

**De Anza College**  
**Program Review – Annual Update Form**

**1. Briefly describe how your area has used the feedback from the Comprehensive Program Review provided by RAPP members (if unsure, request the feedback form from your dean/manager).**

The following analysis is based on the feedback section from the Comprehensive Program Review. The Feedback for Improvement and Comments made by RAPP are in blue italics.

**Program Goals** *General: How will you get student input from the village? We will look for this in your update next year.*

By actively seeking student input through these strategies, a learning village can make informed decisions about OER adoption and tailor resources to better support student needs and interests. Some examples of how input from villages be obtained may include:

**Village Input Implementation:**

- Collaborate with those running events at the Health and Life Science Village such as student clubs to gather feedback.
- Collaborate with Outreach Counselors to determine need for OER

***Goal 1: Feedback for Improvement***

*The first goal could use more detail as to the factors that you are seeking alignment on in particular.*

- The textbook and rigor are two examples of the factors investigated for alignment. Other factors for course alignment include:
  - **Assessment Strategies:** Use varied assessment methods (e.g., exams, quizzes, projects) that align with learning outcomes. These assessments should gauge student understanding and mastery of key concepts and skills.
  - **Teaching Methods:** Evaluate teaching methods to ensure they support the achievement of learning outcomes. This may involve using active learning techniques, incorporating technology effectively, and promoting student engagement.
  - **Feedback and Evaluation:** Collect feedback from students and faculty regularly to identify areas for improvement. Use course evaluations, focus groups, and peer reviews to assess course effectiveness and alignment with departmental goals.

- **Faculty Development:** Provide opportunities for professional development for faculty to stay current with developments in the field, enhance teaching methods, and align their courses with departmental goals and industry trends.

**Goal 1: Comment**

*1. The goal description states “have a conversation” but the assessment is based on actually coming into alignment. We suggest sticking to this latter measure as the metric for this goal.*

Goal 1 will use alignment of courses as a measure of how to increase it.

**Goal 2 Comment**

*2. Given the absence of cost with OER, more flexibility by instructor may be possible What constitutes a “semi-regular basis?” Once a year? Once a quarter? Should you set goals based on specific courses?*

Discussions on OER will be held during department meetings once a quarter for OER education. Department meetings will allow for establishing goals to encourage discussion/adoption of OER materials. Some ideas include

- Develop an OER resource guide tailored to the department's courses and distribute it to all faculty by the end of the semester.
- Discussion will include lab manual for one foundational course such as Biol 11 (General Biology or Biology 6 series) by next program review.
- Include OER usage metrics in the department’s annual review process to track progress and recognize faculty contributions.

**Goal 3 Feedback for Improvement**

*We would recommend re-naming this goal and replacing “competency” with something more along the lines of engagement, impact, visibility, etc.*

The third goal was renamed: Increasing College-wide Impact in Biology faculty

**Goal 3 Comment**

*3. The Academic Senate is a great resource for identifying college needs to faculty involvement. Also, consider working with/reaching out to our Professional Development Office with requests and ideas for training topics*

The Academic Senate newsletter and senators will be consulted regarding opportunities for needs. In addition, the department will reach out to the Professional Development Office regarding ideas for training topics.

**Exploring Success Rates**

*Comments:*

*We would like to see more details about your planned coordination with Connect/MESA/SSC. Are these department-wide initiatives, or left to individual instructors? Have you looked at*

*success by course? These more granular examinations can expose other interesting observations*

Below are some ways these resources can be leveraged to support student success in biology courses:

1. Utilizing the Student Success Center and MESA

**Subject-Specific Tutoring:**

Advocate for dedicated biology tutors trained to address common challenges in areas like anatomy, physiology, and cellular biology.

**Workshops and Review Sessions:**

Collaborate with the center to host regular workshops, such as pre-exam review sessions on challenging topics like molecular biology or genetics.

**Supplemental Instruction (SI):**

Implement SI sessions led by peer tutors or advanced students who have succeeded in the course.

2. Leveraging College Connect

**Early Alerts for At-Risk Students:**

Use the Connect program to identify students struggling with attendance, grades, or assignments early in the term. Faculty can refer students to Connect for personalized support.

