

Divison: Science and Math

Name of Program/Area and Contributors

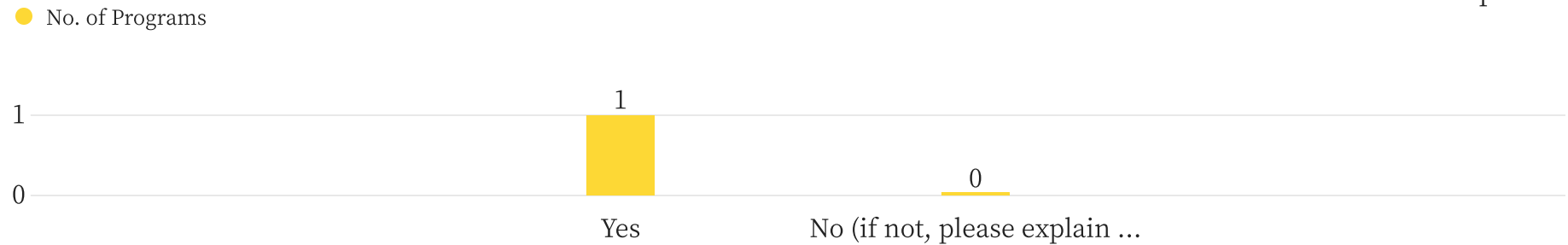
9 Responses

Program/Area Name	Name(s) of the person or people who contributed to this review:	Which PAR Template (word template) did you fill out?
Astronomy	Scott Hildreth (Shannon Lee, Steve Asztalos, Katie Berryhill are all adjunct colleagues in our discipline and were included in the discussion.)	Academic Services
Chemistry	George Arab, Donna Gibson, Wayne Pitcher, Harjot Sawhney, and Andy Wells	Academic Services
Computer Science	Jonathan Traugott, Keith Mehl, Wanda Wong	Academic Services
Engineering	Tess Weathers, Dan Quigley	Academic Services
Earth and Environmental Sciences	Jennifer Lange, Scott Hildreth	Academic Services
Life Sciences	o Jeffrey Tsao o Alexandra Dallara o Jennifer Lange o Robert Cattolica o Megan Jensen	Academic Services
Mathematics	Ming Ho	Academic Services
Physics	Scott Hildreth (with input from colleagues Shannon Lee, Steve Asztalos, Len Filane, & Nick Alexander	Academic Services
MESA and TRIO-STEM	Maria Rodriguez-Larrain and Donna Gibson	Student Services

Responses on Service Area Outcomes for Areas in Your Division

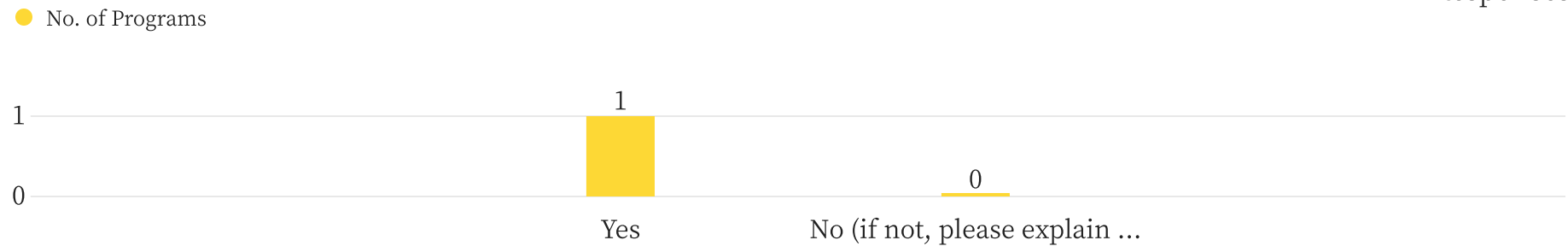
Does your service area have two or more SAOs?

1 Responses



Service areas are required to assess at least two SAOs per comprehensive PAR cycle. Were at least two of your SAOs assessed since the previous comprehensive PAR? - Selected Choice

