

Division: Science and Math

Name of Program/Area and Contributors

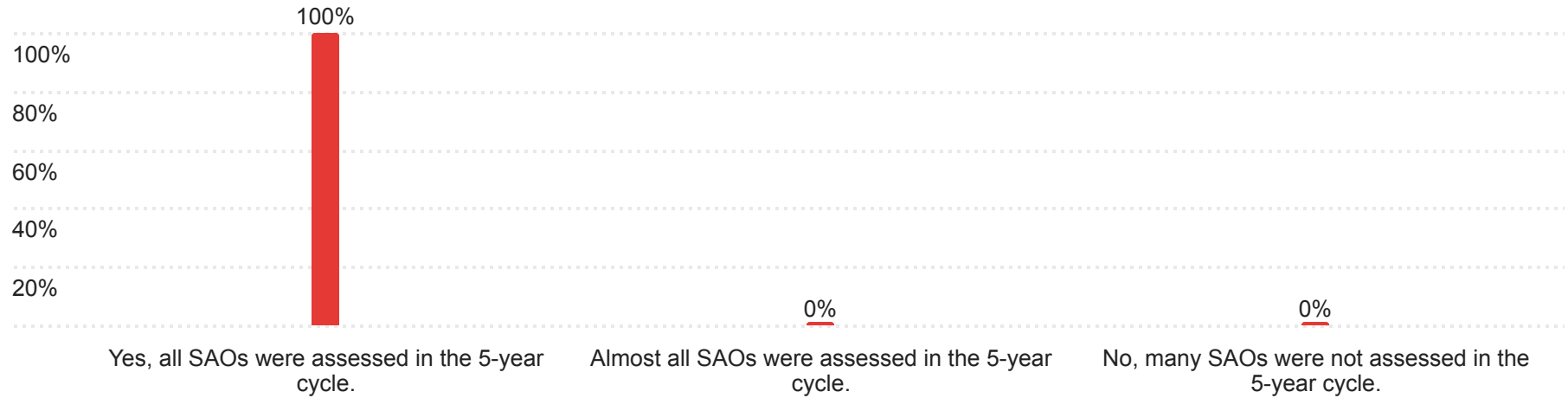
9 Responses

Program/Area Name	Name(s) of the person or people who contributed to this review:	Which PAR Template did you fill out?
Astronomy	Shannon Lee, Andrew Totah McCarty	Academic Services
Chemistry	Wayne Pitcher, Donna Gibson, Yasmin Trout, George Arab, Andy Wells	Academic Services
Computer Science	Jonathan Traugott, Yi Dai, Wanda Wong	Academic Services
Earth and Environmental Sciences	Jasmeet K. Dhaliwal	Academic Services
Engineering	Daniel Quigley	Academic Services
Life Sciences	Megan Jensen, Jennifer Lange, Jeffrey Tsao, Robert Cattolica, Gargi Kulkarni, Harmony Folse	Academic Services
Math	Ming Ho	Academic Services
MESA TRIO STEM	Maria Rodriguez-Larrain. Donna Gibson	Student Services/Administrative Services/Office of the President
Physics	Shannon Lee, Andrew Totah McCarty	Academic Services

Responses on Service Area Outcomes for Areas in Your Division

Were all your Service Area Outcomes (SAOs) assessed in the 5-year cycle?

1 Responses



Responses on Student Learning Outcomes for Programs in Your Division

Explanations for programs who have not completed SLO assessments in the five-year assessment cycle:

9 Responses

Program/Area Name	If any courses in your program/discipline have not completed SLO assessments in the five-year assessment cycle, please explain why.
Astronomy	To my knowledge all SLO's have been completed
Chemistry	N/A

Computer Science	We plan to complete assessing several courses that were most-recently assessed in 2018 and 2019. Due to lack of staffing, those courses did not complete the assessment cycle
Earth and Environmental Sciences	ENSC 15 has not completed the SLO assessment, because it had not been offered in the past several years. It is being offered for the first time this Fall 2024, but enrollment fell from 24 to only 8 students, so we are planning to assess it in a future semester with more substantial enrollment. The exemption was submitted this past academic year (2023-2024).
Engineering	Courses that have not been evaluated in the five year cycle is because they have not been offered or have only been offered once with a small class size.
Life Sciences	N/A
Math	N/A
MESA TRIO STEM	N/A
Physics	I have completed the outstanding SLO's for physics to my knowledge.

Responses on Program Learning Outcomes for Programs in Your Division

Explanation for programs who have not completed PLO assessments in the five-year assessment cycle:

9 Responses

Program/Area Name	If your program/discipline has not completed PLO assessments in the five-year assessment cycle, please explain why.
Astronomy	We do not have a degree or certificate program (currently)
Chemistry	N/A
Computer Science	Completed

Earth and Environmental Sciences	This is not applicable yet as we have only been offering relevant courses since Spring 2023, and so no degrees or certificates could be completed before this time.
Engineering	N/A
Life Sciences	N/A
Math	N/A
MESA TRIO STEM	N/A
Physics	It is my understanding that our PHYS AST PLO's were completed in Spring of 2023. This was completed by a retired faculty member and I do not see the update on the PLO tracking sheet.

Responses on Institutional Supports and Barriers

Regarding Your Program or Area

What institutional-level **supports or practices** were particularly helpful to **your program or area** in reaching its PAR Goals, SLOs, PLOs, SAOs, and/or the college mission?

9 Responses

Program/Area Name	What institutional-level supports or practices were particularly helpful to your program or area in reaching its PAR Goals, SLOs, PLOs, SAOs, and/or the college mission?
Astronomy	The MESA student assistants have been a huge help for ASTR 30. Our lab tech has been helpful in dealing with our equipment and storage needs (helping to clean and organize our storage area).
Chemistry	N/A

Computer Science	META, program mapping, Institutional Research, EBCAN initiative for CSUEB transfer students
Earth and Environmental Sciences	The major support in achieving PAR goals are funds for hiring our new full-time faculty; the curriculum committee and their support in developing, launching, and revising new courses to ensure articulation; and the grants and research office's support in submitting two grants (NSF and NASA) this past year.
Engineering	Curriculum, COOL, and CE committees were very helpful.
Life Sciences	Several of our faculty were trained on the Tiny Earth undergraduate research model. Once this project is fully implemented, students will attempt to isolate antibiotic producing bacteria from the environment. Several faculty were also trained in modern cell culture techniques at UC Berkeley. We hope to offer a biotechnology CTE program once our new lab facility is constructed and equipped.
Math	OER support has been helpful in recruiting faculty to use OER and spread the work.
MESA TRIO STEM	Partnering with the HSI STEM Counselor has been helpful to meeting our goals.
Physics	The Gladiator Hub has been an excellent resource for meeting students basic needs. The STEM Center, Learning Connection Center, and MESA/Trio have been an integral part of student success in our courses. The Engineering/Physics SST has been a great work group for our discipline. Our new library is outstanding! I have former students who have transferred and returned to use our library over the libraries at CSUEB and SJSU. What a wonderful space with so many incredible services for students.

What institutional-level **barriers or challenges** prevented or hindered **your program or area** from reaching its PAR Goals, SLOs, PLOs, SAOs, and/or the college mission?

9 Responses

Program/Area Name	What institutional-level barriers or challenges prevented or hindered your program or area from reaching its PAR Goals, SLOs, PLOs, SAOs, and/or the college mission?
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Astronomy Doing astronomical observing for our astronomy 30 lab and public events has become nearly impossible with the construction, new buildings, and campus lighting. We are actually going to cancel the night lab, which has been in place for decades, to create a day-time lab due to not having a sufficient and safe observing area. Having an evening course is challenging when buildings lock before the course has ended. Students come on campus without dinner options, and our cafeteria is closed.