**Targeted Interventions:**

Host biology-specific workshops for Connect students, addressing barriers like test anxiety, lab skills, or critical thinking in science.

**Progress Monitoring:**

Partner with Connect to monitor referred students' progress and maintain consistent communication between biology faculty and Connect staff.

**Exploring Gaps in Successful Course Completion by Ethnicity**

***Feedback for Improvement:***

*What are the other ethnic groups that have lower negative completion gaps than Blacks and Latinos? Be specific where possible.*

While the largest ethnic groups that have lower negative completion gaps are Black and Latine students the other ethnic groups include: Filipinx -2, Native American -2, Pacific Islander -1

***Comments:***

*What groups/organizations can you identify to begin this work? Ethnic groups are identified. Blacks and Latinos have negative course completion gaps. Asian groups largest positive gap for course completion.*

To close gaps our faculty have started to work with MESA using the strategies mentioned above. In addition, we can reach out to student groups such as Black Student Union, LEAD (when in session), PUSO (Pililino Unity Student Organization), and Women in STEM (WiSTEM) De Anza.

**Teaching and Learning Strategies**

***Feedback for Improvement:***

*These strategies seem very general and widely applicable to all students. What can be done specifically to close gaps? This requires more reflection and specific detail about strategies to pilot and/or adopt.*

After more evaluation and analysis of data, some ideas to close the gap are to provide:

### **Culturally Responsive Curriculum and Pedagogy**

- **Encourage the Incorporate Diverse Perspectives:**

Revise course content to include contributions of scientists from underrepresented backgrounds and examples relevant to diverse communities (e.g., studying health disparities or environmental justice).

- **Contextualized Learning:**

Use case studies, lab activities, and examples that connect biology concepts to real-world issues impacting underrepresented groups.

- **Active Learning Strategies:**

Implement inclusive teaching practices like group work, problem-based learning, and peer instruction to engage diverse learning styles.

**Partner with the Student Success Center to provide biology-specific tutoring tailored to underrepresented groups. Offer culturally sensitive approaches to learning.**

#### **Study Groups:**

Facilitate structured, faculty-endorsed study groups for foundational courses to foster peer support networks.

#### **Bridge Program:**

Attend summer bridge programs for incoming students to strengthen skills in biology and related subjects before starting the semester.

#### *Comments:*

*Have you compared hybrid modalities to fully in person in terms of student success?*

A more in-depth analysis to compare hybrid modalities will be conducted for subsequent program review.

### **Reflecting on Trends in Awards**

#### *Feedback for Improvement:*

*The second question about alignment with program mission is not addressed. (For reference: 2. How do the trends in awards align with your program's mission and goals?)*

According to mission, the Biology Department supports and reinforces the mission of De Anza College by fostering a multicultural learning environment that promotes critical thinking, critical inquiry, and a respect for diversity and equity. The largest equity gaps by ethnicity include Black (-18), Latinx (-10), and Asian (+11) students, all other ethnic gaps fall between + 4 and -2. When observing Biology Enrollment at census, 40% of Biology students are Asian, 27% are Latinx,

4% are Black. If using equity gaps with alignment with program's missions and goals, then we can identify two main ethnic groups that require closer attention. As a result, our goals are in alignment to close equity gaps.

**Goal 1: Greater alignment in courses**, which will provide consistency in information for students and how we are supporting them to promote critical thinking, critical inquiry and respect for diversity and equity.

**Goal 2 OER discussion/adoption** is to start to dismantle financial barriers to success.

**Goal 3 Increase College-wide Impact in Biology Faculty.** The department has encouraged faculty from under-represented groups for college wide committees/procedures to promote future potential leaders.

***Comments:***

*Emphasizing and highlighting during an appointment the benefits of the AST/AA degree will help students see the value of applying for the degrees/certificates thereby increasing the number of awards given in the department.*

*Can you leverage your dedicated counselor to help with that communication? Could we increase degree attainment this way?*

Leverage dedicated BHES counselor to emphasize and highlight benefits of AST/AA degree to increase the number of awards.

