Fullerton College Program Review and Planning
Self-Study for Instructional Programs
Fall 2021

Statement of collaboration

The program faculty members listed below collaborated in an open and forthright dialogue to prepare this Self Study. Statements included herein accurately reflect the conclusions and opinions by consensus of the program faculty involved in the comprehensive self-study.

Participants in the self-study

Bradley Dawson, Ph.D.
Michael Baker, MS
Kaitlin Kroupa, MS
Jacob Sapiro, Ph.D.

Authorization

After the document is complete, it must be signed by the Principal Author, the Department Coordinator, and the Dean prior to submission to the Program Review and Planning Committee.

Jacob Sapiro	Jacob Sapiro	Nov. 11, 2021
Author	Signature	Date
Bradley Dawson	Bradley Dawson	Nov. 11, 2021
Author	Signature	Date
Michael Baker	Micheal Baker	Nov. 11, 2021
Author	Signature	Date
Kaitlin Kroupa	Kaitlin Kroupa	Nov. 11, 2021
Author	Signature	Date
Jacob Sapiro	Jacob Sapiro	Nov. 11, 2021
Printed name of department coordinator	Signature	Date
Bridget Salzameda	Bridget Salzameda	Dec. 14, 2021
Printed name of Dean	Signature	Date

A Note on terminology

"Program review" is the blanket term for all parts of this process. This document is a comprehensive "self-study." Fullerton College defines "program" as a course of study leading to a degree or certificate. A department may contain more than one program. With consultation with the Program Review and Planning Committee, a department may decide to write a separate self-study for each program within its department.

1.0 Executive Summary (Please write this section last, but include it here at the front of the self-study, on a page all by itself.)

The College vision is that Fullerton College will transform lives and inspire positive change in the world. The Health Sciences Department, in the Natural Sciences Division, transforms lives as evidenced by our transfer data. Career opportunities for health science graduates continue to be very strong, and are often recession-proof. Our Health Sciences Department offerings serve as the primary gateway to health professional schools and as a means of upward mobility to traditionally disadvantaged populations. While our data support the notion that we are doing a good job in preparing students, we feel that we could do better in terms of student success and equity. Our success rates, especially in our introductory class, are lower than we would like them to be. We are in the process of implementing a number of changes which we hope will increase success rates while still maintaining an appropriate level of academic rigor and integrity. The most egregious issue that confronts our students is the lack of course offerings. Demand for our classes far exceeds our capacity. This has been an on-going issue for many years, but has not been something the Administration has deemed worthy of addressing. We are hoping that the construction of a new STEM Vocational Building will allow us to offer enough sections to meet demand and reduce the number of disenfranchised students. Likewise, the lack of a STEM Resource Center (which has been discussed for many years but has yet to be implemented) inhibits our ability to offer supplemental instruction, tutoring, providing peer interactions, etc.

2.0 Mission

Please explain briefly how your program contributes to the College's mission, vision, core values, and goals. Highlight any new contributions since your most recent self-study. If your department has a mission statement, please share it. If not then please consider discussing one with your colleagues.

Mission Statement: The Health Sciences Department focuses on preparing our diverse student population to enter a variety of health professions (nursing, pharmacy, physical therapy, etc.).

As sequelae to this mission, the Department goals are as follows:

1. Foster an environment which encourages and advances student learning and achievement including career growth and transfer. (College Mission)
2. Encourage excellence and growth on the part of the faculty and students so that everyone can achieve their full potential by promoting critical thinking, innovation and leadership skills. (Core Values)
3. Value the diversity of our faculty and students and utilize that diversity to motivate students and enhance their understanding of health care. (Core Values)
4. Recognize the responsibility of our faculty and students to their communities, (Core Values)
5. Use the knowledge and skills students have attained to transform their own lives and those in their community. (College Vision)

3.0 Students

Because there is a nearly infinite amount of student data that can be studied, please focus your analysis on the trends that stand out. The Office of Institutional Effectiveness (OIE) is providing data that will help you zero in on bottlenecks, gateways, and student equity issues. As per accreditation standards, OIE data will be broken down by race, ethnicity, gender, and other demographic categories. One of the purposes of this section is to identify inequities and make plans to remedy them.

3.1 Enrollment demographics

1. Using the data provided by the OIE, briefly describe the enrollment trends in the program over the past five years.

Every section we offer fills almost immediately including the waitlist. The demand for the courses in our program continues unabated. Because Dr. Blaschke retired, the number of sections offered has been reduced. Judging by the neighboring Districts, there is a huge unmet demand for courses in our program. Seat count and unduplicated head count have been flat because we have been limited in the number of faculty in the Department, so we have been unable to increase the number of sections we can offer.

2. Using the data provided by the OIE, describe the student population the department serves. Do you have a way of determining which students are majors, for example through a gateway course? Please explain.

Almost every student enrolled in our program is planning on entering an allied health career, e.g. Nursing, Physician Assistant, etc. The data show that 75% of students are degree transfer, but that is an

underestimate since we have almost no students that are taking our courses for Gen Ed credit. The number of majors as determined by the OIE are not appropriate for our program.

