

## **External Review Report**

7<sup>th</sup> Cycle Program Review  
Department of Biology  
College of Science and Engineering  
San Francisco State University

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**1.0. Overview of the Program.** The Department of Biology at San Francisco State University is a large and complex program with approximately 1600 undergraduate students, 200 graduate students, 42 tenured/tenure-track faculty, 3 FERP faculty (faculty early retirement), 33 lecturers and 14 staff. The Department has a strong commitment to equity and inclusion, social justice, climate change studies and ensuring that students have the necessary skills and knowledge to enter the workforce. To ensure inclusive practices in the classroom, the Department has trained 85% of faculty in active learning strategies that have been shown to increase student learning and also have been effective in closing equity gaps. The Department also houses several nationally funded training grant programs that are providing historically underrepresented students with research experiences, particularly in the biomedical field. The Department has also worked to incorporate course-based research experiences to ensure that all students have the opportunity to participate in research experiences. To ensure positive and productive student experiences, the faculty have started developing ideas and strategies to improve the student advising experience. This includes the development of a required online advising course, better communication of the timing of course offerings, and better training for faculty advisors. The Department is also working toward ensuring greater inclusion for lecturers and staff in the Departmental decision-making processes. One of the ways in which the Department is addressing this is through the development of by-laws that define the processes for committee structure and decision-making. The Department has also made great efforts to promote data-driven decision making, using data from student exit surveys and alumni surveys to structure curricular changes in the Department. In recent years, the Department has also adopted the nationally-recognized core concepts and competencies from “Vision and Change in Undergraduate Life Science Education”. The Department has faced several challenges in recent years, including (1) changes to the University budgeting model that have severely impacted Biology, (2) a

slight decline in enrollment related to the Department entering impaction, (3) limitations on both lecture and laboratory teaching spaces, and (4) instability in staff support positions, both in terms of rehiring and new staff positions needed to support the teaching and research needs of the Department, and (5) pressure on the Department to deliver classes to pre-professional students such as those wanting to enter the nursing program.

## **2.0. Program Quality**

**2.1. Program Planning.** Since the last program review, the Biology Department has made a number of significant changes and improvements to the Departmental business practices and curricular matters. These include (1) stabilizing enrollment through declaring impaction, (2) improving teaching with the support of the HHMI-FEST Faculty Training Grant (to Kimberly Tanner) to incorporate Scientific Teaching in the classroom, (3) improved access to introductory Biology courses for Biology majors, (4) improving efficiency and progression of students through the BS degree program, (5) improvements to advising practices in the Department, including the development of a required online advising course and better publication of course offering information to improve student planning, (6) alignment of graduate programs with CSU-wide mandates (EO 1037), (7) implementation of an exit survey for graduating students, and (8) improving the business practices within the Biology department through implementation of policies that result in business items moving through Departmental committees prior to coming to the departmental level.

The Department has also faced several challenges in recent years. First, the Biology Department serves the campus through service course and General Education course offerings. The Department is particularly instrumental in offering courses that are required for students in the pre-nursing program. In recent years, the number of students admitted to the pre-nursing program has increased which has put added pressure

on the Biology department to offer courses in introductory biology, human anatomy and physiology and microbiology. While this results in challenges related to resource limitations (budget, space and staffing), the requests to add courses to accommodate students in these programs makes schedule planning and hiring of temporary faculty (often late in the registration process) incredibly challenging for the Departmental leadership. Furthermore, changes in the budgeting processes on campus and use of a Marginal Cost of Instruction model (without augmentations) has created an unpredictable and challenging environment. While the budget is also addressed in section 2.5 below, it is important to note that budgetary considerations are a key element of program planning. It is imperative that Departments are funded at a level where the indirect cost of instruction (i.e., technician time associated with laboratory course preparation as well as the cost supplies) are considered, and for departments to have the ability to predict course demand and expectations brought on by other programs earlier in the schedule building process.