**Staffing Needs**

***Comments:***

*Will hiring an additional FT faculty member increase A&P offerings or maintain current offerings? While more FT faculty is always desirable, what practical effect will increasing them have prior to current faculty fully retiring?*

Last year, the department lost a Biology 6 series, the Biology major, instructor. At the end of Spring 2025, two additional faculty will retire – one in introductory Biology and the other in Anatomy and Physiology, putting the department at a serious deficit of tenured faculty. Our enrollments have increased +4 points, and we need to continue to provide excellent instruction for our students.

**SLO Assessment**

***Feedback for Improvement:***

*What are the topics of discussion(s)? No implementation of assessment due to not having a clear direction from the college No specifics are given as to specific strategies implemented based on SLO assessment results. It is unclear whether this is because assessments have not been completed or because they have not been reviewed/discussed.*

***Comments:***

*SLO assessment directions are currently on the SLO website and the SLO Coordinator (Mary Pape) is available to support individual departments. Only department discussions and instructors completing assessment of their courses is presented*

Please note an example of the SLO Assessment in #7 of this form.

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**2. Describe any changes or updates that have occurred since you last submitted program review (comprehensive program review [submissions](#))**

The Biology Department has had one faculty retire in June 2024. This faculty taught the extremely popular Biology Majors series – BIO 6A, 6B, 6C. This position requires FT faculty to teach the series due to the high load factor. We have been granted a FT temporary faculty for 24-25 which has allowed us to not only sustain enrollment but also grow. We will have two other FT faculty retire in June 2025. With these 2 retirements the Biology department will be more than 20% down in FT load.

The Biology department also has a new chair, Elsa Jimenez-Samayoa, hired in the Fall 2024 quarter.

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**3. Provide a summary of the progress you have made on the goals identified in your last program review (as included in the comprehensive program review).**

**Goal 1: Greater alignment in courses.**

Faculty teaching the same courses have adopted the same textbook. In addition, faculty collaborate on the laboratory exercises and schedules to provide continuity to student learning.

**Goal 2: OER discussion/adoption**

The OER discussion is ongoing in department meetings, and the number of faculty adopting OER resources has increased in Biology 26.

**Goal 3: Increasing College-wide Impact of Biology faculty**

Biology faculty realize the importance of making a college-wide impact with new members in the following committees: RAPP, in addition to those on serving Academic Senate and Curriculum.

Simon Kang'a in RAPP

Lianna Wong and Lakshmikanta Sengupta in Academic Senate

Bob Kalpin in Curriculum for the BHES division

Elsa Jimenez-Samayoa in DALA

Bruce Heyer in Inspire Biology Student Club advisor

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**4. If your goals are changing, use this space to provide rationale, or background information, for any new goals and resource requests that you'll be submitting that were not included in your last program review.**

Our goals will remain the same as the program review.

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**5. Describe the impact to date of previously requested resources (personnel and instructional equipment) including both requests that were approved and were not approved. What impact have these resources had on your program/department/office and measures of student success or client satisfaction? What have you been able to and unable to accomplish due to resource requests that were approved or not approved?**

#### **Impact of Personnel on Student Success**

**A. Full time Faculty:** One of the Biology 6 Instructors retired last year. We were able to hire a full-time non-tenure track temporary instructor. We still require a permanent Biology 6 instructor. Biology 6 has the department's highest enrollment rate. In addition, the department will lose two additional instructors in Spring 2025 due to retirement. Being unable to replace these faculty members will have a severe impact on students. The negative impact of not having enough faculty includes:

**1. Loss of Institutional Knowledge and Stability:** Biology tenured faculty have years of experience and institutional knowledge that contribute to the smooth functioning of the department. Their departure disrupts continuity in course offerings, advising, and departmental leadership, which are critical for supporting a growing department.

**2. Challenges in Maintaining Program Quality:** Losing tenured faculty leads to larger class sizes, reduced course offerings, or over-reliance on adjunct faculty. This can impact the quality of instruction and limit the ability to provide individualized support to students, which is especially critical in laboratory-based courses.

**3. Reduced Capacity for Mentorship and Research Opportunities:** Tenured faculty provide mentorship to students and lead undergraduate research projects. Their absence reduces opportunities for students to engage in these high-impact practices, which are linked to increased retention and success, particularly in STEM fields.