Chemistry

N/A

Computer
Science

Lack of staff.

Earth and
Environmental
Sciences

There is currently not explicit institutional financial support for compensating faculty for developing interdisciplinary courses; while this was a major goal discussed at the time of the full-time faculty hire.

Engineering

Additional lab space and access to wifi/internet.

Life
Sciences

We are understaffed: we had three retirements in the last three years with only two new hires; we need more FT faculty to best support and coordinate course design and instructional practices.

Construction and Moving: the majority of the hours required to move to our new facilities (and temporary facilities) in building 3200 came from the laboratory technicians and full-time faculty members.

Math

N/A

MESA TRIO
STEM

It would be very helpful to have software provided that allowed for the tracking and reporting of data required on our various reports to both the state (MESA) and the federal government (TRIO-STEM)

Physics I am still disappointed in our cafeteria offerings and hours. I know that we have a new vendor, but there have yet to be any improvements (actually, things seem worse). Evening classes are challenging to teach because no support services on campus are open (even the library closes at 7pm). AB1705 looms heavily on the minds of folks in STEM. We are worried about the future success of our students and the enrollment loss we will incur if students can't succeed in calculus without the foundational knowledge they are no longer required to learn. I also miss the express service that our Reprographics center used to offer. It was a way to get copies made in an emergency when both of the ones in our division office are down.

Regarding Students in Reaching their Educational Goals

From your vantage point, what does Chabot do that is particularly **helpful to students** in reaching their educational milestones and/or goals? (i.e., what does Chabot do for students that we should **keep doing**?)

9 Responses

Program/Area Name	From your vantage point, what does Chabot do that is particularly helpful to students in reaching their educational milestones and/or goals? (i.e., what does Chabot do for students that we should keep doing?)
Astronomy	We provide significant opportunities for students to receive help. The Gladiator Hub, DSPS, WRAC center, Learning Connection, STEM Center, Learning Communities, Counseling...etc. All great! We have lots of ways that students can receive help and have agency and dignity. Our councilors are especially helpful and events like SOAR day and STEM family night are great for the college.
Chemistry	N/A
Computer Science	The STEM Center, Computer Science workshops, MESA, Computer Science Club, extracurricular activities on and outside of the campus, Hackathons with UCD and CSUEB, field trips to companies and universities, invitational talks through MESA.
Earth and Environmental Sciences	I think that counseling and tutoring programs are very effective. Resources such as the MESA STEM center, library programs and research guides, WRAC are also very valuable for the students in academic success.
Engineering	MESA events and outreach, STEM Center tutoring, HS outreach

Life Sciences	<p>MESA - provides individualized support to help students get access to experiences, funding, etc. to further their academic goals</p> <p>Health Career and Transfer Fair - great opportunity to have students learn about different educational and career options encourage more people to attend/advertise for next year</p> <p>Tutors/Embedded tutors from LC</p> <p>For the past few years the college has paid for printing our lab manuals so students receive them for free!</p>
Math	<p>Continuing to offer pretransfer level math courses post AB 705 and courses before calculus post AB 1705 is invaluable in supporting students by meeting them where they are.</p>
MESA TRIO STEM	<p>The move to the single sign on and portal system seems like a step in the right direction allowing students to more easily access the information they need and spend less of their time at Chabot learning our systems.</p>
Physics	<p>We provide significant opportunities for students to receive help. The Gladiator Hub, DSPS, WRAC center, Learning Connection, STEM Center, Learning Communities, Counseling...etc. All great! We have lots of ways that students can receive help and have agency and dignity. Our dedicated STEM councilors are especially helpful and events like SOAR day and STEM family night are great for the college and our program in specific.</p>

From your vantage point, what does Chabot do or NOT do that is a **hindrance to students** in reaching their educational milestones and/or goals? (i.e., what does Chabot do that we should **stop doing or change** to better support our students?)

9 Responses

Program/Area Name	From your vantage point, what does Chabot do or NOT do that is a hindrance to students in reaching their educational milestones and/or goals? (i.e., what does Chabot do that we should stop doing or change to better support our students?)
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Astronomy	The hours that we offer the resources (mentioned above) are not inclusive of all our student and faculty needs. Our evening students and faculty struggle to find services and support. Students who have availability on Fridays are often shut out of services or have very limited hours to access them.
Chemistry	N/A
Computer Science	It would be helpful to have an institutional policy regarding the illicit use of AI that instructors can refer to in the course syllabus.
Earth and Environmental Sciences	There is limited communication between counseling faculty and instructors for students who need extra support—initiating these conversations for students who are struggling would be valuable. There is also limited communication between DSPS and instructors, as well as between ESL and instructors; if we had more conversations about students in these programs who may be struggling in classes, we could more effectively support student success.
Engineering	N/A
Life Sciences	<p>More support needed for Allied Health pathways - they are the largest proportion of our students, but they do not get the same level of support/guidance to support faculty or students as this is not a STEM pathway. Provide more dedicated counselors and funding for other Student Success Team members.</p> <p>Tutors for our capstone pre-allied health courses (microbiology, physiology) are hard to recruit since students frequently transfer after completion of these courses. Likewise, tutors for our capstone biology majors course (cell and molecular biology) are also hard to recruit. These are some of our most challenging courses and there is the least tutoring support available due to normal student transfer behavior. Providing a staff instructional assistant to serve as a tutor for these courses may increase success rates.</p>
Math	N/A
MESA TRIO STEM	The amount of paperwork required for field trips and conferences requires a lot of staff time. Streamlining the process may incentivize staff to offer more opportunities (at this time, the paperwork is a deterrent to offering opportunities).

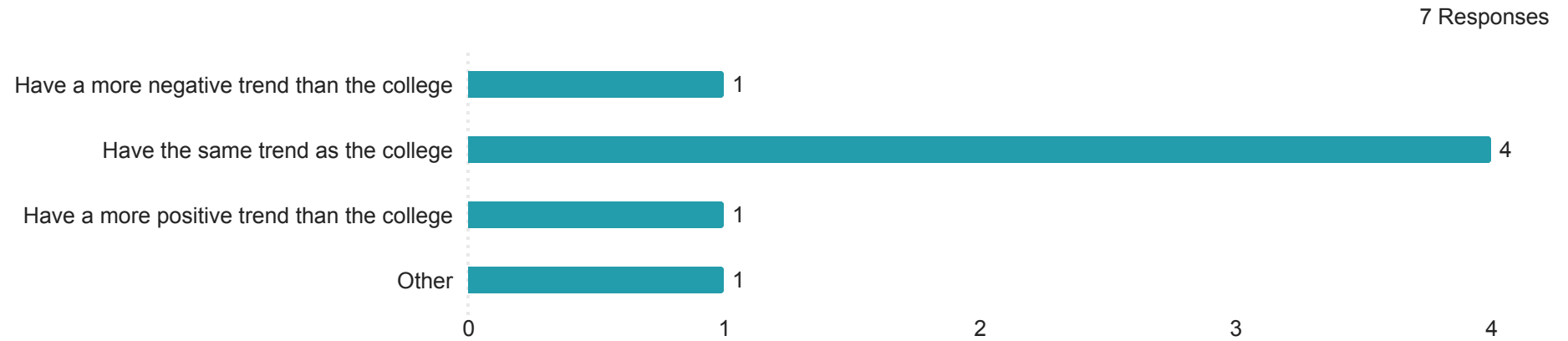
Physics

The hours that we offer the resources (mentioned above) are not inclusive of all our student and faculty needs. Our evening students and faculty struggle to find services and support. Students who have availability on Fridays are often shut out of services or have very limited hours to access them.