**2.2. *Student Learning and Achievement.*** As a campus, San Francisco State University has been struggling to meet system wide enrollment targets in recent years. While Biology has seen some instability in enrollment numbers since declaring impaction, the enrollments in Biology and throughout the College of Science and Engineering have increased during this period. Because the campus has struggled with targets, there is a campus-wide effort to focus on student retention. In this arena, the Biology Department has been an outstanding campus partner and has modeled practices focused around reducing equity gaps and retaining students. The faculty in Biology show an exceptional commitment to high-impact practices in the sciences, including offering research experiences to all students, but in particular on increasing participation among under represented minorities (URM) students. The NIH funded SF BUILD grant (Building

Infrastructure Leading to Diversity Initiative), for example, is working to address structural racism that is at the core of the equity gap. This program has successfully addressed the barriers that lead to the loss of URM students, particularly in the sciences. Furthermore, the Department has a number of student training grants (such as NIH funded Maximizing Access to Research Careers (MARC) and Research Initiative for Scientific Enhancement (RISE) grants, the California Institute for Regenerative Medicine (CIRM) Bridges grant, computational training programs such as Promoting Inclusivity in Computing (PINC), GOLD (Graduate Opportunities to Learn Data Science) programs, funded by NSF, and privately funded graduate fellowships) that provide financial support for students. All of these programs target inclusion of historically underrepresented groups in the sciences. Furthermore, the Department shows a strong commitment to evidence-based decision making and teaching practices, including very broad participation among faculty in professional development programs around active learning (HHMI-FEST program).

*Undergraduate Programs:* The Biology degree programs at San Francisco State University maintain relatively high retention and graduation rates, with first year retention rates of nearly 80%, and 4<sup>th</sup> year retention rates around 65-70%. The six-year graduation rates for first-time freshmen are just over 40% for URM students and almost 50% for non-URM students. These have shown steady increases over time. Retention rates for first year transfer students are also high, with rates in the range of 85-90%, and 4-year retention rates in the same range. Four-year graduation rates for community college transfer students showed a decline from Fall 2010-Fall 2013, but appears to be rebounding since this time. The overall graduation rates for transfer students after four years remains high, with graduation rates of almost 80% for non-URM students and just over 70% for URM students. The Department has shown a strong commitment to

inclusive practices and providing equitable experiences to all students. As the department indicated in their self-study, they use a “talent development” rather than “talent selection” model. The equity programs and focus on inclusive teaching practices are indicative of their commitment to this ideal. The Biology Department managed to close the equity gap for graduation and retention rates among Biology students, and has shown an increase in science identity, particularly among URM students. Furthermore, the Department has shown exceptionally high rates of student participation in research experiences, which has been well documented as a high-impact practice in the sciences. The Department has made a commitment to the adoption of the nationally-recognized Vision and Change in Undergraduate Life Sciences Education document. This includes both knowledge and student competencies that were determined by national leaders in life science education (more on this in “Curriculum”).

While not strictly an issue just in the Biology program, the incidence of housing and food insecurity among San Francisco State University students is extremely high, with 18% of students homeless. From conversations with students, it seems that housing prices and often very long commutes from locations with affordable housing contribute to the high incidence of homelessness among students. Students also indicated that on-campus housing is often more expensive than housing options off-campus. Students have access to some support mechanisms such as an on-campus food pantry, but these kinds of insecurities will certainly contribute to student success in their classes, both in terms of mental health and the time spent on coursework. This may have a disproportionately large impact on Pell-eligible and first-generation college students.

*Graduate Programs:* The Biology Department has maintained a large and active Masters program with approximately 200 students. The Department maintains two graduate degree programs, one in Biology and one in Biomedical Sciences (Professional