**4. Strain on Remaining Faculty:** The loss of biology tenured faculty places additional responsibilities on remaining faculty, potentially leading to burnout and further attrition. This can create a cycle of instability that affects the department's ability to meet the needs of a growing student population.

**B. Biology Technicians:** The biology classes depend on the technicians who prepare for student lab experiments, in addition to setting up and maintaining laboratory equipment and specimens. They play a central role in the department knowing in real time what students and instructors need. Their experience with our laboratories is invaluable to running successful lab experiments. As a result, it is essential that the department maintains well-trained staff in support of student success.

#### **Impact of Resources on Student Success**

**1. Engagement and Active Learning:** Resources such as Vernier systems, biological models, and prepared slides are vital in promoting active learning in biology. These tools allow students to visualize and manipulate complex biological concepts, making abstract ideas more concrete. For example, Vernier sensors enable students to collect real-time physiological data, connecting theoretical concepts with practical applications. By engaging students in hands-on activities, these resources help foster curiosity and a deeper understanding of the subject matter.

**2. Development of Scientific Skills:** Access to resources like prepared slides and advanced laboratory equipment equips students with essential scientific skills. These include microscopy techniques, data collection, and data analysis, which are critical for academic success and career readiness in STEM fields. Students who use these tools are better prepared to complete rigorous assessments, such as lab reports and scientific presentations, which are often central to measuring success in biology courses.

**3. Achievement and Retention:** High-quality resources contribute to increased student achievement and retention. Studies consistently show that students in well-equipped labs achieve higher grades and are more likely to persist in STEM programs. These tools ensure consistent teaching of complex topics, reducing disparities in learning outcomes and promoting equitable success.

The availability of resources such as Vernier systems, biological models, and prepared slides has a profound impact on student success in the biology department. These tools enhance engagement, skill development, and retention while fostering equity for disproportionately impacted students. Addressing resource gaps through data-driven advocacy, student feedback, professional development, and partnerships is essential to ensuring all students can thrive in their academic and career pursuits.

### **Unapproved Resources Impact**

Outdated tools, technology, and infrastructure have had a significant impact on instructors' ability to teach effectively.

Though new microscopes were approved for Bio 10 (General Biology) students to replace older models that lacked sufficient magnification for the course's purposes. However, the cabinets used to store these microscopes are more than 25 years old. This infrastructure issue undermines the full benefit of the approved resource. To further highlight the infrastructure issues that have not been approved, the lab tables are at a height that requires students and instructors to bend over their microscopes for extended periods—often 2-3 hours per session. This poses serious ergonomic concerns.

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## **6. How have these resources (or lack of resources) specifically affected disproportionately impacted students/clients?**

### **A. Impact of Lack of Resources**



**1. Equity in Access to Learning Tools:** Disproportionately impacted students, including first-generation, low-income, or underrepresented minority students, often rely heavily on campus resources. Limited access to modern tools outside of the college environment can exacerbate educational disparities. Ensuring that the department is well-equipped provides these students with the same opportunities for success as their peers.

**2. Representation and Inclusive Learning Environments:** Investing in high-quality, modern tools demonstrates the institution's commitment to all students, fostering a sense of belonging. For students who may feel marginalized in STEM fields, access to these resources can affirm their place in the program and encourage their continued engagement. Additionally, tools that support diverse teaching strategies—such as visual, tactile, and experiential learning—cater to a wide range of learning styles and needs.

**3. Mitigation of Resource Gaps:** Disproportionately impacted students are less likely to have access to supplementary learning tools or experiences. A well-resourced department helps bridge this gap by providing the tools necessary for equitable learning.

**4. Motivation and Retention:** Access to cutting-edge tools can inspire students by demonstrating the practical and exciting applications of biology. This can enhance their motivation to persist in STEM fields and achieve their academic goals.