Our students tend to be older than the general student population (only 11% are younger than 20 years old.) Unsurprisingly, we have double the percentage of post-baccalaureate students compared with the campus (15% vs.7%) and it would be an even higher percentage if the classes were not as impacted.

In other demographic categories, (DSS, foster youth, LGBTQ+, low income, veteran, ethnicity) we are not significantly different from the college population. We have a higher proportion of Filipino and female students.

3. Which classes have the highest demand and why? Are they offered regularly -- at different times of the day and week, in different formats (in-person, on-line, hybrid)? Please explain.

All of our classes have extremely high demand. We offer classes both during the day and at night and they all fill including waitlists. Our departmental offerings are among the earliest to fill during registration. Because all our courses have a laboratory component, online options are not viable.

4. Please describe how course offerings match students' preparation and goals.

Our student pathway is set by transfer institutions and professional schools. The programs to which our students intend to apply require these courses and that these courses be taken in the correct sequence.

ANAT 231F is a bottleneck course because we cannot offer enough sections to meet student demand due to limited faculty and lab space. A new faculty hire would help alleviate some of this bottleneck. We are also looking forward to the construction of a new vocational STEM building which is scheduled for completion in 2025/2026. The added laboratories in the building, along with additional faculty, would help alleviate out bottlenecks.

5. Does enrollment vary by semester? Please describe how course offerings are adjusted to meet student demand and help students reach their academic goals.

We offer the maximum number of sections we can both Fall and Spring semesters and therefore there is no significant variation between semesters, even with a number of the faculty teaching overload.

3.2 Student Achievement and Equity (and student demographic profile)?

1. Using the data provided by the OIE, briefly describe student achievement rates in your program over the past five years: completion, success, degrees/certificates, transfer, licensing, job placement, wage improvements (not all of these measures apply to every program).

Ignoring success rates during COVID times because there are too many factors beyond the control of our department and the students, our success rates have been relatively steady for the last 5 years.

Our completion and success numbers are significantly lower than the campus average because we do not offer Gen. Ed. classes. All of our classes are rigorous science courses with success rates in line with other similar programs (60% pass rate according to Human Anatomy and Physiology Society representing all Anatomy and Physiology courses including those at prestigious 4 year institutions). Also, our pass rates are similar to comparable community colleges (e.g. Irvine Valley College, Long Beach City College, etc.)

ANAT 231F has the lowest completion and success rates, as expected, since it is the entry-level course for our programs. Even though these these numbers are similar to those of other institutions, we feel we can do better. We have been working diligently to try to raise our completion and success rates (see Strategic Action Plan, Section 6.2). Our success and completion rates for subsequent courses in the series are considerably higher as expected.

216 degrees have been awarded in the Health Science Department in the last 5 years. The number of degrees awarded each year is increasing significantly from 24 awarded in academic year 2016/2017 to 69 awarded in academic years 2020/2021. Most of these 216 awarded degrees were in our Pre-Nursing A.S.

As expected, most of our 696 transfer students (374) enter professional programs at non-CSU schools. 283 transfer to CSU and 39 transfer to UC. In addition, an unknown number of students transfer to out-of-state schools, so they may not be refected in these statistics.

Students who complete Allied Professional Health Programs are in extremely high demand with comparably high salaries. According to the US Bureau of Labor Statistics the mean wage for nurses in Southern California is $113,120/year.

2. Please pay special attention to equity issues -- where a group of students has an achievement rate that is below average. What factors can explain this?

Our success rates seem to show a significant achievement gap for Latinx and Low-Income students. There are also success gaps in smaller population groups including Black/African American, DSS, Foster Youth, and LGBTQ students.

A significant proportion of our students attempt to take our courses out of sequence or attempt to many units per semester. This leads to either withdraw or fail the course. We hope the institution of Guided Pathways will alleviate some of this disparity.

Many of our Latinx and Low-Income students are first generation college students and therefore struggle to navigate the college experience. In addition, we have a high proportion of older students, many of whom have responsibilities outside of the classroom (family, work, etc.) which can interfere with college success. These students are often forced to withdraw from a class, but many of them return in subsequent semesters and are successful.

3. Does the department have regular discussions about equitable grading, attendance, late-work, and extra credit policies, or about other strategies for helping students succeed? Could reforming classroom policies help more students succeed? Please explain.

Our department meets on a weekly basis to discuss curriculum, student success, equity, and current trends in education and in our field.

During COVID times we became much more flexible in terms of assignment deadlines, attendance, make-up exams, etc. We plan to continue these policies in hopes that they will increase completion and success rates and improve student equity in the future. We also plan to incorporate alternate methods of evaluation. We have worked hard to accommodate students who have issues outside the classroom which may interfere with their studies.

4. Please write a brief Equity Action Plan. What strategies can you implement to close this gap in student achievement within the next five years? What professional learning, curriculum development, or other forms of support does your department need?