Responses on Academic Programs/Disciplines Data

FTES (Full-Time Equivalent Students) and Enrollment

Compared to the college, did your program:



Please provide a brief explanation that would help the college understand these trends in your program (e.g., tangible reasons for the increase or decrease).

9 Responses

Program/Area Name	Please provide a brief explanation that would help the college understand these trends in your program.
Astronomy	Our trends in enrollment seem to follow the college trend.
Chemistry	N/A
Computer Science	CSCI enrollments were affected by the pandemic like they were for the college overall. Similarly, enrollments trended upward post Covid and have since stabilized.

Earth and Environmental Sciences	This program is expanding, so as we become more visible to the students and expand our course list, we are increasing our FTE's. Alongside, our enrollment has also been increasing: from Spring 2023-Spring 2024: 67% to 90% in ENSC and 38% to 65% in GEOS.
Engineering	Student FTES has increased each year for the past 3 years.
Life Sciences	But, it is important to note that we were unable to increase all the way back up due to space constraints due to facility limitations starting in Fall 23. Due to shared lab spaces, we lost 2 anatomy sections. In addition, we have had difficulty staffing the sections we do offer and had to cancel a physiology section that could not be staffed due to losing a full-time faculty to retirement.
Math	Fall 2022 was the first semester we came back mostly in-person from the pandemic. Maybe the decrease come from students avoiding math after learning loss through the pandemic. There may also be AB 705 effect if students are discouraged from persisting in math when they are first placed in transfer-level that feels so much above their head, but we weren't able to advise them otherwise.
MESA TRIO STEM	N/A
Physics	I need to find out the tangible reasons for the trends. We had a significant unexpected increase in students wanting to take Physics 4A this semester. Currently we do not understand why.

As noted above, enrollments impact our funding. Are there specific courses/sections that, on average, across the past three years did not fill to capacity? Why might this be?

9 Responses

Program/Are a Name	Are there specific courses/sections that, on average, across the past three years did not fill to capacity? Why might this be?
Astronomy	Our fill rates in ASTR 10, 20, and 30 classes have been relatively high. Our problem course is ASTR 45 which is a new offering that we just can't seem to get students interested in taking and have had to cancel it multiple times for low enrollment.
Chemistry	N/A
Computer Science	Most courses had average fill rates of around 80%. Sections that had lower fill rates include CSCI 42 which is a follow up to CSCI 41. Students often opt to only take the first course in that two-course sequence. Among courses that are offered both 100% on campus sections and in sections in 50% hybrid format, the hybrid sections have significantly higher fill rates than the 100% on-campus sections. This may be due to the greater flexibility offered by hybrid courses, which typically meet one day per week rather than two days per week. Also, the hybrid course is less likely to conflict with other courses the student needs to take.
Earth and Environmental Sciences	All of our sections, with the exception of ENSC 10 (Online, Asynchronous) have not filled to capacity in the semesters with enrollment data (Spring 2023-Spring 2024). This is largely because these programs are either new (GEOS) or being revitalized (ENSC), and so while enrollment is steadily increasing, they still remain below capacity. Additionally, there is strong interest in online classes at present as students are largely taking GEOS and ENSC for GE requirements while we work on developing our degrees and certificates.
Engineering	Yes, there are specific engineering courses not filling to capacity. Pre-requisite changes have impacted enrollment. Also, most courses under-enrolled are taken their last year before transfer. Low enrollment in these courses correlate to decreased FTES in 2020
Life Sciences	Almost all the hybrid sections have lower enrollment census despite typically having a waitlist on opening day; students appear to be dropping the course in the first two weeks in the hybrid sections at a higher rate compared to in person sections.

I am not sure the questions posed are quite the right questions for the statement “enrollments impact our funding,” which suggests an investigation of enrollment numbers and how they can improved. The questions listed are more about cost cutting AFTER the students have already enrolled and not relevant to capturing more enrollment, so it would be nice not to conflate increasing revenue from enrollment with improving efficiency.

Nonetheless, to answer the questions, MTH 16, 33S, and 41S tend to not fill to capacity. They are offered once a year during the Spring term. Each is a required major requirement for either an ADT or a transfer program. To support students choosing these smaller programs, we have to offer the courses to complete their educational goal.

Math

We also get a low enrolled section at times for MTH 3, 4, 6, and 8, which are all required courses in STEM major programs. They each have 1-3 section per semester, which is adjusted by enrollment expectation. Further, MTH 3, 4, and 6 are coreq to physics classes, so we have to serve the students when they need the course to avoid impacting their academic progress. That means if we expect 45 students, we must offer two sections with a cap of 35 each to accommodate the time sensitive demand.

We had fast-track courses that are 8-weeks so that students can complete two math courses in a sequence toward calculus in a semester. The numbers weren't high to begin with and have been dropping. We had to keep offering them as part of an NSF grant, but that is no longer the case. So those low-enrolled courses will not be scheduled in the future.

MESA TRIO STEM

N/A

Physics

Physics 5 is always a small class because so few students need it to transfer. We primarily serve the engineering majors and they do not usually need PHYS 5. Other sections of PHYS are primarily over 100% fill rate with occasional slips of low enrollment due to low success rates in the prerequisite courses or evening sections for our PHYS 3 series courses.

Is there anything faculty in your program would consider doing to improve overall discipline productivity* while maintaining our commitment to student learning? (e.g., taking additional students in sections with higher fill rates or changing the days/times or format (in-person, hybrid, online) of low fill-rate classes)

**productivity=(FTES or WSCH)/FTEF*

9 Responses

Program/Area Name	Is there anything faculty in your program would consider doing to improve overall discipline productivity* while maintaining our commitment to student learning?
Astronomy	We do take enough students on the waitlist to fill our room to capacity. Overall our ASTR program has very high WSCH/FTEF. Our online courses have very high fill rates, our hybrid classes do not so we stopped offering them.
Chemistry	N/A
Computer Science	Offering more programming courses during summer might be one avenue to boost productivity. Sections of CSCI 19A and CSCI 14 had unusually high productivity in Summer 2023. This was mostly due to the large number of high school students wanting to take a summer programming course.
Earth and Environmental Sciences	We are currently doing all that we can to be strategic in our course offerings so that they fulfill student needs (hybrid, online, in-person), as well as the requirements of the program and course loads of faculty. We have reached out to students on the waitlist several times prior to the start of the semester and census, but a large number of students did not respond.
Engineering	Engineering has made multiple changes to increase productivity. Many classes are now only offered once per year. Faculty take additional students in high demand sections. Most classes are offered hybrid to prevent course overlap.
	Most faculty already over-enroll their sections to the capacity of the room to accommodate students' on the waitlist. There isn't much else we can do to increase productivity.
Life Sciences	We will limit the number of online sections in the discipline to balance the need for flexibility with student schedules to ensure student success and capacity. We can ensure all instructors are clearly communicating with students prior to the start of the semester about the correct course sequence and hybrid course structure and expectations.

Math We already take on additional students as appropriate, typically up to 40. Since load factor for large lecture does not start until 55 students, it's not worth an instructor's effort to convert to large lecture to take more from waiting list when the cap is 35 for math classes.