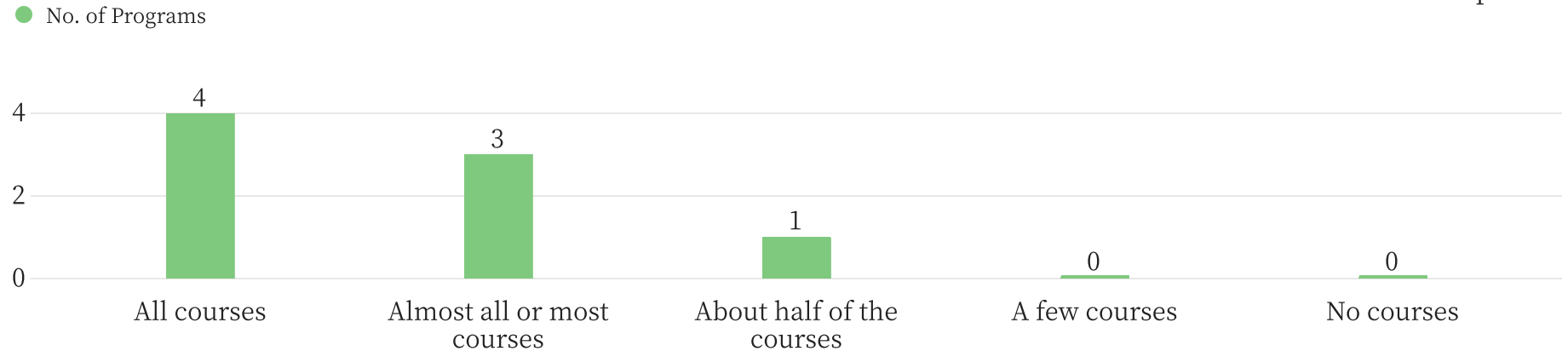
1 Responses



Responses on Student Learning Outcomes for Programs in Your Division

How many courses in your discipline had their SLOs assessed and recorded in CurricUNET in the 5-year cycle?

8 Responses



Explanations for Programs who have Unassessed Courses in Five-Year Cycle

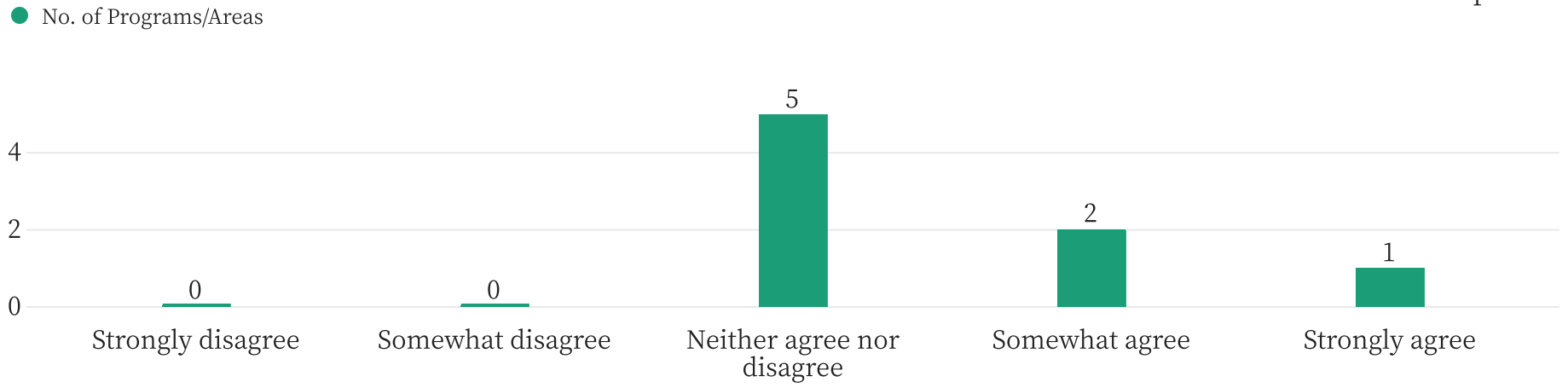
9 Responses

Program/Area Name	If any courses were not assessed in the five-year cycle, please explain why.
Astronomy	N/A
Chemistry	N/A
Computer Science	N/A
Engineering	The only courses that have not been evaluated are courses that have not yet been offered or are currently in their first semester.

Program/Area Name	If any courses were not assessed in the five-year cycle, please explain why.
Earth and Environmental Sciences	Courses that have not been assessed have not been offered or were cancelled in the semester they were scheduled to be assessed Note for: Assessing SLOs has led to improvements in my area. X N/A as we haven't been able to run the classes yet.
Life Sciences	ANAT 1 - last assessed S18 but participation was very low, maybe that's why it isn't recorded in the spreadsheet. Assessing this semester. Or, it could be because it automatically names it after the semester the SLOs were written. BIOL2 - demands from the emergency transition to online teaching took focus away from SLO assessment. BIOL25 - course was cancelled during the semester it was to be assessed. ENSC 10, 11, 12 and 15/L - there is a lack of full time faculty to develop SLO rubrics and these courses are not consistently offered to enable evaluation of SLO's. We had to cancel many of these courses due to lack of faculty.
Mathematics	N/A
Physics	We are in the process of trying to assess Physics 3A at this time. Note for Assessing SLOs has led to improvements in my area: Different faculty have (or may have) very different views on this question, and it would not be fair to characterize the discipline as having a consensus.
MESA and TRIO-STEM	N/A

Assessing SLOs has led to improvements in my area.