The student achievment gap is caused by a variety of factors, so we propose to address the issue by approaching the problem from many angles:

a. Implement and fund a STEM Resource Center which would increase student access to faculty, tutors, peers, student career clubs, and research opportunities.
b. Research Open Education Resources appropriate for our classes which would alleviate monetary issues for students.
c. Attend national meetings which focus on student equity.
d. Take part in campus-wide discussions of student equity including anti-racism task forces.
e. Assess our syllabi to remove any impediments to completion and success.
f. Provide supplemental instruction including additional proctored lab hours and expand use of embedded tutors through Hornets Tutoring.
g. Continue to offer a full night program of classes for our working students, many of whom are older students returning to college to switch careers.
h. During COVID times we became much more flexible in terms of assignment deadlines, attendance, make-up exams, etc. We plan to continue these policies in hopes that they will increase completion and success rates and improve student equity in the future. We also plan to incorporate alternate methods of evaluation. We have worked hard to accommodate students who have issues outside the classroom which may interfere with their studies.
i. Work with Student Services (Counseling, DSS, etc.) to address student needs.
j. Survey students at the start of the semester in order to identify and address potential barriers to student success in order to allow for early intervention.
k. Support student clubs, such as the pre-nursing club which allow for peer interactions.

.

3.3 Student Achievement and Pathways

1. Using the data provided by the OIE, briefly describe how students have moved through the program over the past five years: unit accumulation, prerequisites, corequisites, substitutions, gateway courses, and bottleneck courses. (Not all of these measures apply to every program.)

The main bottleneck is ANAT 231F, the prerequisite for other courses in our program. We are not able to offer anywhere near the number of courses needed to meet the student demand due to a lack of faculty and laboratory space. Our success numbers show that our courses should not be taken concurrently and need to be taken in the correct sequence. Upon successful completion of ANAT 231, success rates in subsequent courses are quite high.

2. For transfer degree programs: Are your current requirements in line with the Transfer Model Curriculum, or have you added extra steps, such as prerequisites? If you added extra steps, please explain.

   N/A

3. Please provide an update on the curriculum mapping you have done, perhaps in collaboration with Counseling. Are all programs (degrees and certificates) mapped? Based on course offerings for the last two to three years, could a student complete the map(s) you have created? If so, please demonstrate this with some facts from your schedules. If not, how will you address these discrepancies?

We developed 4 and 5 semester Guided Pathways for our Pre-Nursing Program. We hope that, when implemented, this will increase success rates as it will alleviate many of the issues discussed above such as the need to take the classes in the correct sequence. Each course in the pathway is offered every semester with some offered in the Summer. Students should be able to complete the Pre-Nursing A.S. in the suggested time frame. We placed our course flow-chart into the Class Schedule, which includes the sequence of courses reflected in our Guided Pathway. In addition, we will begin working on a Guided Pathway for the Microbiology A.S.

4. Do the data reveal differences among your AA, ADT, or certificate programs (in enrollment, completion, or success, for example)? Please explain.

   N/A

3.4 Faculty

1. Using the data provided by the OIE, briefly describe the faculty workload over the past five years: FTF (full-time faculty), PTF (part-time, or "adjunct" faculty), FTEF (full-time equivalent faculty), WSCH per FTEF (weekly student contact hours). (Not all of these measures apply to every program.)

We currently have 4 FT faculty and no adjunct faculty. Several faculty teach maximum overload, but we are still unable to meet student demand for our courses. Our WSCH per FTEF is about 565, which shows we are extremely efficient. During COVID times our WSCH per FTEF dropped because were forced to teach smaller sections to accommodate social distancing in our on-campus laboratories.

2. If your department plans to request hiring a full-time faculty member, this is the place to make the argument. Please discuss hiring needs in reference to data analyzed in sections 3.1 to 3.4.

As noted in our previous Program Review document (2017), a retirement was anticipated to occur within the next three year cycle. In fact, Dr. Lillian Blaschke did retire, but she continued to teach for us part time. She is now fully retired and we anticipate another retirement in our department within the next 2 years. In fall 2018, the Health Sciences department (formerly the APM department) offered a total of 16 sections. In fall 2020, we are down to 13 sections, and this Fall we are only able to offer 10 sections because one faculty member is on load bank leave. However, the need for Health Science courses continues unabated. If anything, demand is even higher now because of the effects of COVID-19 on the job market for health professionals.

ANAT 231F, ANAT 240F, and MICR 262F are required courses for a number of programs. Nearly every health-science related professional school (nursing, physical therapy, physician assistant, pharmacy) necessitates successful completion of these courses as a requirement for admission. In addition, several other programs also require completion of two or more of these classes (Pre-Nursing AA, Kinesiology AAT, and Medical Technology AA.) As such, our courses are among the first in the college to fill during registration, and demand for classes in the Health Science Department is always extremely high. We have wait-lists of up to 12 students per section, and every spot on the wait lists for ANAT 231 and MICR 262 is taken within days of the start of registration. In addition, we get inundated with emails from students trying to add the classes after they are closed. Based on our waitlists we could easily add enough sections to justify hiring at least two new faculty members.