MESA TRIO
STEM N/A

Physics In Spring 2025, we are teaching a triple section of Physics 4A to accommodate the number of students who have tried to enroll in Fall 2024. The more students we can enroll in classes at the beginning of our program, the better fill rates we have in the successive courses. We are also working with our STEM discipline partners to schedule physics classes when they do not conflict with the other courses our students may need to take.

Are there any classes in your discipline which routinely fill to capacity and for which there is often a waitlist? If yes, please list here.

9 Responses

Program/Area Name	Are there any classes in your discipline which routinely fill to capacity and for which there is often a waitlist? If yes, please list here.
Astronomy	ASTR 10, ASTR 20
Chemistry	N/A
Computer Science	CSCI 19A usually fills to capacity. Many high school students take the course to prepare for the AP exam in computer science.
Earth and Environmental Sciences	GEOS 11 Online and ENSC 10 Online (both were full and had full waitlists at the beginning of the Fall 2024 semester). However, GEOS 11 ON fell to ~65% and ENSC 10 ON fell to ~90% thereafter.
Engineering	Yes, we have two classes that routinely fill to capacity. This is because every engineering student must take these courses. Other courses are only needed by specific engineering disciplines for transfer.
Life Sciences	BIOS 41, BIOS 42, BIOS 43, BIOS 44

Math N/A

MESA TRIO STEM N/A

Physics PHYS 4A, PHYS 3A, PHYS 4C (but 4C is only offered 1/year to keep enrollment in this course up)

Enrollment Disaggregation

The representation of traditionally underrepresented race/ethnicity/gender student groups in our **program/major** compared to our industry/field:

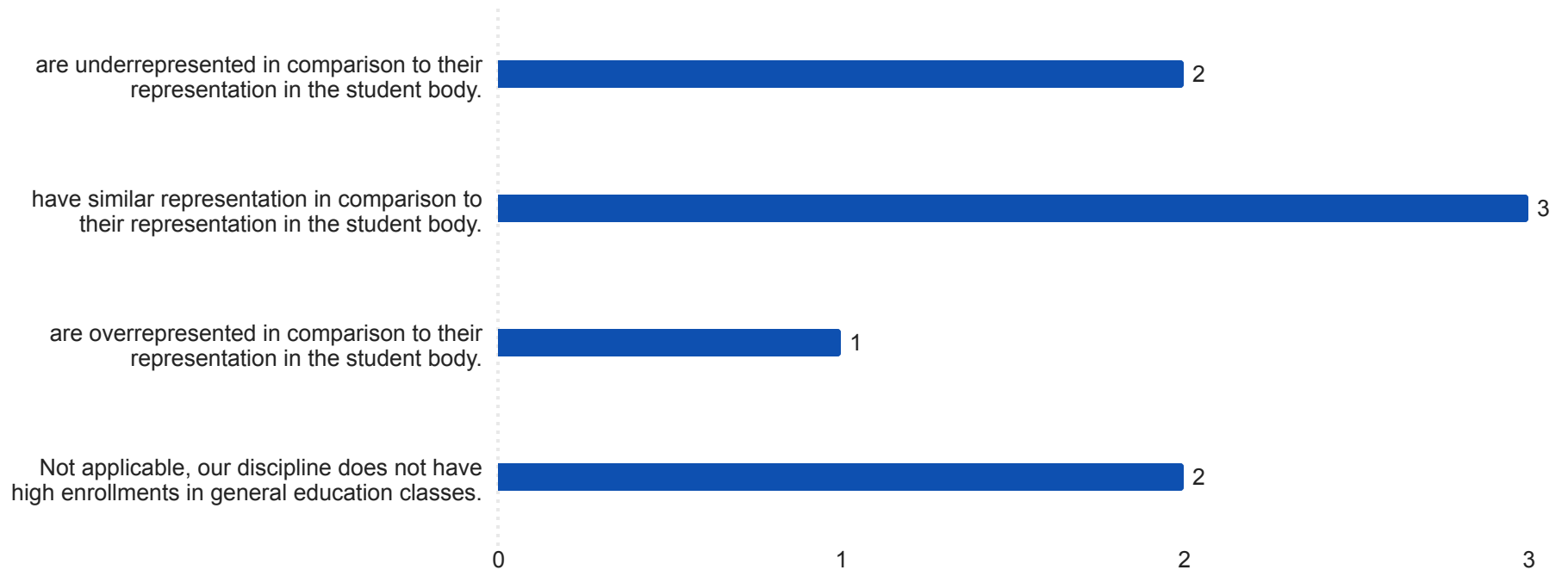
8 Responses



For programs/disciplines with a high percentage of offerings that are required for General Education—such as English, math, or communication studies—please also compare the representation of traditionally underrepresented race/ethnicity/gender student groups in your general education classes to the overall student body population.

Traditionally underrepresented student groups in our **general education** classes:

8 Responses



Please provide a brief explanation that would help the college understand these trends (e.g., tangible reasons to understand the representation of traditionally underrepresented student groups in your discipline/major and, if applicable, general education classes at Chabot).

9 Responses

Program/Area Name	A brief explanation
Astronomy	Our diversity in ASTR courses is very similar to the college representation.
Chemistry	Chemistry, like other STEM disciplines, has historically had fewer students from underrepresented groups. However, over the past 2 years our overall percentage of students from these groups has increased and is approximately equal or slightly greater than that of the college as a whole. The specific breakdown of students from underrepresented groups is slightly different in Chemistry than the college as a whole, with a higher percentage of Filipino and multi-racial students and a slightly lower percentage of Latino and African-American students. Still, we are now within 2-3 percentage points of the college as a whole. Our work to increase equity seems to be paying off.
Computer Science	Traditionally underrepresented students take CSCI 8 in similar numbers to other general education courses.
Earth and Environmental Sciences	The majority of students are currently taking GEOS and ENSC classes for GE requirements. Our African American/Black and Pacific Islander students are underrepresented compared to the student body, while Filipino/a/x are slightly overrepresented compared to the student body.
Engineering	Students enrolling in introductory engineering classes have a similar representation as the college student body in race/ethnicity, however, these trends do not persist into 2nd and 3rd year courses. Students either choose another major (not interested in engineering) or they are unable to complete math and science pre-requisites for 2nd and 3rd year engineering courses. Women are underrepresented in comparison to the student body. Multiple reasons are possible including cultural norm, representation in industry, and failed marketing/advertising.
Life Sciences	Our trend shows a higher representation of Filipino students, especially within the pre-health science fields, than the college as a whole. And, fewer white students, slightly fewer black students, and slightly more Asian American students, and match the proportion of Latinx students compared to the college. These trends are consistent across the years.

Chabot STEM math enrollment has more Hispanic and Asian than their respective proportion in the national STEM workforce, but that's mostly the result of our demographic leaning more heavily in those groups. When compare with the Chabot demographic, Chabot STEM math enrollment is underrepresented by White, Latinx, and Black.

Math
 White is noticeably underrepresented in the first-level transferable math enrollment. In fact, they are also underrepresented in all of math enrollment. One possible explanation is that perhaps more White students come in with advanced placement, either satisfying transfer or major math requirement already upon admission or starting at higher level, thus taking fewer math courses at Chabot compared to other students in the same program of study.