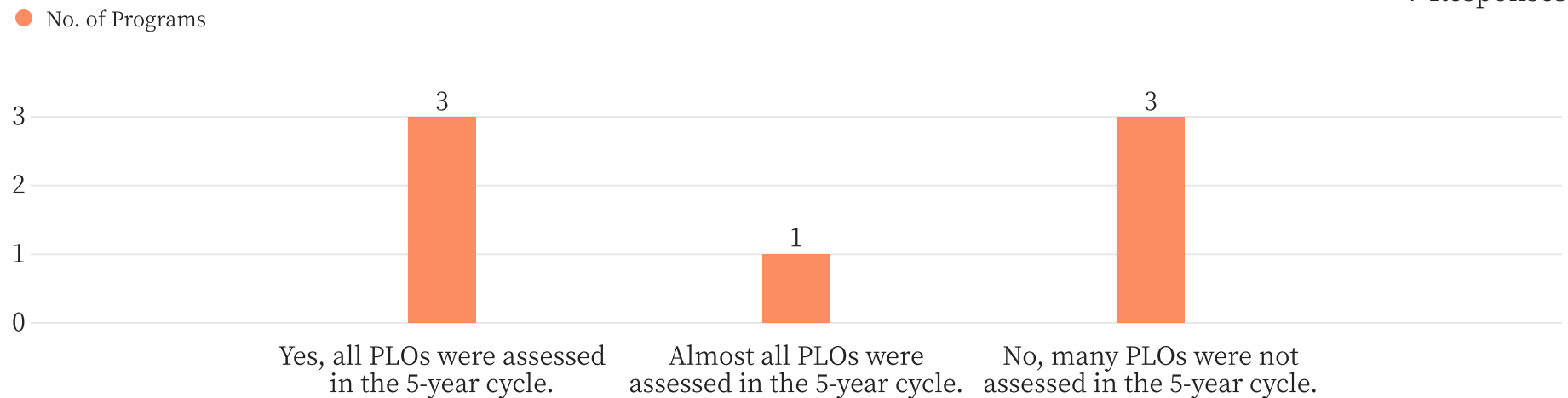
8 Responses



Responses on Program Learning Outcomes for Programs in Your Division

PLOs: Were all Program Learning Outcomes (PLOs) assessed in the 5-year cycle in CurricUNET?

7 Responses



Explanations for Programs who have Unassessed PLOs in Five-Year Cycle

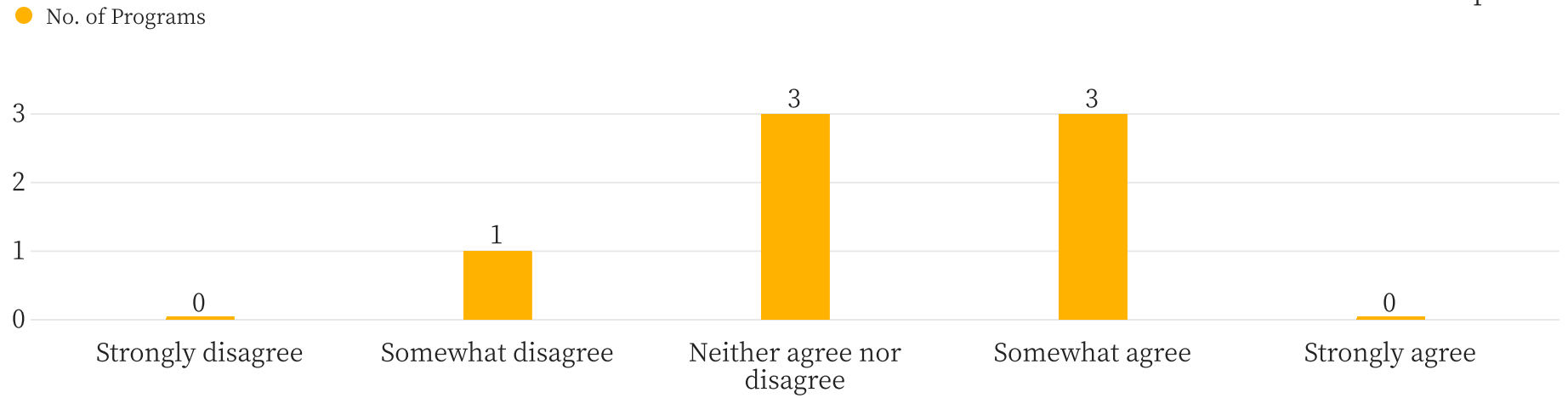
9 Responses

Program/Area Name	If any PLOs were not assessed in the five-year cycle, please explain why.
Astronomy	Astronomy is not a program per se, and we do not have PLOs. Students typically take just one course, or perhaps Astro 10 and 30, or Astro 20 and 30, but perhaps 85% of our students only take one class.
Chemistry	N/A
Computer Science	N/A
Engineering	Computational Design Certificate of Achievement is exempt from PLO Assessment because not all of the required courses for the certificate have been offered.

Program/Area Name	If any PLOs were not assessed in the five-year cycle, please explain why.
Earth and Environmental Sciences	Not all courses for the Program have been offered, so the program cannot be currently completed. Note for: Assessing PLOs has led to improvements in my area. X N/A as we haven't been able to run the classes yet.
Life Sciences	The PLOs for Environmental Science have not been assessed because not all courses in the program have been offered in the 5 year cycle due to the hold on hiring a FT faculty member for ENSC/GEOS. PLO's were not assessed in Biology (AA and AS-T) due to demands from the emergency transition to online teaching which took focus away from PLO assessment. However PLO'S will be assessed during this academic year. Please note that the individual program submission also included a graph/table that cannot be entered into Qualtrics. This can be viewed in the program's individual submission, but not in this summary report.
Mathematics	N/A
Physics	We have not been able to meet as a team to tackle these. Creation of Physics a separate program was accomplished in this past review cycle.
MESA and TRIO-STEM	N/A

Assessing PLOs has led to improvements in my area.