Unfortunately the requirement for specialized lab space limits the number of sections we can offer each semester, so we are requesting only one new growth faculty position at this time. Offering fewer sections has disenfranchised a large number of students. Our WSCH per FTEF ratio has always been very high (565 in 2019-2020), demonstrating that a new Health Science hire would be a very efficient use of faculty allocation.

The philosophy of the Health Sciences department is to avoid the use of adjunct faculty to teach majors' level courses. This allows us to control the rigor of the instruction, and ensures that successful students can progress into, and likely succeed in, subsequent courses ANAT 240 and MICR 262, and eventually transfer and/or be accepted into a professional program (nursing school, PA school, pharmacy school, etc.). We have established a very solid reputation among health profession programs, many of which are extremely competitive, and our students are accepted into those programs at a consistently high rate. In fact, our placement rate into professional programs of the students who pass our program is incredibly high (almost 100% as evidenced by our Program Review data on transfers). There are almost no qualified adjuncts available to teach these highly specialized courses. Because of the huge state-wide demand for these classes, anyone who is reasonably qualified is almost immediately hired as a full-time instructor.

Recently, the Faculty Allocation Committee and the deans ranked our Department #1 for a new full-time faculty hire in spring 2022 and we look forward to hiring someone to fill that position. We would also like to request an additional faculty member to be hired in 2022/2023. As the College is losing enrollment, this growth position could help reduce the decline.

3.5 Covid-19

Using the data provided by the OIE, briefly describe how the Covid-19 pandemic affected your department and how your department has adjusted. Did you make temporary changes? Or have you adopted new, long-lasting practices that enhance teaching?

Starting Summer 2020 we were able to offer in-person classes but were forced to reduce the class size to accommodate social distancing. Safety measures were implemented to ensure student and faculty safety such as PPE, disinfectant surfaces, etc. We also worked with our lab technicians, custodial staff, administrators, and Health Services on these efforts to ensure safety of our students and staff.

All faculty took part in Title-V online training; one faculty member took training for the Online Teaching Certificate, NIST (specific for teaching Science), and Science Accessibility in Canvas courses. We then worked together to develop new instructional strategies that incorporated Canvas, Zoom, and online other formats. We are continuing to use some of those new practices as part of our "New Normal."

We realized early in the pandemic that student learning was significantly adversely impacted in the online format due to the lack of a hands-on laboratory component. Our program developed the safety protocols that allowed other programs to return to campus safely.

Another factor that negatively affected our students was the lack of any on-campus student services (DSS, library, health services, etc.). Students were constantly reporting problems due to the unavailability of student services, even though many of these services are mandated by the State. We suspect that many withdrew from classes because of this issue.

3.6 What has not been asked?

Please tell us about other ways your department has been successful, ways that the previous questions might have missed.

The students that successfully complete our program have a very high success rate in being accepted into a variety of Allied Health professional programs. We receive feedback from some of our successful students that our program significantly increased their level of preparedness and success in professional programs.

4.0 Outcomes

4.1 Program Student Learning Outcomes (PSLOs)

Since the last self-studies, the College adopted new Institutional Student Learning Outcomes (ISLOs) and new design principles for PSLOs. Please describe your department's PSLO revisions to date, and your PSLO plans.

The department has begun the Guided Pathway process and PSLO redesign for the Pre-Nursing AS degree program, a top 50 program at Fullerton College. We hope to have PSLO redesign completed by the end of Fall 2021 and hope the Guided Pathway will be in place for Spring 2022. We will proceed with the Guided Pathway and PSLO Redesign for the Microbiology AS during the Spring 2022 semester.

The Pre-Nursing AS PSLOs (pending approval):

> PSLO 1: Design, execute, analyze, and communicate the results and conclusions of a lab project that uses scientific methodology in order to explore topics in physiology and microbiology.
>
> PSLO 2: Identify and evaluate the skills and knowledge you have acquired in your prerequisite courses in order to prepare you for a successful career in nursing.

4.2 PSLO Assessment

The new PSLO design principles encourage departments to use PSLOs as a way of gauging student learning once they have completed a degree or certificate, not just when they have completed a single course. Please describe how PSLOs are assessed or will be assessed in your department.

We have identified possible assessment methods for each of the Pre-Nursing AS PSLOs. PSLO 1 will be assessed using a capstone project in either ANAT 240 or MICR 262. Both of these courses can be the final course a Pre-Nursing student takes prior to applying for nursing school. PLSO 2 will be assessed using some type of mock nursing school application, questionnaire, or interview, administered near the end of the semester in ANAT 240 or MICR 262.

4.3 CSLO Assessment

Briefly describe the timeline your department uses to assess CSLOs on a regular basis and how you use the results to make improvements. This discussion should be based on SLO data, which is available on eLumen. (Your division's SLO reps can help with this.) Please include relevant CSLO charts or graphs in an Appendix. Since the last self-study, you should have assessed the CSLOs of every course that you have taught, at least once. If that is not the case, please describe how you will accomplish this as soon as possible.