Science Masters program). Nearly all of the 45 tenured/tenure-track faculty maintain active research programs involving graduate students. The strong emphasis that has historically been placed on graduate programs is a crucial factor in maintaining faculty research productivity at San Francisco State. This is also an important factor in being able to offer research experiences to undergraduate students as the graduate students are actively involved in supervising undergraduate research experiences. Graduate students in the Biomedical Sciences program typically graduate in two years as these programs have strong cohorts and involve internships through either UCSF or industry partners. Students in the Biology MS program typically take 4-6 years to complete their degree programs, and this is in large part because of the lack of funding for graduate students. While all students are eligible to apply for graduate teaching assistantships, these provide a fairly nominal salary for students (approx. \$900 gross per month). Given the cost of living in the San Francisco Bay area, students without financial or housing assistance cannot afford to live in the area on this kind of salary without working off campus. The University is piloting a fee waiver program for graduate teaching assistants that have participated in pedagogical training programs. This program has the potential to greatly increase graduation rates and engagement of graduate students in the campus community. We feel that this program has the potential to be transformational for Biology programs, and provide outstanding training for graduate students as well as making these students important partners in the undergraduate learning at San Francisco State University. Furthermore, the program may be better able to attract highly-qualified graduate students to their program with increased financial support. In addition to graduate teaching assistantships, students in biomedical disciplines have funding opportunities through some of the equity training programs such as MARC and RISE. Students in Ecology, Evolution and Conservation do not have as many opportunities for

graduate funding, but there are some off-campus opportunities working with local parks or land management agencies that may align with their ultimate career goals. This, however, would draw them away from campus and therefore contribute to increased time to graduation for this student population.

It is important to note that there is a growing perception among Biology faculty that the upper administration regards graduate programs as less important or “lower impact” than the undergraduate programs, and the faculty have a sense that graduate programs may be soon eliminated. While this is just a perception, it is important to note that the graduate program is essential for the research productivity in the Department. Reductions or eliminations in graduate offerings would likely have consequences in terms of success of faculty in securing external funding and being able to provide undergraduates with research opportunities.

**2.3. *The Curriculum: Undergraduate Studies.*** The Life Sciences include a huge diversity of study organisms and approaches. In most large research-intensive Universities, the life sciences make up an entire college with several departments subsumed under this umbrella. In most regional comprehensive universities, the life sciences are represented in one, large Biology department that includes a wide variety of sub-disciplines. Comprehensive Biology Departments must find a way to balance the needs of students and provide an education that ensures students are broadly trained in the life sciences. In 2011, the American Association for the Advancement of Sciences released “Vision and Change in Undergraduate Life Science Education” which provided a call to action for undergraduate life science educators. This document included a series of interdisciplinary learning outcomes that included both knowledge-based and skills-based needs for the workforce. Since the release of this report, there have been several national efforts to implement the recommendations set forth in this document. The

Biology Department at San Francisco State University has been a leader in their implementation of high-impact practices such as offering research experiences and inclusive pedagogies. Since their last program review, the Department has also adopted the learning outcomes from the “Vision and Change” report. This is a clear indication of the Department’s commitment to being at the forefront of Biology education.

The Biology Department has been incredibly proactive in revising the undergraduate curriculum in an attempt to create more efficient pathways for students to graduation. The Department recently approved a program change to reduce the total number of units required for the Biology major, and will submit these for University approval in the spring. These changes were achieved in part by reducing the number of lower division units in science and math courses outside Biology (i.e., Math, Physics and Chemistry). These changes may also create more opportunities for students to put more focus on taking courses that may impact their ultimate career goals.

The Department has done an outstanding job collecting assessment data from exit surveys prior to graduation, and we commend the Department for their commitment to surveying students and adapting their programs related to student needs. Furthermore, we commend the Department for having broad faculty participation in collection and analysis of survey data, as this (1) plays to the strengths and skillsets of the faculty, and (2) broadens faculty participation in addressing outcomes. Moving forward, we recommend that the Biology Department use the upcoming curricular changes as an opportunity to study the impacts of these changes and ensure that students who enter the program under the new requirements are equally prepared for careers at graduation. A first step toward this would be to create a curriculum map and ensure that students are meeting all of the program learning outcomes that have been adopted by the Department. This will require a comprehensive review and assessment of all required courses in the

Biology program(s) to ensure that outcomes are effectively introduced and developed throughout the curriculum. This may also require subsequent changes to course content to address unmet needs that are discovered through this process. Related to this, we recommend that the Department review the assessment strategies to address student learning. While the Department has collected extensive survey data from students, there is potential to collect more data related to student learning. We caution the Department to make sure that the approaches they develop are sustainable in the long term. If possible, embedding learning outcome assessment within course assessments and collecting assessment data on just one or two learning outcomes per year will ensure that this becomes a sustainable process.