7 Responses



Responses on Institutional Supports and Barriers

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	Institutional Supports, Barriers and Data 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	Our two largest goals involved facilities – planning for an enhanced lab experience for our students with a rooftop observation platform and observatory, and upgrading our planetarium with an improved projection system. The Facilities and Infrastructure Technology (FIT) Committee was instrumental in supporting both goals, and active participation in that committee played a key part in our ability to meet the goals. In essence, our success reflects the need for faculty to participate actively in the shared governance processes, so that we can understand how our campus prioritizes projects, how funds are allocated to many worthy and time-critical needs, and how collaborative decisions are reached. And when opportunities for funding arise, we can act collegially and with the support of the entire team of faculty, classified professionals, and administration for our priorities.
Chemistry	Work (statistics/data) by the office of institutional research has been and will be helpful to our program.
Computer Science	_Curricunet, program mapping, Institutional Research
Engineering	Curriculum committee, CTE Pathways group, and supplies/equipment funding were very helpful in engineering. Curriculum committee was very helpful in making necessary curriculum and program changes such as adding courses, modifying courses, and creating certificates/degrees. This committee is very well structured, gives great feedback, and gives timely responses. Susan Benz and Christina Read were also instrumental in our outreach efforts and articulation agreements with PLTW courses to ENGR 10 and ENGR 11. In recent years, we have started procuring some of the necessary equipment and supplies needed to run the nine labs that we offer.

Program/ Area Name	Institutional Supports, Barriers and Data 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?
Earth and Environmental Sciences	<p>President Sperling’ s ability to prioritize faculty hiring for Environmental Sciences based upon supporting the college sustainability goals in our college mission statement was a huge positive step that led to the possibility of hiring a full-time colleague before COVID 19 hit. The support of the Science & Math division and of FIT in including spaces for an Environmental Sciences lab in Phase I construction and a geology lab in Phase II construction. The collaborative workgroup, headed by Tom deWit but including colleagues from almost every division, and across a range of disciplines, that came together to discuss the future of an Earth Science/Environmental Studies curriculum for Chabot, was also very important. Energy, enthusiasm, and leadership from student groups and the Climate Action workgroup has also been an important positive factor in helping to crystalize the need for an interdisciplinary program.</p>
Life Sciences	<p>o The President’ s support in advancing Phase 1 - 2100 Biology Annex construction goals helped us achieve our much needed improvements in safety and modernization of Biology lab facilities. o Distance learning support has helped facilitate / train everyone in the usage of Learning Management Systems and the conversion to online teaching to improve teaching for students. o The college providing technology resources have helped ensure continuity of instruction and access to low income / DI communities.</p>
Mathematics	<p>Keep up STEM Center Tutoring and LAs. MESA has been funding the VAST majority of LAs for STEM, and with this cycle possibly being the last for the MESA grant it is vital that the school institutionalize the funding to continue supporting out STEM students.</p>
Physics	<p>The Faculty Prioritization Committee did support the replacement hiring of a full-time faculty member in 2019, to help make up for the retirements of Tim Dave and Jose Alegre. We had begun the process of advertising the position and scheduling a hiring committee to review applications, when COVID-19 occurred in March 2019. Unfortunately COVID-19 hit, and from that point forward, we were left with the status quo – one full-time faculty member in Physics, and one full-time faculty member in Astronomy & Physics. We hope to have the support of the campus and the FPC for the next round of hiring for Fall 2022. The Facilities & Infrastructure Technology Committee, and the Planning and Resource Allocation Committee, helped to allocate additional monies for new lab equipment in Physics, useful for Physics 11, 3A, and 4A, and electronics kits for students to use at home for Physics 4B.</p>

Program/ Area Name	Institutional Supports, Barriers and Data 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?
MESA and TRIO- STEM	The MESA/TRIO-STEM program exists within the Science & Math division and, in collaboration with the STEM Center under Academic Pathways, provides services to STEM majors. In past instances of successful collaboration, we were able to braid funding and extend limited opportunities to larger numbers of students and intentionally and strategically supplement tutoring and academic support offerings.

What **institutional-level barrier 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 barrier or challenges prevented or hindered your program or area from reaching its PAR Goals, SLOs, PLOs, SAOs, and/or the college mission?
Astronomy	N/A – we met our goals and were not hindered or prevented by any institutional-level barriers or challenges.
Chemistry	Program review is only conducted on a discipline level. It would be helpful to have a collective program review submitted for the main 3 student groupings that chemistry classes mainly contribute to: STEM students, Allied Health students, and general education students. Another barrier that has been challenging to the chemistry program is not replacing our retired faculty member. This has been especially true during the pandemic when the work of creating all online lab activities fell only on full-time faculty members. We have trouble finding time to do all the work related to the upkeep/innovation required in all of the lecture and lab portions of our courses. In addition, there is the time required to work upkeep/organize/order the materials required for our labs.
Computer Science	None