Every CSLO in each of our 3 courses was assessed at least once in the last 5 years. ANAT 231 and MICR 262 are assessed nearly every year; only Spring 2017 and Spring 2020 (COVID lockdown, online only) semesters were not assessed. ANAT 240 has only been assessed twice in the prior 5 years, Fall 2017 and Fall 2020, meeting the minimum standard of assessment at least once every 3 years. Some ANAT 240 instructors will be gently cajoled and/or threatened to do more regular assessment.

Number of CSLO Assessments Completed by Semester

Semester	n
S 2016	291
F 2016	177
S 2017	0
F 2017	117
S 2018	55

F 2018	98
S 2019	36
F 2019	280
S 2020	0
F 2020	31
S 2021	109
Average	**108.5**

4.4 SLO Equity Analysis

1. Looking at CSLO attainment data, do you find significant differences by race, ethnicity, gender, and other categories? Please include some illustrations of this data in the Appendix. Describe here what the data shows. What strategies will you use to close the attainment gaps among groups of students? What kinds of professional learning would help?

Based on achievement gaps identified using retention and success data (see section 3.2) for some student groups based on ethnicity and economic disadvantage, we looked at SLOA data disaggregated using those same parameters. CSLO data shows a possible slight achievement gap for African American students, but the sample size of only 40 students is worrisome. This represents a gap of only 4 assessments. All other student ethnic groups are near the average. There was no discernable achievement gap based on economic status. (The exact definitions of the categories are not provided by eLumen. We assume that the Y category means the student is identified as economically disadvantaged. We do not know what qualifies for that category.) Please see the data tables below.

1. All Health Sciences Courses 2016-2021 by Ethnicity

Category	**Meets or Exceeds Expectations**	**n**	**Does Not Meet Expectations**	**n**
African American	70.0%	28	30.0%	12
American Indian/Alaskan Native	75.0%	3	25.0%	1
Asian	78.2%	290	21.8%	81
Filipino	76.0%	95	24.0%	30
Hispanic	82.5%	369	17.5%	78
Pacific Islander		0		0
Unknown/Unspecified	100.0%	13	0.0%	0
White Non-Hispanic	86.0%	184	14.0%	30
Average – all groups	80.1%	982	19.9%	232

2. All Health Sciences Courses 2016-2021 by Economic Status

Category	**Meets or Exceeds Expectations**	**n**	**Does Not Meet Expectations**	**n**
Unknown	81.9%	745	18.1%	165
Y (Economically Disadvantaged Status?)	78.1%	243	21.9%	68

2. Compare the equity analysis in this section to the equity analysis in Section 3.2. Are there some groups who have lower completion and success rates AND lower SLO attainment rates than

other groups? Can new departmental strategies close both gaps? Please explain. [For example, many departments found that their SLO attainment gaps are quite a bit smaller than their success gaps (or the gaps don't exist). This might mean that many students who get a D or lower in a course are actually learning the material (i.e. attaining the SLOs) but they are winding up with a failing grade for other reasons: absences, tardies, missed assignments, missed exams, poor performance on high-stakes assignments.]

Comparing CSLO achievement data to department success numbers shows (see the following table) that CSLO achievement is generally higher than course success. This could be explained as evidence of learning for students (i.e. attaining the CSLOs) who ultimately ended up getting a D or F in the course for other reasons: absences, tardies, missed assignments, missed exams, poor performance on high-stakes assignments, etc. Or, more likely, it could be explained by the fact that most CSLOs are assessed near the end of the semester when many students with poor performance have already left the course, leaving mostly C and better students to take the assessment. It is probably a combination of both factors. Either way, the achievement gap for most groups disappears when looking at CSLO attainment (see 4.4.1). CSLO data clearly shows evidence of learning for students who complete our courses; whether the data suggests learning in students who are not successful is not clear. See section 3.2.4 for plans to improve student retention and success in our courses.

Comparison of CSLO achievement to success 2016-2021

Ethnicity	CSLO Achievement	Success
African American	70.0%	30.6%
Native American/Alaskan Native	75.0%	--
Asian	78.2%	61.0%
Filipino	76.0%	49.5%
Hispanic	82.5%	39.6%
Pacific Islander	--	--
White Non-Hispanic	86.0%	56.4%
Unspecified/Unknown	90.0%	62.8%

5.0 Other Areas of Program Effectiveness

5.1 Your Department and General Education

1. Using the data provided by the OIE, please look at students who take your courses for GE credit.

While our courses qualify for GE credit, almost no students take it exclusively for this reason.

2. What role does your department play in helping students complete the GE pathway?

   N/A

3. Do you offer GE courses at a variety of time slots and at a frequency that allows students to fulfill GE requirements?

Yes, we offer our classes at a plethora of times and days of the week to accommodate as many students as possible.

4. Please take into account daytime, evening, weekend, and online classes to provide a brief sketch of your GE course availability.

   See Section 5.1.3.