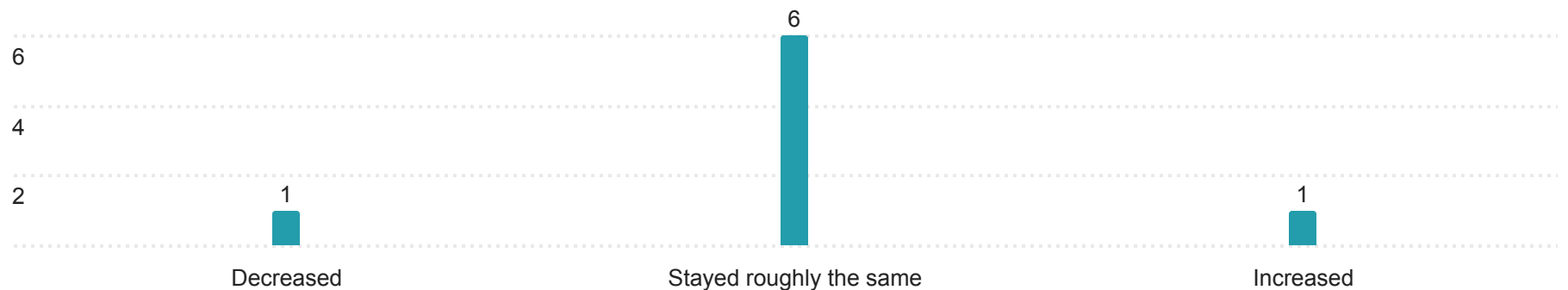
MESA TRIO STEM N/A

Physics
 The physics field is not diverse in the USA however, because our college is in one of the most diverse cities in America and our region is known for tech and engineering, our program is more diverse than the national average. It is one of my favorite things about teaching at Chabot. We are actively working to increase our diversity in Black/African American students specifically and for all traditionally underrepresented student groups by using anti-racist teaching practices in our pedagogy and teaching methods, creating course content that highlights contributions from diverse scientists, and working closely with MESA Trio programs.

Course Success Rates

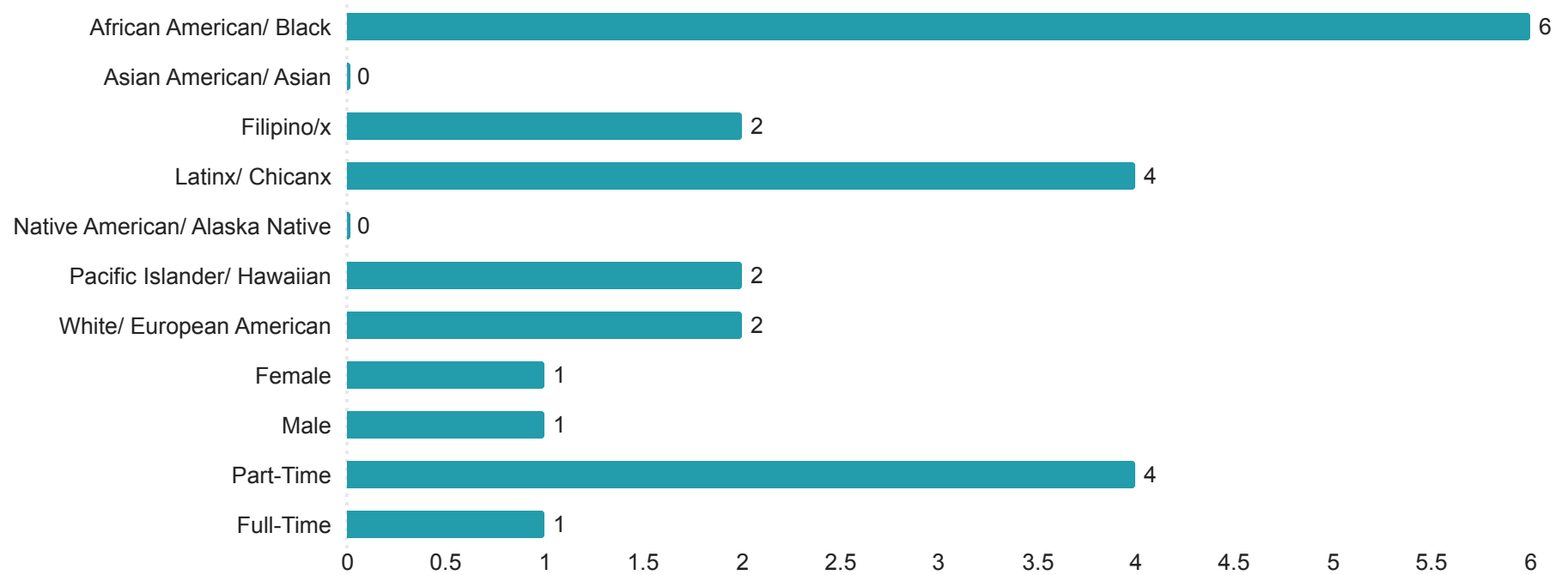
Over the past three years, how have course success rates in your discipline changed? Course success rates have:

8 Responses



Check all groups that are succeeding at lower rates than students from other racial/ethnic, gender, full-time part-time groups, or the overall college average):

6 Responses



Please add any other groups that succeed at lower rates not included above. And provide a brief explanation that would help the college understand the trends in overall course success rates or any student groups that succeed at lower rates:

9 Responses

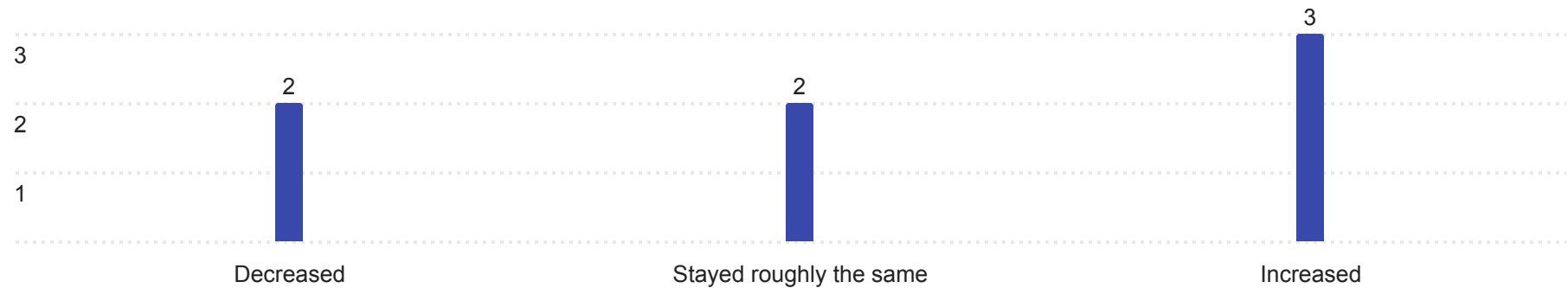
Program/Area Name	Comment/Explain
Astronomy	This course does not have prerequisites and can be the very first college course students take.
Chemistry	Since overall success rates in Chemistry courses is lower than the college average, it is not surprising that the different groups of students have lower success rates than the college average. The one exception is Asian-American students, who have a success rate equal to that of Asian-American students college-wide. Some differences in success rates show variation from the college averages. For example, female students have a higher success rate in Chemistry classes than male students, which is opposite the trend seen college-wide.
Computer Science	Part time students may have lower success rates because they tend to have full-time jobs that cut into study time. More data would be required to understand the reason for lower success rates among both African American and white students.
Earth and Environmental Sciences	There is not enough data to appropriately assess success by the groups above at this time.
Engineering	Engineering success rates are typically lower for all students due to the rigor and content. Difficult to analyze trend lines, as most populations are too small to measure.
Life Sciences	We have a slightly higher withdrawal rate within our Health Science courses than the college average. This is due to the fact that students who are on track to get a "C" will often drop due to the need for a strong GPA to apply for nursing and other health profession programs. In other programs, these students would be considered successful!
Math	Nothing to add that is not already in the literature of disparate impact in math success
MESA TRIO STEM	N/A

Physics Looking at the data, all groups referred to in the previous question are succeeding in physics at rates that are approximately equal to the college rate (average) or greater.