Program/Area Name	What institutional-level barrier or challenges prevented or hindered your program or area from reaching its PAR Goals, SLOs, PLOs, SAOs, and/or the college mission?
Engineering	<p>We have not been able to achieve our goals in receiving a dedicated engineering lab assistant, gain access to adequate and necessary lab facilities, articulate engineering courses to UC' s and CSU' s, keep our technology up to date, nor use F hour funding effectively due to PAF approval process. Engineering has been asking for a dedicated or shared lab assistant since 2015. We offer nine different labs with specialized equipment for each one. Each semester we offer 7 - 8 three hour labs each week. Assuming one hour set up, one hour break down, and lab support during each three hour lab would result in 35 - 40 hours per week. Engineering course lectures also require support due to the nature of the engineering curriculum. This also does not include the maintenance and repair of equipment, supply inventory and organization, and checking out supplies and equipment to instructors and students. We have received funding for an engineering/electronics lab assistant through Strong Workforce, however, this position was against union policies and was not determined until much later after the hiring date. Since then, we have been unable to secure an engineering lab assistant position which has significantly hindered our program offering adequate labs. The engineering lab facilities at Chabot are inadequate. Aside from not being able to use necessary lab equipment due to space and power supply, there is also not enough seating for a full 24 person class, nor is there enough equipment to be used for a full 24 person class for each of the nine lab classes that we offer. The articulation officer, Shannon Stanley, has been wonderful to work with, however, the process of articulation is very burdensome in engineering. Each Chabot course needs to be articulated with every engineering discipline at every UC and CSU, as many do not use the c-id process. We also receive very little communication if programs change or we lose articulation with a course. This process should become a regular college-wide committee to keep and maintain articulated courses up to date with UC' s, CSU' s and high schools. IT does not seem to have adequate resources to maintain and update computers and software. PAF approval process is not timely and usually does not get approval until the middle of semesters. There needs to be a process for approving PAFs before a semester begins. Maintenance does not have adequate funding to maintain and keep our classes, office, and labs clean and maintained. Rooms are filled with ants/spiders along with dust and debris from use.</p>
Earth and Environmental Sciences	<p>COVID 19 and the resulting hiring freeze was the main culprit to preventing our progress.</p>

Program/Area Name	What institutional-level barrier or challenges prevented or hindered your program or area from reaching its PAR Goals, SLOs, PLOs, SAOs, and/or the college mission?
Life Sciences	<p>1. Construction of the Phase 1 building (2100 annex) - Delays has had a huge issue in scheduling resulting in an inability to provide sufficient class offerings to meet student demand. 2. Planning in Phase 2 projected and actual budgeting discrepancies- Problems in this area has delayed its advancement by half a year. 3. Discontinuity of a Science and Math Division Dean : This has resulted in communication gaps and lost productivity due to lost institutional knowledge. 4. Hiring freeze in environmental science : This has stopped ENSC SLO and PLO assessment due to lack of faculty expertise in that subject discipline. 5. Covid-19 Pandemic: This has resulted in a huge drop in our student success rates especially due to the lack of safe learning environments teaching for both students and faculty.</p>
Mathematics	<p>The Office of Academic Services needs to institutionalize noncredit programming at the college with a formal position under the Office of AS.</p>
Physics	<p>We were unable to justify hiring a Classified Professional to help with Physics, Astronomy, and Engineering labs (even part-time). And we weren' t able to add full-time faculty. Both are largely budgetary issues. Supporting adjunct colleagues who must be hired to compensate for lack of full-time faculty is doubly challenging without a lab tech position, as that requires full-time faculty to provide significant time and help with identifying, locating, and setting up lab equipment. And adjunct colleagues leading those labs share their immense frustration and not having support, support that is provided at other colleges where they work (including Las Positas).</p>
MESA and TRIO-STEM	<p>The long term strategic planning was to further strengthen collaboration and, under a guided pathways framework, implement an MTS “like” program to all students while reserving enhanced grant-funded service to our most underserved student populations. With the STEM Center being drastically cut from one full time director, one full time senior instructional assistant and one full time instructional assistant down to only one full time IA, there are now too few resources to be able to expand services without the designated grant-funded students experiencing a loss of services. There is a very large number of STEM majors at Chabot, each of whom are required to take a large number of units, all contributing significantly to multiple SCFF metrics. MTS is only able to serve approximately 125 students and without fully staffing the STEM Center, we are underserving a significant portion of our campus population.</p>

What **institutional-level supports or practices** do employees in your program/area believe are particularly **helpful to students** in reaching their educational milestones and/or goals? (i.e., from your vantage point, what does Chabot do for students that we should keep doing?)