5.2 Outside Influences on Your Department

1. Describe any laws, regulations, trends, policies, procedures, or other influences that have an impact on your program. Please include any other data that may be relevant to student achievement, learning, and trends within your Basic Skills, CTE, or Transfer Education programs.

One of the after effects of COVID-19 has been an increase in the retirement of veteran nurses and other health-care providers. Therefore, we anticipate continued high demand for our classes. In addition, many health care institutions, in a cost-cutting effort, are hiring nurses and physician assistants to do jobs that were traditionally done by physicians.

2. Make sure you are including all degree and certificate programs, including the College's GE program.

   N/A

3. Please also consider not only your courses, but also prerequisite and corequisite courses that might be offered by a different department.

One of our courses (ANAT 240) has a CHEM 101 prerequisite. The Chemistry Department has been able to offer sufficient sections to meet demand.
ANAT 231 and ANAT 240 are required for some P.E. AA degrees and the Kinesiology AA-T. P.E. students constitute a substantial minority (15 - 20%) of our student population. We have tried to reach out to the P.E. Division to discuss how we might work together to increase the success rate of those students.

4. If AB 705 applies to the program then how are you meeting its mandates?

   N/A

5.3 Your Program's Active and Applied Learning and High-Impact Practices

1. The College wants to create an inventory of faculty efforts to make learning active and applied. Please briefly describe opportunities your students have to apply and deepen knowledge and skills through projects, internships, co-ops, clinical placements, group projects outside of class, service learning, study abroad, and other experiential learning activities that you intentionally embed in coursework, or elsewhere in your program.

Our faculty have become certified and well-versed in online and hybrid instruction in wake of the pandemic. “Online Teaching Certificate” and “Teaching Science Online” trainings have been completed and instituted in our courses. In addition, faculty have attended annual “Human Anatomy and Physiology” conferences to stay current with new research and instructional tools.

Fully online classes at the beginning of the pandemic were insufficient for adequate student learning, thus faculty agreed to new regulations to teach on-campus classes. This included splitting each lab of 24 students into 2 lab sections, increasing the lab burden on each teacher. We were also integral in the implementation and trouble-shooting of on-campus regulations like mask wearing, social distancing, temperature check-in, etc.

All lab sections offered in the department offer hands-on experience and teach skills that will be useful in the medical community including, but not limited to, performing dissections, reading blood pressure, measuring heart rate, testing antibiotic susceptibility in microbes, performing aseptic technique, and identifying unknown pathogens. Semester projects like the Patient Profile (in Physiology) and Unknown Project (in Microbiology) offer direct experience in skills that will apply to future careers in Health Science.

Embedded tutors in all classes offer additional instruction to students that desire more help. These tutors are more relatable to students. All tutors have passed directly through our classroom and have experience that has been shown to improve study habits and grades for students that use their service.

Out-of-class opportunities that offer direct experience with patients are advertised and encouraged to students, such as the COPE Health Scholar Program and CELA Public Health Study Abroad Program in Belize. Direct faculty experience in these programs bring real-world clinical and public health expertise into the classroom.

New “Pre-Nursing Club” on campus with faculty advisor Dr. Bradley Dawson offers a place for pre-nursing majors to discuss nursing applications, volunteer and internship opportunities, coursework recommendation, etc. as well as offer guest speakers and conversations with previous Fullerton College students that have been accepted into nursing school.

Possible new certification program for “Microbiology Lab Techniques” being discussed and initial steps towards implementation have begun.

Live classroom polling are used in all of our classes. Students are kept engaged in the lecture through the use of Socratic method and questions that require student to think about the material and answer appropriately in real time. This allows participation by all students and the instructor can see students' responses and explanations. This helps to elucidate student misconceptions and misunderstandings about course content.

ePortfolio (or digital portfolios) are being incorporated as part of PSLO resign (see Section 4.2).

Group projects are integrated into each of our courses. Students are required to collaborate on a variety of tasks which promote cooperativity, peer learning, "soft skills" and student equity; all qualities essential in providing health care.

2. Are there institutional barriers hindering your department's ability to offer or enhance these learning experiences for students? Please explain.

There is not enough lab space to offer the number of sections needed to satisfy student demand. Our classes are among the first to fill every semester with no room on the waitlist after the first week of registration. Having only one lab room for Anatomy, and one lab room each for Physiology, and Microbiology that are shared with other classes, severely limits the number of sections that can be offered. More lab space and additional faculty are needed to enroll more students into the classes. For many years, the needs of our students have suffered from neglect at the hands of the Administration, but we hope that a new vocational STEM building will help rectify the situation. This building is intended to house the Horticulture, Nutrition and Foods, Biotechnology, and Health Sciences Departments. Space for each of these departments is currently woefully deficient. Many of these departments were promised increased space would be included with the passage of our previous bond measure (1999). Given the Administration's track record on building construction, we are hopeful, but not optimistic, that our laboratory space will be increased by the addition of the new STEM building.

6.0 Planning

6.1 Progress on Previous Strategic Action Plans

1. Please briefly describe the goals (Strategic Action Plans, SAPs) from your last self-study. How much progress have you made on them? If you have reached a goal, explain how it allows ongoing improvement, especially if you received additional funding.