Program Completion (AD-Ts, AA/AS, Chancellor-approved Certificates)

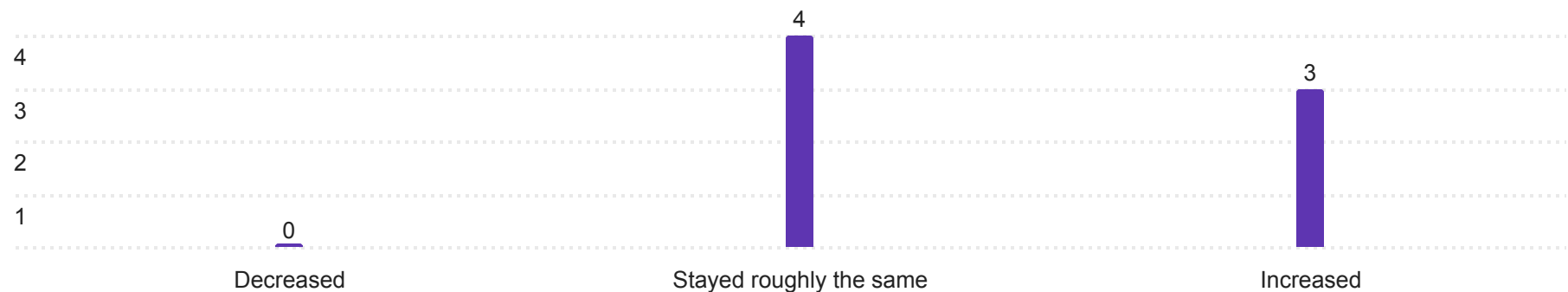
Over the past 3 years, what is the trend in Degrees awarded (AD-Ts and AA/AS) in your program(s)?

7 Responses



Over the past 3 years, what is the trend in **Chancellor-Approved** certificates (the ones that count for funding in the SCFF) awarded in your program(s)?

7 Responses



Please provide a brief explanation that would help the college understand these trends in degree and certificate completion in your program (e.g., tangible reasons for the increase or decrease).

9 Responses

Program/Area Name	A brief explanation
Astronomy	Our astronomy program does not offer a degree or certificate.
Chemistry	Although few Chemistry AS degrees are awarded each year, Chemistry courses are required by students in other programs. For example, Biology majors take the full sequence of Chemistry courses, and the number of degrees and certificates awarded in the various Biological Sciences areas has increased over the past few years.
Computer Science	Most students get the AA/AS in the process of fulfilling transfer requirements for CSUEB and other 4-year colleges. Increased interest in Computer Science has translated to more Computer Science transfer students. Part time students may have lower success rates because they tend to have full-time jobs that cut into study time.
Earth and Environmental Sciences	As our programs are being launched (GEOS) or revitalized (ENSC), there is currently no data on either of these disciplines, as no students have been awarded these degrees. At present there is only an AS for ENSC, the remainder of the required degrees are set to be developed and launched to the Curriculum Committee in Spring 2025.
Engineering	Engineering has created a ladders degree/certificate structure so students can earn a 1st year, 2nd year, and 3rd year certificate before transferring to a university. Associate degrees are more challenging for engineering students to obtain because most don't or can't take additional GE requirement before transferring.
Life Sciences	Certificates are new to the discipline. We noticed a steady increase in the amount of students getting AS degrees, but the enrollment and success rates are not drastically increasing. We are unsure why there is this increase.
Math	Not sure.
MESA TRIO STEM	N/A

Physics We currently do not have Chancellor Approved Certificates in our Physics program however we are working on creating 2 new ones for the March deadline to put into effect in 2026. Our physics program serves the engineering majors and so very few students get the AST before transferring since it is not required. We have spoken with STEM counselors who have encouraged us to create more degrees and certificates.

If your program does not produce a lot of degrees or Chancellor-approved certificates, is there an associated industry test for which you are preparing students or non-Chancellor-approved certificates? If you have any data on success rates or numbers for the industry certification/test or for non-Chancellor-approved certificates, please share. (Optional)

9 Responses

Program/Area Name	A brief explanation/ Data
Astronomy	no
Chemistry	N/A
Computer Science	N/A
Earth and Environmental Sciences	Please see above.
Engineering	We would like to start offering industry level certification at Chabot through Solidworks, Autodesk, and MATLab.
Life Sciences	N/A
Math	N/A
MESA TRIO STEM	N/A
Physics	no

In your experience, what barriers to program completion may be disproportionately experienced by students from a particular demographic group (e.g., racial/ethnic, age, disability status, parents, etc.)

9 Responses

Program/Area Name	Barriers to program completion that may be disproportionately experienced by students from a particular demographic group
Astronomy	Our program is only GE courses. We do not have a full program to “complete”.
Chemistry	N/A
Computer Science	Low-income students may be hampered by the cost of laptops suitable for program development. Budget laptops lack the memory capacity and performance specs required for some assignments in CSCI 20.
Earth and Environmental Sciences	We do not know; please see above.
Engineering	Latinx students are disproportionately impacted from completing engineering program completion and transfer. Barriers include success rates in bottle neck math and science courses, varying transfer requirements, impacted transfer schools, and large number of units required.
Life Sciences	Disabled Students Programs and Services closes before our evening courses meet. Alternate testing for disabled evening students has to be scheduled for times that are not coincident with class times. It is not clear how much of a barrier this is for disabled students. However, in general, having more access to student services and campus resources in the evenings would be expected to better support the success of students taking evening courses.
Math	<p>Regardless of demographic group, students having difficulty completing math courses typically fall under these categories:</p> <ul style="list-style-type: none"> • They approach math not as a sense-making activity but as steps to memorize and complete. • They have a learned sense of helplessness such that they close up anytime anything looking unfamiliar is presented to them, instead of taking the time to understand the situation to see how it connects with what they already know. • They were not afforded the opportunity to learn math conceptually. When many concepts are at play simultaneously, they feel overwhelmed, yet there’s not enough class time to teach those concepts at a pace that suits their learning. • They need time management skills or the actual time to get studying done.

MESA TRIO
STEM

N/A

Physics

The physics and engineering program is challenging and requires many courses and many courses with prerequisites. It is a long road that can be difficult to complete if life gets in the way or if students do not have support on the homefront. The math requirements are significant and if students come from high schools that did not offer them the math support they need, starting below calculus in college can be daunting, but it is absolutely doable with all of the assistance Chabot can provide.

Responses on Equity in Access to Services

What barriers, if any, make it difficult for students (or Chabot community members) to access your service? Are there any barriers that could be disproportionately experienced by people from a particular demographic group (e.g., racial/ethnic, age, disability status, parents, etc.)

9 Responses

Program/Area Name	What barriers, if any, make it difficult for students to access your service? Are there any barriers that could be disproportionately experienced by people from a particular demographic group.
Astronomy	N/A
Chemistry	N/A
Computer Science	N/A
Earth and Environmental Sciences	N/A
Engineering	N/A
Life Sciences	N/A

Astronomy

N/A

Chemistry

N/A

Computer Science

N/A

Earth and Environmental
Sciences

N/A

Engineering

N/A

Life Sciences

N/A

Math	N/A
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MESA TRIO STEM	AB 1705 is a barrier to math success which is critical for STEM majors.
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Physics	N/A
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Can students access your services: 1) during the day or 2) in the late afternoon/evening/ weekend or 3) online? What changes would be needed to ensure access for students in all three scenarios?