Another key element of undergraduate student success is effective academic advising practices. Currently, students are advised by faculty advisors, but with the student:faculty ratio of over 35:1, the department's ability to mandate advising is limited. As a result, not all students are receiving advising on a regular basis and therefore may extend their time to graduation. One way in which the Department is addressing this is through the development of an online advising course that will be required of all students. The Department is currently developing course content for this venture, with plans of implementation in the next academic year. We commend the Department for providing more comprehensive and consistent advising information to students. The implementation of this course may also be helpful for faculty advisors in providing them with standardized information that all students have received prior to their first advising appointment. We also commend Dr. Burrus for implementation of mini advising workshops into department meetings to address advising misconceptions as they arise. Another opportunity available to Biology and the College is further development of the College Success Center. From conversations with the Chair and the

Dean, it seems that the college success center is still in its infancy. We recommend continued discussions among chairs in the College and the Dean to define a clear vision that will support the diverse student needs within the College of Science and Engineering.

*Graduate Studies:* In recent years, the graduate program has been revised to bring the program into compliance with the Chancellor's office Executive Order 1071. These changes have ensured that at least 50% of the curriculum is the same across all degree programs in Biology. This was done in part by introducing a class that addresses research skills and is required of all graduate students in the program. In addition, the Department has consolidated some of the smaller graduate programs in a manner that (1) addresses the interdisciplinary approaches to biological programs and (2) ensures efficient pathways to graduation for students through efficient and relevant course offerings. The graduate studies committee has also developed program learning outcomes for the MS in Biology, and developed a curriculum map for all of the required courses within the program. We commend the Department for the work they have done to develop graduate learning outcomes. We encourage the Department to consider ways in which they can systematically assess these learning outcomes at the graduate level (such as evaluating culminating experiences) to ensure that the learning outcomes are being met.

2.4.**Faculty:** The Department currently includes 45 permanent faculty (tenured and tenure-track) and 33 temporary faculty (13.5 FTEF). All of the permanent faculty maintain active research programs with graduate and undergraduate student involvement. The typical teaching load for incoming faculty is 6 Weighted Teaching Units (WTU) per semester for the first three years, 6/9 WTU for years 3-5 and 9 WTU per semester thereafter. The teaching load reduction for pre-tenure faculty (below 9 WTU per

semester) is provided by the College of Science and Engineering and is funded largely through recovered indirect costs. Furthermore, faculty are eligible to receive up to 3 WTU of student supervisory credit per semester. Permanent faculty are offered competitive start-up packages for a CSU campus, typically around \$180,000 for wet laboratory research, and around \$55,000 for faculty with dry research laboratories. Faculty seem generally satisfied with the clarity of expectations for tenure and promotion, and feel strong support from the Department and College. The faculty are incredibly committed to serving the diverse student population at San Francisco State University. Most Biology faculty (85%) have participated in professional development through the Biology FEST: Faculty Empowering Students in Transformations program funded through an HHMI Inclusive Excellence Award. This program has resulted in a transformation in departmental culture to incorporate inclusive teaching practices. The participation in this program is indicative of the faculty commitment to excellence in teaching and supporting the diverse student population at San Francisco State University.

Faculty in Biology have been extremely successful in maintaining active research programs, with most faculty successfully competing for grant and contract money. Furthermore, faculty all work with students and maintain active publication records. The University provides bridge funding (approx. \$15,000 for one year) for faculty who are between grants, and some support is available for faculty from system-wide programs including CSUPERB (CSU Program for Education and Research in Biotechnology) and COAST (CSU Council on Ocean Affairs, Science and Technology). The continued research efforts and successes among Biology faculty is in no small part related to the support provided by the Department, College and University to balance the teaching and research responsibilities at a primarily undergraduate institution.

The Faculty at San Francisco State come from diverse backgrounds. The Department has indicated that they have worked toward hiring faculty from historically underrepresented groups in recent years. Students expressed that having more faculty of color would make them feel more valued in the Department. While the proportion of faculty from historically underrepresented groups does not match the student population, the Department has done an outstanding job in developing inclusive hiring practices to maximize the diversity of candidate pools.

