence to two-semester sequence
- Currently working on converting the AS Allied Health program to a Zero Textbook Cost (ZTC) model. In Fall 2024, one section of Anatomy was converted into a ZTC course. By Fall 2025, three sections of Anatomy have been converted to ZTC courses.
- Added two additional Biology student clubs for a total of three. The clubs address our students' areas of interest; one for allied health majors, one for students interested in a pre-med pathway, and one for students interested in general biology.
- Submitted Final Reports for multi-year NSF ATE Grant, which supported incorporating new hands-on labs related to Biotech Industry into Biology 1A, 1B, and 1C; including purchasing supplies and equipment for these classes. This grant also supported our Biotech Bootcamp for high school students, offered in the summer.
- Submitted Final Reports for multi-year California Learning Lab Scaling Grant, Social Tools for Bio: Communities of Practice. This led to the creation of 34 publicly available collaborative learning modules in Biology

- Degrees Awarded: Biology AA/AST/UC Pathway (23), Allied Health AA/AS (51)
- Certificates Awarded: UC Pathway (2), Computational Bio (2)

2. Please describe your most important **challenges** in year 24-25.

- As of this academic year, we no longer have any funding to offer **Smart Shops** to our students. These are free workshops that we have run each semester to help students build skills that they are weak on for their current classes. We have successfully been running an average of 9 Smart Shops per semester, and we currently have the funds to pay for zero.
- The **Biology Majors series is being condensed** from a three class to two class series, in order to help students matriculate faster and meet new expected curriculum changes in California. We will need to sunset two BIO courses: BIO1A and BIO1B and transition to offering one organismal biology course BIO1R. This will take a lot of coordination and curriculum building between full-time faculty and part-time faculty, as well as with laboratory staff.
- Next year, the District will transition to the new **Compressed Calendar**, which causes many scheduling challenges for our programs. Our main scheduling constraints and challenges include the limited lab space we currently have available, managing lab preparation turnaround time for lab technicians, staffing instructors so each are supported by adequate lab technicians, and accessibility to students. Special concerns in the Biology (and other STEM) Department also include adjusting laboratory curriculum and activities to accommodate fewer class meetings. The new calendar results in very long laboratory meetings for students, and we are struggling to fit in a similar number of lab sections in the same space for certain impacted classes, such as Anatomy.
- We have two class-sets of **laptops** for Biology labs, however, we often have conflicts with lab schedules so that we don't have enough laptops for all students or all classes.
- Our full-time **Microbiology instructo**r, Barbara Zingg, has retired leaving no full-time lead in this highly specialized field. Microbiology includes the acquisition, storing, culturing, and handling of pathogens that require consistent oversight by a full-time instructor. A full-time instructor is also needed to create the specific FF&E items for microbiology as we transition to the new STEAM building.
- An ongoing challenge for the department is maintaining a strong pool of adjunct faculty; we compete with other community colleges for highly skilled instructors, and veteran part-time faculty leave for full-time positions elsewhere.
- Although not confirmed, it is very likely that the Common Course Numbering will remove prerequisites for all Allied Health courses. We anticipate this will impact enrollments in Bio 30, Anatomy, Physiology and Microbiology, and therefore facility use as well. We are in

conversations about how this may affect curriculum rigor, course outlines and teaching pedagogy as we anticipate less prepared students in Anatomy, Physiology, and Microbiology.

- The inability to hire **paid substitutes** for teaching has caused challenges when faculty are absent due to illness, hiring committees, participation in seminars, and other professional development.
- **Onboarding new part-time faculty** is a challenge, particularly when the HR processing time of new hire paperwork results in instructors who have no access to rosters or Canvas before the start of the semester. It also requires a full-time instructor to sit in on the new faculty's class until HR processing is complete.
- The ongoing planning of the **new STEAM building experienced a drastic budget cut.** The build-out for several of the labs is less than anticipated and originally planned. This limits the capacity of this building to accommodate for long-term growth and support increased course offerings. For example, we will have infrastructure for four **cadaver stations**, but only two will be functional. Will need to find additional funding sources to build out the 2 remaining cadaver stations. We are unclear what the current buildout for the new cadaver labs will actually be, so we are unsure how much funding we'll need.
- When faculty have written and been awarded **external grant funds** to support enriching our program, grant administration has provided unclear parameters and required multiple follow-ups over long periods of time. This has slowed our ability, sometimes by many months, to complete the following:
    - Spend funds, for example, on a contract for an external evaluator
    - Establish and receive compensation, either as hourly pay or reassigned time
    - Accurately anticipate costs such as our salary and benefits to effectively manage the grant budget
    - Order supplies and equipment
    - Submit reports to the funding agency in a timely manner

  To ensure effective grant administration in the future, we may need to fund someone to coordinate the grant administration, in addition to requesting support/funds for the proposed activities.
- In all of our laboratory courses, **lab activities and lab manuals need reviewing** and reevaluation to improve student learning, ideally with more inquiry-based instruction. This requires full-time and part-time faculty to coordinate with lab technicians for curriculum design and implementation, all of which takes a significant amount of time.
- We need **sustainable funding for new cadavers**, which get worn out with ongoing use. We currently have no renewable funding source to purchase these materials, which are vital to the success of our Allied Health students.
- Many Biotechnology-related activities require reagents that expire yearly and aren't included in the **current supply budget**. Many of our course-level and program-level SLOs reflect student competency in lab skills using industry-level equipment. There is currently no budget for fixing any equipment.

3. What SLO(s) or SAO(s) if any did your program assess or discuss since your last program review? Please describe any findings and planned actions.