9 Responses

Program /Area Name	What institutional-level supports or practices do employees in your program/area believe are particularly helpful to students in reaching their educational milestones and/or goals? (i.e., from your vantage point, what does Chabot do for students that we should keep doing?)
Astronomy	<p>Without any doubt, the most important institutional-level support crucial to the success of students in astronomy comes from our Counseling Faculty. Student take Astronomy largely to fulfill science course degree and transfer requirements. Typically 95% of our students are not science majors, and at least half of the students report some sort of anxiety- or outright fear - about taking a college level science class. Many students don't know that they can take an elective like astronomy P/NP and still make progress towards the degree or transfer. Many students come into our classes expecting to learn about their astrological sign, or to sit under the planetarium dome and just enjoy the view – and are totally surprised by the workload required. And at least half of our students take the classes without yet having a major in mind. All of these students are helped by our counseling colleagues, who offer guidance, realism in terms of required study hours, and options for scheduling that can help students find success.</p>
Chemistry	<p>Providing drop-in tutoring via the STEM Center has been helpful to our students.</p>
Computer Science	<p>STEM Center, MESA, student tutors, student financial aid.</p>
Engineering	<p>The MESA/TrioSTEM programs are absolutely fantastic. Not only are retention rates for MESA students exceptional, the program itself has filled many gaps we have found in Engineering. For example, as we don't have a lab assistant, MESA has been funding engineering student assistants to help fill that gap in a piecemeal capacity. These students are also able to act as tutors, which is especially helpful as we are not allotted support through Learning Connections for ENGR 43, 45, and 36. MESA/TrioSTEM also provides STEM-specific counseling, which has been critical to get the students moving effectively along the engineering pathway. The STEM Center has also been an important resource for students, especially when we are in-person. Students benefit from the study spaces, the calculators and textbook checkouts, computer access, and guest speakers and events.</p>

Program /Area Name	What institutional-level supports or practices do employees in your program/area believe are particularly helpful to students in reaching their educational milestones and/or goals? (i.e., from your vantage point, what does Chabot do for students that we should keep doing?)
Earth and Environmental Sciences	<p>While we cannot answer this yet, as no students are officially in the program, we fully expect that student clubs and collaborative workgroups will continue to be helpful for our shared students. In addition, we' ll clearly need the assistance of our Counseling Faculty to help guide students through a large variety of classes that might be available, and the assistance of our Library Faculty as well to help ensure that we offer our students a great and convenient variety of resources to use as they learn about the issues related environmental science and policy.</p>
Life Sciences	<ul style="list-style-type: none"> o Small learning communities such as MESA and FYE o Education about OER / Zero cost textbook initiatives / ensuring funding for online teaching systems such as Labster reducing costs for supplies . o The college providing technology resources have helped ensure continuity of instruction and access to low income / DI communities. o The STEM center and the Learning Connection have helped provide student study / peer support. o The student health center and the mental health counseling has helped provide support to students.
Mathematics	<p>Keep up STEM Center Tutoring and LAs. MESA has been funding the VAST majority of LAs for STEM, and with this cycle possibly being the last for the MESA grant it is vital that the school institutionalize the funding to continue supporting out STEM students</p>
Physics	<p>MESA/TRIO grant support, Student Club support, Tutoring at the STEM Center, and faculty office hours in the STEM center, are supporting practices absolutely crucial to student success in Physics and Engineering. The directed outreach by Maria Rodriguez-Larrain and her MESA/TRIO team has been instrumental in helping many of our engineering students who are required to take physics. Student Clubs in Engineering and Robotics are “co-sponsored” by faculty in Engineering and Physics, and use the Physics lab facilities, and equipment, and have encouraged students to network and discuss HW and problems with one another. Collaboration with Engineering Faculty (Dr. Tess Weathers and Dan Quigley) involved with the student clubs is another key component to the success of our shared students. Tutoring remains one of the most requested support resources for students in Physics 4ABC – and one of the most difficult to meet, given that students with that course experience typically transfer away from Chabot. Additional time in the STEM center by faculty definitely improves student access to help.</p>

Program /Area Name What institutional-level supports or practices do employees in your program/area believe are particularly helpful to students in reaching their educational milestones and/or goals? (i.e., from your vantage point, what does Chabot do for students that we should keep doing?)

MESA and TRIO-STEM
 The MTS program is highly successful and our assessment of that success points to several established high impact practices including our high touch model of intrusive intervention. This is centered around a collaboration between the MTS director, academic faculty, and specialized counseling faculty. This model allows for comprehensive advising coupled with academic supports and enhanced by non-cognitive skill development and career/transfer exploration. Students meet individually with the director, assigned faculty in their major, and their counselor while the MTS team is able to collaborate to develop a better understanding of student issues and then able to design a multifaceted response. We reach out to students who are struggling early in the semester, students who are registering for classes off track from their SEP, students who didn't register, students whose cumulative GPA has fallen, students whose single semester GPA has fallen. We streamline communication to them regarding campus services, basic needs support, financial aid support, scholarships, internships, club participation, extra curricular opportunities, on-campus jobs, registration/graduation/transfer deadlines, and wellness services.

What **institutional-level barriers or challenges** do employees in your program/area believe are a **hindrance to students** in reaching their educational milestones and/or goals? (i.e., from your vantage point, what does Chabot do that we should stop doing or change to better support our students?)

9 Responses

Program /Area Name What institutional-level barriers or challenges do employees in your program/area believe are a hindrance to students in reaching their educational milestones and/or goals? (i.e., from your vantage point, what does Chabot do that we should stop doing or change to better support our students?)

Astronomy
 In light of the answer above, even more access to counseling colleague assistance (either through virtual Q&A or easy drop-in appointments), especially in the first few weeks of a course before the P/NP election deadline, would be beneficial.

Chemistry
 N/A

Program /Area Name What institutional-level barriers or challenges do employees in your program/area believe are a hindrance to students in reaching their educational milestones and/or goals? (i.e., from your vantage point, what does Chabot do that we should stop doing or change to better support our students?)