The Department expressed some concerns over the cost of living in the San Francisco Bay area. The cost of living makes it difficult for faculty to afford housing if they are living on a single income. This has the potential to seriously limit the pool of faculty who are able to accept positions at San Francisco State University. Furthermore, faculty indicated that attracting qualified graduate students to work in their research labs was nearly impossible if the student didn't have family living in the bay area because of the cost of living and lack of financial support for graduate students. Faculty also expressed that they feel there is a mixed message coming from the University administration around the value of research and graduate programs. During the site visit, the Department indicated that there was some concern from University Administration over the limited contact hours for faculty teaching in Biology, particularly for faculty teaching in lower-division majors courses (i.e., 2 faculty at 6 WTU each for a class of 300+ students). Furthermore, several faculty indicated that they felt that the graduate programs were being given less attention and value by the University in recent years, with all of the University focus toward undergraduate graduation rates. We do understand that increasing undergraduate graduation rates is a legislative mandate and a key function of the CSU system, but in a program with experiential learning such as Biology, graduate programs are a key part of the undergraduate experience. Faculty also

expressed some frustration over grant submission and administration support, indicating that the ORSP staff may not clearly understand the needs of faculty, and are focused primarily on factors that will maximize the indirect funds brought to the University.

**2.5. Resources. Facilities:** The Biology Department occupies space in Hensill Hall, which includes mixed-use space including classrooms, teaching laboratories, research laboratories, core facilities and faculty/staff office space. In addition, the Biology Department has four faculty with their primary office and research laboratory space at the Estuary and Ocean Science Center (EOS) in Tiburon. While research space seems generally to be sufficient for faculty, both space for teaching laboratories and support space for laboratory preparation have become limiting factors for the Department in offering additional sections of bottleneck courses. One way in which the department has mitigated these limitations is by (1) offering classes into the evening hours and (2) reducing the amount of time spent for each laboratory section, thereby allowing them to offer more labs in the existing time blocks in some of the bottleneck courses. In conversations with the Department Chair, the Department has also considered offering weekend classes, but the Department does not currently have the support staff to allow this as an option. The Department has also identified potential spaces that could be converted to teaching laboratories, but there is currently no budget for the renovation necessary for these conversions. In addition, the Department has expressed some concerns over available lecture spaces on campus, particularly classroom spaces that are conducive to inclusive pedagogies for large numbers of students. The Department currently teaches most of their large introductory biology courses in auditorium spaces. While the Department has done their best to make these facilities work, these spaces do not provide environments that are conducive to inclusive pedagogical methods. As the College and University begin the process of planning their new science building, we

recommend considering incorporation of a large-capacity, flexible learning space that would provide the University with the capacity to offer greater numbers of large lectures that also incorporate inclusive teaching practices. Beyond teaching spaces, there are several support facilities, including the relatively new greenhouse facility, the seawater facility, and the EOS facilities that are suffering from deferred maintenance and inconsistent staffing issues, that exacerbate the deferred maintenance. While the staffing issue has been resolved for the greenhouse facilities, the Department has experienced several issues related to staff hiring that are impacting their ability to maintain facilities sufficiently for classes. In addition, the basic maintenance (i.e., trash removal, cleaning, and paper towels) in Biology facilities in Hensill Hall has fallen largely on the Department. This has resulted in pest problems in the building. Furthermore, numerous security concerns in the building were expressed by faculty, staff and students.