9 Responses

Program/Area Name	Can students access your services: 1) during the day or 2) in the late afternoon/evening/weekend or 3) online? What changes would be needed to ensure access for students in all three scenarios?
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Astronomy	N/A
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Chemistry	N/A
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Computer Science	N/A
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Earth and Environmental Sciences	N/A
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Engineering	N/A
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Life Sciences	N/A
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Math	N/A
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MESA TRIO STEM	Access to the MESA-TRIO STEM services currently meet the needs of students. No changes are necessary.
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Physics N/A

Are there any services your area provides to students or the college for which there is a particularly long wait time? If yes, which services? What creative low-cost ideas do you have for how to decrease wait time for access to your services?

9 Responses

Program/Area Name	Are there any services your area provides to students or the college for which there is a particularly long wait time? If yes, which services? What creative low-cost ideas do you have for how to decrease wait time for access to your services?
Astronomy	N/A
Chemistry	N/A
Computer Science	N/A
Earth and Environmental Sciences	N/A
Engineering	N/A
Life Sciences	N/A
Math	N/A
MESA TRIO STEM	Not applicable
Physics	N/A

Responses on Staffing Analysis

Trends in staffing:

Program/Area Name	Full-time Faculty	Part-time Faculty	Full-time Classified Professionals	Part-time Permanent or Hourly Classified Professionals	Student Employees	9 Responses
						Independent Contractors/Professional Experts
Astronomy	2	4	1	N/A	N/A	N/A
Chemistry	6	8	1	N/A	N/A	N/A
Computer Science	2	4	N/A	N/A	N/A	N/A
Earth and Environmental Sciences	1	3	0.5	N/A	N/A	N/A
Engineering	1	7	1	N/A	0	N/A
Life Sciences	8	12	2	0	0	0
Math	13	16	N/A	N/A	N/A	N/A
MESA TRIO STEM	0.25	0	2	0	20	1
Physics	3	3	1	N/A	N/A	N/A

Compare changes over the past three years in the FTES/enrollment in your area with changes in staffing in this same time period. What do you notice?

9 Responses

Program/Area Name	Compare changes over the past three years in the FTES/enrollment in your area with changes in staffing in this same time period. What do you notice?
Astronomy	I do not see a statistically relevant correlation.
Chemistry	Our FTES is slowly increasing, yet our total number of faculty (FT and PT) has stayed the same.
Computer Science	Including part-time faculty computer science faculty have a diverse set of backgrounds. Each faculty member works hard to educate all their students, especially those students from underrepresented populations.
Earth and Environmental Sciences	As we are expanding our program and its course offerings, as well as seeing increased enrollment, we are hiring more part-time faculty to meet program needs.
Engineering	FTES is slightly increasing over the past 3 years. During the past 3 years, staffing has remained consistent. Major staffing changes took place in Summer 2024. Impacts to enrollment have yet to be seen.
Life Sciences	We have consistently increased our student contact hours per faculty over the course of the past three years. This is due to offering fewer sections of anatomy and physiology due to space constraints and canceling of sections we are unable to staff. We need more faculty to reduce over-enrollment of sections and ensure courses do not get canceled due to lack of staffing.
Math	Since both our FTES and staffing have decreased, we are doing ok, though it would be better to have more adjunct available in the pool to have better flexibility in staff assignment.
MESA TRIO STEM	N/A
Physics	I do not see a statistically significant correlation.

If you have data on the total number of students served in your area or total number of services provided, then compare changes over the past three years in students served/services provided with changes in staffing in this same time period.

What do you notice?

9 Responses

Program/Area Name	Changes comparison
Astronomy	N/A
Chemistry	N/A
Computer Science	N/A
Earth and Environmental Sciences	N/A
Engineering	N/A
Life Sciences	N/A
Math	N/A
MESA TRIO STEM	Not applicable
Physics	N/A

Compare the representation of traditionally underrepresented populations in your program's/area's staffing (faculty, classified professionals, and administrators) to the representation of those groups in the students you serve. What do you notice? If there is a gap in representation between students and the Chabot professionals who serve them, how has your program/area addressed that gap?

9 Responses

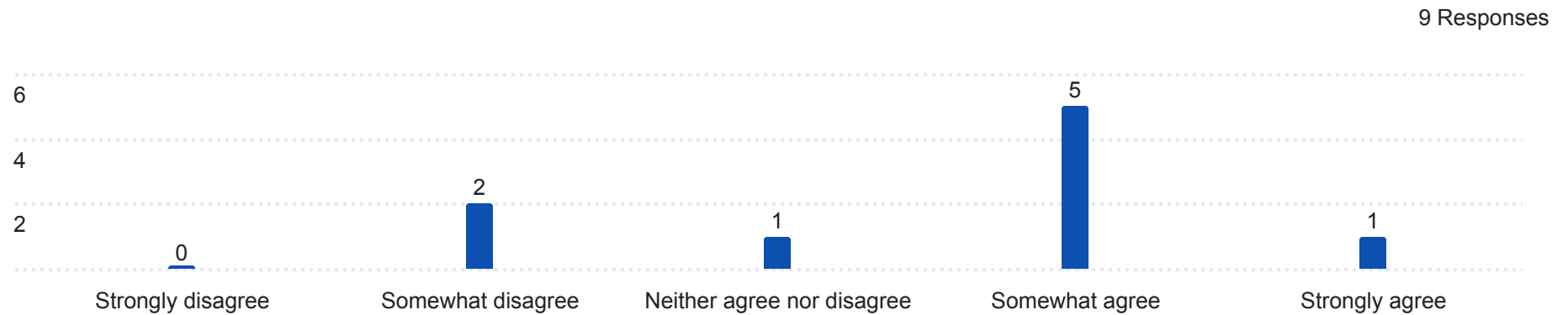
Program/Area Name	Comparison
Astronomy	There is a gap, we would like to hire more Part-time faculty to our pool. We are actively searching but there has been no qualified response to our job posting so far.
Chemistry	The representation of underrepresented populations in Chemistry's staffing is not the same as in the students we serve. This is primarily because STEM disciplines have historically had a lower percentage of underrepresented groups than the U.S. population as a whole, and particularly when compared to the students we serve. Thus the population of potential Chemistry faculty has a lower percentage of those groups. Also, since faculty remain at Chabot for many years (average 16.5 years for full-time, 10 years for part-time), the breakdown of the faculty will not change as rapidly as that of the students we serve. We have tried to address this difference by being cognizant of it during our hiring process. We also are implementing practices to increase equity in Chemistry courses, regardless of the instructor's background.
Computer Science	For the most part we have adequate computer hardware for day-to-day activities in the classroom. A lack of software on the other hand, is a recurrent issue. Student and faculty computers in some cases lack the following required tools: QtSpim, Visual Student Community, Eclipse (for CSCI 19A) and Microsoft Office (latest version).
Earth and Environmental Sciences	We do not yet have a large enough part-time faculty pool to assess overall representation of traditionally underrepresented populations in our staffing.
Engineering	There is a gap in representation between Chabot students and engineering faculty. Our area has addressed this gap by engaging and connecting with industry, conferences, seminars, tours, etc. We have also displayed a representative advertising and marketing campaign to celebrate famous scientists/engineers and their achievements.