Computer Science More emphasis on addressing academic dishonesty e.g. via Chegg and other online help sites.

Engineering Many students have expressed frustration through the counseling program. Whether it's the inability for students to get timely appointments, or the counseling staff's lack of knowledge regarding STEM courses (specifically, the new engineering courses and certificates) students are often coming to the faculty to help them plan and research their learning plans. Engineering and Counseling need to develop a better relationship wherein Counseling is able to stay informed of the new opportunities in Engineering. In general, our students would benefit with increased STEM-specific tutors as are supported through MESA/TrioSTEM.

Earth and Environmental Sciences To be successful with a comprehensive and effective Earth Sciences/Environmental Studies program,, we'll need to think outside of our traditional discipline boxes and division silos. Much of the science curriculum we will start with was developed by Deborah Howell, who has retired. We need to actively look across the division of science and math to create new ties and reinforce math and science skills needed. Our colleague in Geography, Suzanne Maher, has created strong curriculum offerings in Environmental Studies that already includes climate science. We need to complement that work, not replace it. We have colleagues at Las Positas College (including Ruth Hanna) who have created tremendous offerings in Geology that Chabot students might also enjoy. We have new "Climate Fellows" joining Chabot and LPC to help us explore issues holistically. We do not lack for talent and energy and opportunity!

Life Sciences

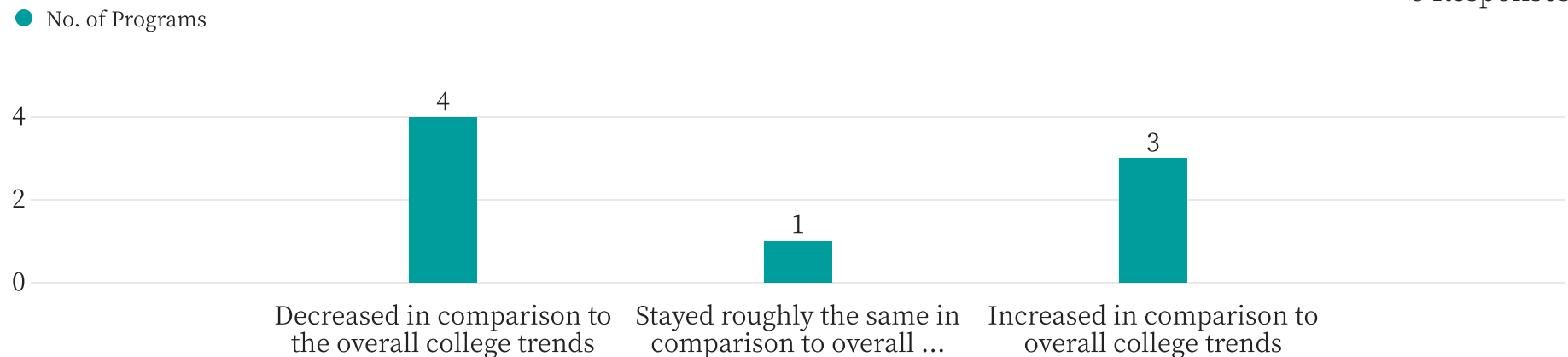
- o Lack of pre-Health Science dedicated counselors: Help is needed to direct students into the best pathway for their education/career goals.
- o Scheduling restrictions : There is a difficulty in providing a variety of time offerings due to space and staffing limitations.
- o Lack of night tutoring and student services : This makes it difficult for our night students to feel included as part of the learning community and access aid when needed.
- o Early intervention : Faculty need more ways to quickly identify specific needs of students and target them to services.
- o Pathways: We need to provide a clear pathway through various programs or degree offerings so that students choose the right courses early on so as not to take too much time exploring.
- o Representation and Identity : There is an inability to allow students to use preferred names on Canvas for peer interactions.

Program /Area Name	What institutional-level barriers or challenges do employees in your program/area believe are a hindrance to students in reaching their educational milestones and/or goals? (i.e., from your vantage point, what does Chabot do that we should stop doing or change to better support our students?)
Mathematics	More convenient ways for faculty to forward notifications and flyers to students. Instead of all the information in the e-mail sent out college-wide, first design the announcement or page in Canvas. If image is provided, fill in the ALT-text. Then all we have to do is download from the Commons to send to students, rather than having to do the information transfer ourselves. Canvas Student Hub to record these resource availability Lack of reassigned time for faculty who coordinate tutoring, like WRAC and discipline specific tutor training and interviewing.
Physics	We have to change our hiring practices so that we can anticipate staffing needs earlier, and invest in hiring colleagues prior to the retirement of experienced faculty. Waiting a year – or now two – after our best and brightest colleagues have left to hire means we lose the knowledge of the program, the students, the material, and the entire sense of how our discipline fits into the greater fabric of the campus. Even allowing for a one-semester (or better, one-year) overlap will give us much better continuity. We can share labs that work, and help new full-time faculty at the start of the tenure process with multiple views.
MESA and TRIO- STEM	Our technology when it comes to student communication is an issue with wide reaching impact. I have never had a student recite their zonemail email address to me from memory. We give them terrible email naming conventions and then wonder why they never use it. A college email address is something you should be proud of, something you feel confident using applying for a job and using for other professional exchanges. Additionally, we need a student announcement system. A technological solution to avoid mass emails or a more functional method for when we resort to mass emails. A daily digest where all faculty and staff can submit announcements and have them sent out together either to all students, all staff/faculty, or both. A live updating calendar embedded in canvas for all students with specific ‘follow’ or ‘subscription’ features to allow students to select their pathway, club, affinity group, or hobby that they would additionally want to have embedded in their calendar. A calendar where staff/faculty could EASILY post events and how to sign up.