*Budget:* In recent years, there have been some adjustments to the budgeting model used by the University. With the shift toward a budgeting model that funds the Minimum Cost of Instruction, the College of Science and Engineering has seen disproportionate decreases in their funding stream relative to what they had received in the past. Because of the cost of equipment, supplies and support staff needed in science and engineering, these changes have had a dramatic impact on the functioning within the College and in the Biology Department. The University has responded by providing one-time funding to the Department to help offset the cost of supplies needed in Biology, particularly for high-demand service classes. What this doesn't consider is the staff time needed to prepare for these classes, and the budget reductions that have impacted graduate assistants that have previously helped with grading and in-class support within large lower-division classes. Furthermore, the opacity of the budgeting process at the University level has made it very difficult for the College and the Department to

understand how much money is actually being allocated. To compound this, the College and Department indicated that the delivery of their allocations of indirect funds from grants is now coming into accounts that make it incredibly difficult to distinguish from the operating expense allocations coming from the University, resulting in these funds being used for class-related expenses rather than reinvestment in research-related or faculty development funds as they had previously been used. While we are sympathetic to the budget issues faced by public institutions, the lack of clarity in the budgeting process seems to be resulting in friction at all levels. The Department Chair has started to document the indirect costs associated with instruction (i.e., supply budgets, Graduate Assistant/Student Assistant support, equipment repair, service contracts, etc.) necessary for each course. This shows the Department's commitment to using their financial resources in a prudent manner. We feel that this is a critical step in understanding the true cost of instruction in science departments and colleges. We feel that a collaborative conversation with the Biology Chair, Dean, Provost and the AVP of Academic Resources to address the budget shortfalls would be an important step in understanding the budgeting process. Beyond the cost of instruction, the space available for teaching laboratories has become a limiting factor in offering additional sections of laboratory classes. The Biology Department has identified some spaces that could be renovated to provide greater student access to courses. Providing funding for renovations would be a way to provide greater access to courses required by the broader University community.

*Staffing:* One of the most crucial needs in Biology is to stabilize the support staff in the Department. In recent years, the Department has seen a number of staff turnover events, with often lengthy delays in replacement for these staff positions. This was true for the greenhouse IST position and continues to be an issue for the seawater facility technician. In many instances, staff hires have been emergency hires with short-term

appointments, often without renewal. This results in a significant time investment in retraining emergency hires and a lack of continuity in management of these facilities. This instability in staff positions is likely related to University level budgeting changes, but this has resulted in significant time investments in training staff positions with rapid turnover. The uncertainty over staff hiring creates a great deal of strain on academic departments.

*Other campus resources:* Beyond facilities, budget and staffing, the Department expressed that students needed to fill out paperwork to finalize course equivalencies and substitutions, even in cases where students transfer from institutions with articulation agreements with San Francisco State University. This is a process that is cumbersome and could be streamlined at the University level and we recommend that the Registrar's office review their processes to reduce the duplication of work that is taking place.

**2.6. *The program's Conclusions, Plans and Goals:*** Since the last full program review cycle, the Biology Department has made major changes to the curriculum, pedagogical practices, departmental governance and establishment of strategic priorities. Through these priorities, the Department shows a clear commitment to student success and equity in student training. The department has begun the process of developing strategies to ensure a strong curriculum, equitable practices both in the classroom and in departmental decision-making processes. Overall, the Biology department has done an outstanding job in carrying out their educational mission and ensuring the success of their faculty and students. We commend the Biology faculty for their effort at obtaining national grants such as the NIH BUILD, MARC and RISE grants. We also commend the leadership team in the Department for their efforts in carrying out these strategic goals.

### **3.0. Commendations of Strengths and Weaknesses**

- 3.1. We commend the Department chair for her leadership in developing and understanding the budgeting process and Departmental expenditures in Biology.
- 3.2. We commend the Department chair for her role in developing inclusive practices in departmental meetings and practices.
- 3.3. We commend the Department leadership for the development of clear strategic goals for the Department.
- 3.4. We commend the Department for the work that they have done collectively in the revision of the majors introductory biology courses, both in terms of incorporation of inclusive pedagogical techniques and in meeting the demand for increased capacity in this course.
- 3.5. We commend the Department's efforts to develop an online advising course, and education of faculty advisors, to meet the needs students in Biology.
- 3.6. We commend the Department's work in development of an effective committee structure to ensure informed and clear decision making.
- 3.7. We commend the Department leadership for making a strategic investment in faculty time for courses implementing high-impact practices with their most vulnerable student populations (i.e., introductory biology for science majors).
- 3.8. We commend the faculty for their participation in professional development aimed at incorporation of evidence-based practices in teaching and inclusive pedagogical techniques.
- 3.9. We commend the Biology Department for working to create more efficient pathways toward graduation for their students.
- 3.10. We commend the Faculty for working with other campus entities to ensure earlier and more rapid progression of students in the Biology major.