SAP #1 - Align our classes with transfer and professional programs.

Our classes currently meet the needs of students that are transferring or entering professional programs. However, the needs of other institutions are constantly changing, and thus we need to constantly update our instruction. Most of this can be done by contacting neighboring institutions, but attendance at professional conferences is also necessary.

SAP #2 - Update faculty on latest innovations, discoveries, trends in APM.

This goal has been met through attendance at professional and educational conferences such as HAPS (Human ANAT 231 and Physiology Society) and EB (Experimental Biology). However this action plan is also ongoing as these meetings take place every year. COVID has eliminated National Conferences, but we hope they will resume in the coming year.

SAP #3 - Establish an English prerequisite for ANAT 231.

This goal has not been met as we have been unable to justify to the Curriculum Committee the need for this prerequisite. Improving entry-level basic skills should improve student success and retention, but we have decided there are other, more equitable, ways to deal with this problem.

SAP #4 - Faculty position – future retirement replacement.

A retirement within the department has taken place. Given the high demand for our courses a replacement hire will be needed immediately. We did not meet this goal, and therefore the number of sections offered to students has gone down the past few years. We anticipate another faculty retirement within the next two years. It is critical that we hire a new faculty member and we hope the college allows us to hire in Spring 2022.

SAP #5 - Faculty position – growth.

Given the high demand for our courses a growth position will allow us to increase our offerings. We did not meet this goal, however our department will be moving into a new building in the 2025/2026 academic year which should offer us more lab space. This additional space would allow to add another faculty position in order to meet the incredibly high demand for our courses.

SAP #6 - Improve community outreach.

Due to restrictions put in place due to the COVID – 19 pandemic, we have been unable to meet this goal

SAP #7 - Create a Campus STEM Resource Center.

Unfortunately, this goal was not met. We hope to work with the college administration in the next few years to make the STEM Center a reality. If created the STEM Center will:

- Address the needs of under-prepared students.
- Increase course retention and success.
- Increase the number of degrees and certificates awarded.
- Increase the number of transfers.
- Increase the persistence rate of students.
- Strengthen our contacts with Alumni.
- Strengthen partnerships with local feeder high schools and universities.
- Strengthen partnerships with local business and industry.
- Increase funding capabilities of the college.
- Increase engagement of the college with the community through college events, community service, and other partnerships.
- Increase student equity by providing a space for peer interaction, tutoring services, and open lab hours for students who are working or have family obligations which limit their ability to take advantage of the supplemental instruction that is currently offered.

SAP #8 - Purchase a table-top autoclave.

This goal has not been met as we have not obtained the funding to purchase the device. It is still a need as we currently only have 1 autoclave and if it breaks down we will be unable to offer microbiology lab sections.

SAP #9 - Purchase 2 Spirometers.

This goal was met and we have purchased two new spirometers which are being used in the physiology respiratory lab.

SAP #10 - Purchase an audiometer.

This goal has been met and we have purchased a second audiometer which is being used in the hearing lab of physiology.

2. If additional funds were NOT allocated to you in the last review cycle, how did the LACK of funds have an impact on your program?

The lack of laboratory space and a STEM center has a tremendous effect on student access and success. Hiring of additional faculty would allow more students the opportunity to pursue careers in the health care field.

6.2 New Strategic Action Plans

Please write brief, concrete plans that you will accomplish over the next four years. Your plans might include requests for additional funds. The Program Review Committee will read these and either endorse the request or ask for more information. Please keep in mind that the Committee's endorsement does not guarantee additional funding. The President's Advisory Council and Faulty Allocation Committee play major roles in allocating funds and prioritizing new faculty hires.

Please number each of your plans. This will help keep to track of them. Also, make sure that each funding request includes the following elements:

1. It is supported by the data and analysis in previous sections of this self-study.
2. It fulfills a part of the College mission, vision, goals, or objectives.
3. It explains how the request helps the College attain student equity.
4. There is a measurable way to tell if the extra funding will be effective.
5. It considers whether you can reach this goal (or parts of it) without additional funding.
6. Please give a dollar amount, or best estimate. If you can identify a funding source, then please name it. If you can put the request into one of the following categories, please do so: Personnel, Facilities, Equipment, Supplies, Computer Hardware, Computer Software, Training, Other.

Each of our Strategic Action Plans is based with our Mission Statement, which, in tern, is aligned with the College Core Values.

SAP #1 – Construction of a new vocational STEM building which would have the facilities that we need to increase our course offering and innovate instruction. The STEM building is in the process of State approval and is scheduled for completion, if funded, in the academic year 2025/2026. (See sections 3.1.3, 3.1.4, 3.1.5, 3.3.1, 5.3.2)

SAP #2 – Create a Campus STEM Resource Center.