## **B. Impact of Loss of Personnel**

As stated in #5, the Biology department has lost a major's series, Biology 6 instructor. In addition, there will be two additional faculty retirements in the Spring. The Biology 6 Majors series is one of the most challenging for students, especially to disproportionately impacted students. Learning biology is like learning a new language, especially with the amount of new terminology. It is essential to teach a majors series course by tenured faculty member, it would be akin to having a language learning expert teach learners. To enumerate the consequences of losing the instructor, the following has been impacted:

**1. Loss of Mentorship and Role Models:** For disproportionately impacted students, the loss of tenured faculty can mean fewer mentors who understand their unique challenges and provide guidance. Tenured faculty often serve as advocates and role models, particularly for students from underrepresented backgrounds in STEM.

**2. Limited Access to High-Quality Instruction:** Disproportionately impacted students often benefit the most from experienced instructors who can provide personalized support and foster an inclusive classroom environment. The loss of tenured faculty may reduce access to such instructors, leading to a decline in student engagement and success.

**3. Impact on Equity and Representation:** If departing faculty includes those from underrepresented groups, it can affect the department's ability to provide a diverse and inclusive learning environment. This can negatively impact the sense of belonging for disproportionately impacted students.

**4. Disruption of Support Systems:** Tenured faculty often play key roles in creating and maintaining support programs or initiatives aimed at helping disproportionately impacted

students. Their departure can disrupt these systems, leaving students without the resources they rely on to succeed.

**7. Refer back to your Comprehensive Program Review under the section titled Assessment Cycle as well as the SLO website (<https://www.deanza.edu/slo/>) for instructional programs. In the table below provide a brief summary of one learning outcome, the method of assessment used to assess the outcome, a summary of the assessment results, a reflection on the assessment results, and strategies your area has or plans to implement to improve student success and equity. If your area has not undergone an assessment cycle, please do so before completing the table below.**

**Table 1. Reflection on Learning Outcomes (SLO, AUO, SSLO)**

Learning Outcome (SLO, AUO, SSLO)	One of the SLOs is for Biology 26, Introductory Microbiology is as follows: Evaluate and demonstrate the importance of aseptic techniques when working with microorganisms.
Method of Assessment of Learning Outcome (please elaborate)	Students were observed using aseptic techniques in the lab. A rubric was used to evaluate whether all the steps were done correctly. 5/6 points were considered meeting expectations.
Summary of Assessment Results	Number of Students who: Exceeding Expectations: 5 Meeting Expectations: 27 Approaching Expectations: 2 Do not meet outcome: 1 N/A (withdrew, absent, ...): 0
Reflection on Results	Most of the students performed aseptic methods satisfactorily. They understand the importance of aseptically transferring microbes and did 5 out of the 6 steps correctly.
Strategies Implemented or Plan to be Implemented (aka: enhancements)	The method was explained and demonstrated individually to the student who did not meet expectations.

Reference: [https://www.deanza.edu/slo/plo/BHES\\_PLOs\\_2024-25.pdf](https://www.deanza.edu/slo/plo/BHES_PLOs_2024-25.pdf)

Done? Please email this form to your dean/manager.

Dean Manager Comments:

The Biology Department transfers students majoring in Biology to a four-year college to complete their Biology degrees, provides prerequisite courses in support of De Anza's Nursing Program and other health care programs such as pharmacy, optometry, respiratory therapy, physician's assistant, veterinary medicine as well as provides

laboratory science general education courses for students majoring in other disciplines at De Anza College. The Department also offers a variety of nutrition and health courses that are designed to meet prerequisites as well as make students aware of ways to lead a healthy life and stay physically fit. The Biology Department has also established a contract with the Red Cross Chapter that provides American Red Cross First Aid certification for students.

In the upcoming cycle the biggest need of the department will be personnel as 2 faculty have indicated their intention to retire at the end of the 24-25 academic year after years of contribution in the classroom, to the department and college. We will see a serious deficit in our ability to continue our day-to-day operations and more importantly our ability to offer Anatomy and Physiology classes, a major prerequisite course and General Biology, one of the most popular laboratory science general education courses for students majoring in other disciplines at De Anza College. It is essential that these positions be considered for hiring.

In terms of resources, the division appreciates the supplemental IE and lottery funding. The B budget is inadequate to support the labs and having this supplemental funding source is essential to the work of the Biology department.