- 3.11. We commend the Faculty for their efforts to engage students in both graduate and undergraduate research.
- 3.12. We commend the Faculty for their research productivity and participation in training grants.
- 3.13. We commend the effort of the Departmental support staff in their efforts to support the expansion of courses in Biology, with limited additional staffing resources and declines in student support provided by the University.
- 3.14. We commend the faculty for their efforts and success at obtaining nationally funded grants to support the educational mission of the department.

#### **4.0. Recommendations and Strategies for Program Improvement**

- 4.1. We recommend that the existing equity programs that are associated with Biology (and the College) clarify their relationships to better articulate overlap between programs and prevent the development of “silos”.
- 4.2. We support the Department’s effort to work toward development of Departmental by-laws to clarify working relationships within the existing governance structure.
- 4.3. We recommend that the Department consider mechanisms to ensure that faculty advisors receive training in empathy and mechanisms to ensure that students are aware of research and training opportunities.
- 4.4. We recommend that the Department and College work together to expand the current student success center through the development of strategic priorities for the center.
- 4.5. We recommend that the Department and College work together to develop gathering spaces for students, faculty and staff to develop community.

- 4.6. We recommend that the Department work with the graduate students to revitalize the graduate student association in order to develop community among the graduate students.
- 4.7. We recommend that the Undergraduate studies division work toward development of a curriculum map for undergraduate programs to understand the role that each course in the curriculum plays in addressing program learning outcomes.
- 4.8. We recommend that, upon completion of a curriculum map, Undergraduate Studies works toward the develop a sustainable assessment plan that addresses each of the core concepts and competencies from Vision and Change that have been adopted by the the Department.
- 4.9. We recommend that the Department, College and University consider the facilities, resource allocations and maintenance costs associated with the Estuary and Ocean Science Center in Tiburon in order to develop a sustainable program that uses these spaces.
- 4.10. We recommend that the College and University Consider funding an accountant/analyst in Biology that can track and maintain budgets, and also help support faculty with travel and other expenditures related to their research laboratories.
- 4.11. We recommend that the Department, College and University work together in the design of the new science building to develop teaching spaces that allow for inclusive pedagogical techniques on a large scale (i.e., 300+ students).
- 4.12. We recommend that the University review the processes used for course equivalencies, substitutions and exceptions to prevent unnecessary paperwork for faculty and department chairs.
- 4.13. We recommend that the University consider financial support for faculty for housing given the high cost of living in the San Francisco Bay area.

- 4.14. We recommend that the University provide funding for laboratory renovations that will increase the capacity for course offerings in bottleneck courses (i.e., first floor lab space that has been identified in Hensill Hall)
- 4.15. We recommend that the University incorporate the indirect costs of instruction (i.e., supplies, graduate assistants and technical staff positions) into the University budgeting model.
- 4.16. We recommend that the University continues to fund fee waivers for graduate teaching assistants on an ongoing basis to bring quality graduate students to San Francisco State and which will likely reduce the time to degree for graduate students.
- 4.17. We recommend that the University, College and Department work together to stabilize support staff within Biology, preferably with permanent positions (i.e., seawater position and greenhouse position). We also recommend that through these conversations, a clear and consistent mechanism be used to hire replacement positions, with interim support provided when positions become vacant.
- 4.18. We recommend that the University review the security concerns expressed by students, faculty and staff in Hensill Hall, particularly those around theft and potentially people living within the building.
- 4.19. We recommend that the University Facilities Management team address basic custodial service and deferred maintenance issues in Hensill Hall to ensure that facilities are clean and safe.
- 4.20. We recommend a collaborative meeting with the Provost, Dean of College of Science and Engineering, Chair of the Department of Biology , and the Associate Vice Provost of Academic Resources to figure out the discrepancy in understanding of the allocation of augmentation funds in the College's budget.