- For both our pathways, AA Allied Health and AS Biology, we have continued collecting CSLO data from courses that feed to a PSLO focusing on *research skills*. These include the ability to conduct guided or independent research, analyzing case studies, and collecting, analyzing and presenting data.
- The non-disaggregated data shows a similar pattern for both Allied Health and Biology majors, with achievement of the PSLO skewing towards the higher end. For the Allied Health pathway, 72% of students assessed achieved above average or mastery levels (total n =854). For Biology majors, 83% of students achieved above average or mastery levels (total n = 287).
- The disaggregated data shows some recurring patterns with respect to gender and ethnicity for both Allied Health and Biology majors.
- There was no clear difference in achievement level between students who identify as female and those who identify as male. However, we still see a significant difference in enrollment. In both pathways, male students still represent less than one third of the total number of students. While both pathways have students who do not identify as either female or male, the numbers were still too low to allow for a careful examination of the data.
- The pattern of achievement was consistent across all ethnicities for both pathways, with most students reaching above average or mastery levels. As shown in the table below, Allied Health has done a good job at serving students from historically marginalized groups.

Ethnicity	Allied Health	Biology	Tri-Valley Area
African American	**58** (5%)	**8** (2%)	2%
American Indian/Alaska Native	**21** (2%)	**4** (1%)	<1%
Asian American	**247** (23%)	**139** (39%)	37%
Filipino	**123** (11%)	**26** (7%)	-
Hispanic	**227** (21%)	**55** (15.5%)	13%
Pacific Islander	**26** (2.4%)	NA	<1%
White	**380** (35%)	**128** (36%)	42%

Source: San Francisco Chronicle (10/01/2025)

- For Allied Health, we see that first-generation students and non-first-generation students achieved similar levels of mastery of the PSLO. This is not the case for the Biology majors, where ~12% fewer first-generation students reached the high levels of achievement for the PSLO compared to non-first-generation students.

- As a department, we are undergoing significant changes to the curriculum. As we make these changes, we need to keep in mind the persistent gaps in equity, including the need to attract more male students and increase diversity in both programs. We need to continue working on increasing accessibility to courses and increasing outreach to the community.

4. What are your upcoming plans? Please note any ways that these support student achievement and equity.

- We submitted a faculty request for a full time Microbiology instructor. This is a replacement following the retirement of Barbara Zingg.
- Switch from offering 3-semester Biology Majors' sequence to 2-semester sequence. This will reduce the number of units needed to complete the transfer pathway and align more closely with the majority of other community colleges and four-year universities and colleges.
- We are collaborating with faculty and lab technicians to adjust laboratory schedules to accommodate compressed calendar, and to adjust to the new two-semester majors' Biology sequence.
- Continue developing a ZTC Pathway for Allied Health majors. This requires developing ZTC sections for Bio 30, 7B, and 7C. Additionally, Chem 30A will also need to offer at least one ZTC section.
- New equipment has been requested through an Institutional Equipment Request. Since Anatomy is one of the most heavily impacted and frequently over-enrolled courses in the department, additional models are needed to reduce the model-to-student ratio. This will enable students to have increased hands-on time with the equipment, enhancing their learning experience.
- Continued participation in the new STEAM building planning
- Preparing for common course numbering updates (impacts curriculum, enrollment changes, equipment and material needs)

CTE REPORT (CTE DISCIPLINES ONLY)

1. Does this program continue to meet a labor market demand?

- Yes or No:
- Explanation/evidence:

2. Are there similar programs in the area? If yes, list the programs and their institutions.

- Yes or No:
- Explanation/evidence:

3. Has the program demonstrated effectiveness as measured by the employment and completion success of its students? Provide employment and completion success based on Perkins Core Indicator Report.

- Yes or No:
- Explanation/evidence:

4. Does the program provide opportunities for review and comments by local private industries? Attach most recent Advisory Committee meeting minutes.

- Yes or No:
- Explanation/evidence:

Detailed Instructions and Information

Instructions:

1. Please answer each question with enough detail to present your information, but it doesn't have to be long.
2. If the requested information does not apply to your program, write "Not Applicable."
3. Optional/suggested: Communicate with your dean while completing this document.
4. Send an electronic copy of this completed form to Program Review chair Karin Spirn and your Dean by November 3.
5. Even if you don't have much to report, we want to hear from you, so your voice is part of the college planning process.

Audience: Deans, Vice Presidents of Student Services and Academic Services, All Planning and Allocation Committees. This document will be available to the public.

Uses: This Program Review will inform the audience about your program. It is also used in creating division summaries, determining college planning priorities, and determining the allocation of resources. The final use is to document the fulfillment of accreditation requirements.

Please note: Program Review is NOT a vehicle for making requests. All requests should be made through appropriate processes (e.g., Instructional Equipment Request Process) or directed to your dean or supervisor.

Time Frame: This Program Review should reflect your program status during the 24-25 academic year. It should describe plans starting now and continuing through 2025-26. It is okay to include information outside of these time windows as needed.

Program Review Process: Comprehensive Program Reviews will be completed every three years, in alignment with the SLO/SAO cycle. On the other years, programs will complete an update.

SLO/SAO Process: SLOs and SAOs should be assessed according to a three-year plan, with comprehensive reporting on the third year. For more information, contact SLO chair John Rosen: jrosen@laspositascollege.edu

Equity is a guiding principle. Here is the LPC definition:

Las Positas College will achieve equity by changing the impacts of structural racism, ableism, homophobia, and systematic poverty on student success and access to higher education, achieved through continuous evaluation and improvement of all services. We believe in a high-quality education focused on learning and an inclusive, culturally relevant environment that meets the diverse needs of all our students.

LPC Equity Definition: Equity is parity in student educational outcomes. It places student success and belonging for students of color and disproportionately impacted students at the center of focus.