Life Sciences	<p>Compare the representation of traditionally underrepresented populations in your program's/area's staffing (faculty, classified professionals, and administrators) to the representation of those groups in the students you serve. What do you notice? If there is a gap in representation between students and the Chabot professionals who serve them, how has your program/area addressed that gap?</p> <p>We could have a more diverse staff. We try to advertise our positions widely to ensure a large applicant pool. We have increased our diversity with our two most recent hires. Our part-time faculty are more diverse than our full-time faculty.</p>
Math	<p>While we are a Hispanic-serving institution, we only have one full-time faculty and no adjunct who is Hispanic. The STEM Center Director and a STEM Center instructional assistant are Hispanic. Still, when over 40% of Chabot students are Hispanic, we could use more Hispanic representation. We haven't had the opportunity to address the gap because we haven't been hiring, and we lost a Hispanic math full-time faculty to retirement. When hiring comes up, we make sure that we post the position widely to attract candidates. Nonetheless, when only 15% of the national STEM workforce is Latino, the recruiting pool is not broad.</p>
MESA TRIO STEM	<p>Not applicable</p>
Physics	<p>I do not see a significant gap; however, we could always build our part-time faculty pool. We are currently actively recruiting and have a job posting that is currently still available.</p>

Responses on Department/Program/Area Needs

Technology

The **technology** in our program/area is sufficient to support student learning and/or carry out our program/area outcomes and goals.



If you strongly disagree or somewhat disagree, please explain.

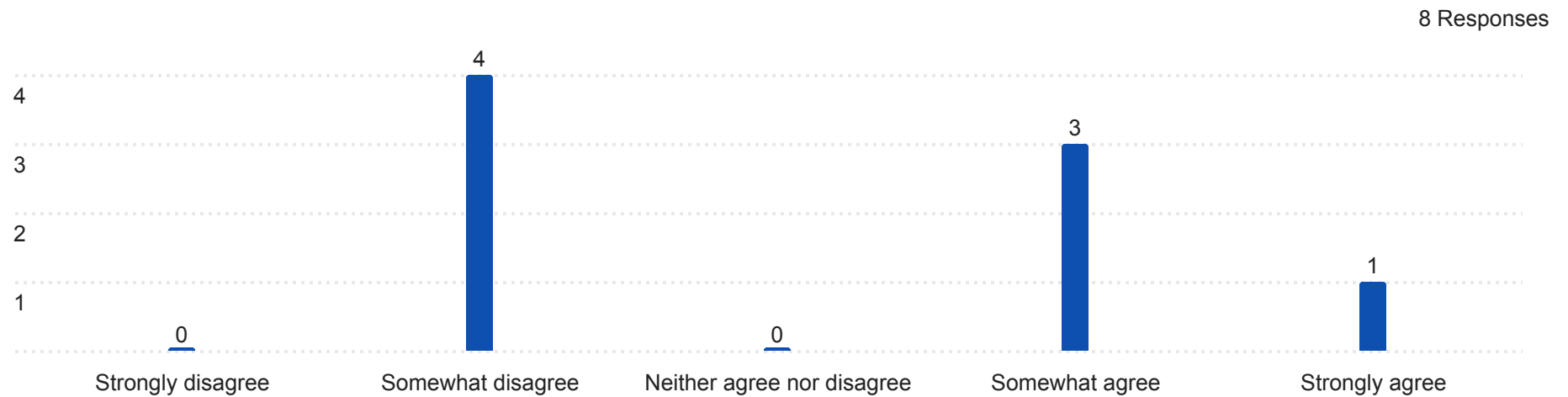
9 Responses

Program/Area Name	Explanation
Astronomy	N/A
Chemistry	N/A
Computer Science	N/A
Earth and Environmental Sciences	N/A
Engineering	Need access to wifi for equipment and regular updates to computers/software in lab.

Life Sciences	N/A
Math	N/A
MESA TRIO STEM	It would be great to have software to track student's usage of our services and requirements to meet our reporting needs.
Physics	N/A

Facilities

The **facilities** in our program/area are sufficient to support student learning and/or carry out our program/area outcomes and goals.



If you strongly disagree or somewhat disagree, please explain.

9 Responses

Program/Area Name	Explanation
Astronomy	We need a dark, elevated observing site for our astronomy lab course and for public viewing.
Chemistry	The HVAC system in the labs in building 3900 has not been sufficient on very hot or cold days to maintain comfortable temperatures in labs.
Computer Science	N/A
Earth and Environmental Sciences	N/A
Engineering	Need additional storage and lab space.

Currently awaiting more space with the new STEM Building. We currently are limited in the number of sections we can offer due to the lab spaces available. We have the demand, but not the space to add more sections.

We are still experiencing lack of progress on approval and installation of the needed ADA camera system in the cadaver lab. This was planned for in the original construction but was not completed.

Upstairs lab spaces in Building 3900 get too hot during the warm months to conduct experiments and have students wear PPE for labs. There needs to be better climate control to ensure we can keep labs at an ambient temperature.

Life Sciences

The temporary lab space for microbiology and cell biology, room 3901, has entirely inadequate climate control. This lab space regularly reaches 85°F on hot days BEFORE the students light 24 lab burners. Even on cooler days, the classroom can reach 85°F when the burners are going. Working in such a hot room while wearing appropriate protective equipment shortens student attention spans and is uncomfortable to the point of interrupting the learning process. Heat stress is a significant safety concern.

We would like to develop a biotechnology program and equip the new Phase II instrumentation lab with up-to-date equipment. The FFE funding is not likely to cover equipping the designated space in the new building.

Math	N/A
MESA TRIO STEM	N/A
Physics	N/A

Responses on Program Maps and Course Scheduling

Are your program maps accurate and up to date?

8 Responses



Does the way your required courses are scheduled generally meet the needs of the students working towards degrees or certificates in your area? In what way could your schedule better meet their needs, and what changes would be needed to ensure students access to the courses they need to complete their program?

9 Responses

Program/Area Name	Explanations
Astronomy	We do not currently offer a certificate or degree in astronomy, nor do we have a program map
Chemistry	N/A
Computer Science	Yes

Earth and Environmental Sciences	At present, yes. As we build our program with certificates and degrees (projected Spring 2025), we will need to be more strategic in offering courses. Currently, most students are taking our classes for GE and lab requirements (either with Chabot and/or transfer).
Engineering	Our students would benefit from our courses being offered every semester. Also our division needs to look at scheduling courses to avoid overlap with other courses that might be taken in the same semester/year.
Life Sciences	We need to be able to align our schedule with other disciplines to make the schedule more student friendly and allow for students to take required courses as listed on the Maps without overlaps. Much of this alignment work will need to wait until the STEM building opens.
Math	Though we are able to offer the courses students need, it is time to revisit scheduling across division to make sure that STEM students have a schedule that's supportive and not require them to be on campus for excessively long time.
MESA TRIO STEM	N/A
Physics	Yes. Scheduling changes are very challenging because we need to work with many other STEM disciplines to have courses that do not overlap and we need to work with our lab room availability. Currently, I feel that we are offering a doable schedule for our students. With more available teachers and lab space, we could offer additional sections but I wonder if those courses would fill. My main goal is to return to offering Physics 4C (soon to be Physics 7B) in both Spring and Fall semesters (but we need to build up enrollment first). We will need to change this program map soon to represent the PHYS 4ABC,5 change to PHYS 7ABCD.