- If created the STEM Center will:
    - Address the needs of under-prepared students.
    - Increase course retention and success.
    - Increase the number of degrees and certificates awarded.
    - Increase the number of transfers.
    - Increase the persistence rate of students.
    - Strengthen our contacts with Alumni.
    - Strengthen partnerships with local feeder high schools and universities.
    - Strengthen partnerships with local business and industry.
    - Increase funding capabilities of the college.
    - Increase engagement of the college with the community through college events, community service, and other partnerships.
    - Increase student equity by providing a space for peer interaction, career and science clubs, tutoring services, and open lab hours for students who are working or have family obligations which limit their ability to take advantage of the supplemental instruction that is currently offered.

(See Section 3.2.4)

SAP #3 - Faculty position – future retirement replacement.

A retirement within the department has taken place. Given the high demand for our courses a replacement hire will be needed immediately. We anticipate another faculty retirement within the next two years. It is critical that we hire a new faculty member and we hope the college allows us to hire in Spring 2022 and an additional one in Spring 2024.

SAP #4 - Faculty position – growth.

We have more than enough demand for our courses to allow us to grow with a new hire in 2022/2023. This position would generate at least 40 FTES/semester plus a additional 40 - 80 FTES because students typically take more than one class. In addition, we hope our department will be moving into a new building in the 2025/2026 academic year which should offer us more lab space. This additional space would allow to add another faculty position in order to meet the incredibly high demand for our courses.

SAP #5 – Additional funding for replacement of old equipment and purchasing of additional state-of-the-art equipment

Our classes all involve laboratory components. The courses we teach have a high capital outlay cost due to the nature of high-tech science labs. These labs require state-of-the-art equipment which are necessary to meet our course objectives transferablility. Funding is, at this point, indeterminate because we don't know what equipment we have will break and what new equipment will become necessary for us to teach our classes as the definition of state-of-the-art changes. An example of this uncertainty is that our electrocardiograms broke last year, which prevented us from doing some critical labs in ANAT 240 (Human Physiology). We had to scramble for funds for new ones to allow us to continue to teach.

SAP #6 – Faculty need to continuously be updated in the latest trends in pedagogy, student equity, technology, and new developments in the field. Our faculty would like to continue attend professional and educational conferences such as HAPS (Human Anatomy and Physiology Society), EB (Experimental Biology), and ASM (American Society of Microbiology). In the past, we have primarily used Division travel funds (about $3,000/yr.) but this source of money is not guarenteed from year to year.

SAP #7- Upgrade the water supply to our autoclave. The autoclave is dependant on a continuous supply of deionized water. We currently are experiencing continuous problems because of a lack of a functioning autoclave. The autoclave is used by Microbiology, Physiology, Biotechnology, and Cell Biology. Without a functioning autoclave, these classes grind to a halt.
The cost of this system is about $5000, with about a $1200/year ongoing cost.

6.3 Optional: Long-Term Plans

Your department might have more plans than just immediate requests for funding. If so, please describe them here.

a. Our long-term plans depend on the construction of the new Vocational STEM Building. Once that is under construction, we will have a better understanding of our future needs.

b. In cooperation with the Biotechnology Program, we would like to offer a Certificate in Microbiology Lab Techniques. We would need to develop new curriculum to support this certificate program. If this program is approved, we will need additional funding for lab supplies and equipment to support these classes.

7.0 Executive Summary

Please provide the reader with a brief overview of the highlights, themes, and key elements of this self-study. Please don't include new information you did not discuss earlier. Although you will likely write this section last, please remember to put this summary at the front of your report.

8.0 Publication Review

The College wants to maintain integrity in all representations of its mission, programs, and services. Please help this effort by reviewing your publications: professional social media profiles, websites, brochures, pamphlets, etc. Please tell us the date they were last reviewed and if you found them to be accurate in all representations of the College and program missions and services. Information on the college's graphic standards is available here.

1. For each of your program's publications, please provide the URL where the publication can be viewed. If the publication cannot be accessed via the Internet, please contact Lisa McPheron, Director of Campus Communications at lmcpheron@fullcoll.edu.

   N/A

2. If you find an inaccurate publication, please explain how you will make corrections.

   N/A

3. If your department maintains a social media presence then please describe it here. What do you use it for? How do you monitor it? Who is in charge of it? In what ways is it benefiting the College and your program? Does it follow the District's social media guidelines?

   We are part of the Natural Sciences division website (http://www.natsci.fullcoll.edu).

4. If your program regularly communicates with the wider community, please describe how. What feedback do you get from the community?

   N/A

Format notes

Cover Page: standardize for each self-study, with signatures

Executive Summary: on a separate page, all by itself, for ease of processing.

Main body of the report

Appendix A: Key Performance Indicator (KPI) data

The Office of Institutional Effectiveness will provide data for departments to analyze. To answer some of the questions on this form, departments will need disaggregated data that focuses on specific groups. The data will be presented to identify equity gaps among groups, so that departments can plan ways to

close those gaps. Departments should also be informed how their student populations compare to the overall college population, and the population of the college's service area.

See Attachment

Appendix B: SLO data

Incorporated into Section 4.

Appendix C: Other data

N/A