Questions Related to FTES, Enrollment, and Productivity

Over the past 3 years, in comparison to the overall FTES trends of the college, FTES in your discipline have:

8 Responses



Please review the courses in your discipline in the Chabot College Enrollment Management Data Dashboard: 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/Area Name	Response
Astronomy	As noted above, enrollments impact our funding. Please review the courses in your discipline in the Chabot College Enrollment Management Data Dashboard: are there specific courses/sections that, on average, across the past three years did not fill to capacity? Why might this be? Fill rates in Astro are very high, and continue to be so. The program overall averages 89% fill, including summers which bring the average down. The Astro 30 lab is routinely at 100%+, Astro 10 at 90-95%, and Astro 20 at 90%. Online options – for which we typically offered two each term prior to COVID, and hopefully will continue to do so – always show an even higher fill rate.

Program/Area Name	As noted above, enrollments impact our funding. Please review the courses in your discipline in the Chabot College Enrollment Management Data Dashboard: are there specific courses/sections that, on average, across the past three years did not fill to capacity? Why might this be?
Chemistry	On average our courses fill to capacity or are filled over capacity. There are some exceptions on the section level. This seems to be dependent on the instructor: typically our full-time faculty have fill rates at or above 100% and some of our part-time faculty have sections that are below 100%. We do note that the Enrollment Management Data Dashboard does not present the requested information in an easy-to-use manner. It would be easier if the data were sortable by semester, and not by section. We do not always have the same instructors teaching the same sections semester after semester.
Computer Science	Enrollment in CSCI 10 is weak due to increased student focus on meeting transfer requirements. By comparison enrollments in transfer courses CSCI 15, 20, 21 is strong.
Engineering	There are 3 courses that do not fill to capacity: ENGR 36, 43, and 45. These courses are the most advanced engineering courses we offer (they require the most pre-requisites), thus the student body that is eligible to take these classes is much smaller than for other engineering courses. These courses are capstone classes that should be offered both Fall and Spring, even if they are low enrolled because they are required for transfer, and are often taken in the students' last year at Chabot. If we only offer one section a year, we will be above capacity for that one semester, meaning, we will have to turn students away as a result of lab capacity (both equipment ,physical space and the lack of a dedicated lab technician). This may result in students delaying transfer for another year, or they may take the class elsewhere.
Earth and Environmental Sciences	The non-lab based courses tend not to fill, which is why we stopped offering them.
Life Sciences	ENSC lecture only courses occasionally do not fill due to inconsistent offering due to lack of FT instructors. Counselors are unable to direct students into the Environmental Science program due to this uncertainty. The lack of Geology at Chabot College means that students are not likely to major in ENSC since the program cannot be completed at Chabot. Biology 80 - public health, is a relatively new course, so early semester data has pulled the average down. However, it is now consistently filling and is very popular. Please note that the individual program submission also included a graph/table that cannot be entered into Qualtrics. This can be viewed in the program's individual submission, but not in this summary report.

Program/Area Name	As noted above, enrollments impact our funding. Please review the courses in your discipline in the Chabot College Enrollment Management Data Dashboard: are there specific courses/sections that, on average, across the past three years did not fill to capacity? Why might this be?
Mathematics	Fast Track courses 36-20 or 20-1 tend to be under-enrolled because not as many students are willing to commit to 8-10 units of math in one semester. However, those who do and succeed shave off a semester of waiting to begin STEM courses.
Physics	<p>Physics 3A offered only in Fall at two times: (daytime) ~ 90% fill (evening) ~ 115% fill Physics 3B offered only in Spring at two times: (daytime) ~ 96% fill (evening) ~ 104% fill The second term always decreases but these fill rates are very strong. 85% fill Physics 4A offered both Fall and Spring, at two different times offered during the day: ~ 106% fill Physics 4B offered both Fall and Spring, at two different times: ~ 111% fill Physics 4C offered only in Spring: ~ The third term of physics is not required for all majors, and because of attrition, doesn't typically fill to capacity. We intentionally cut out the historically lower-enrolled Fall section of Physics 4C in 2019, and have offered only a single 4C section in Spring for the past 3 years. Physics 5 (only offered in Spring): ~ 50% fill This is the last class in the sequence, and it is required for Physics majors, but not for others. While it is accepted for transfer to San Jose State University, and to UC Berkeley, not all STEM students need to take this class, and many engineering students do not have time in their final semester for an additional physics elective. We have converted this class to fully online (synchronous in 2020 through ZOOM) and hope that the flexibility offered by this delivery mode might help to maintain enrollment. Physics 11 (offered both semesters and summer): ~ 110% fill Physics 18 (offered both semesters and now in summers): 80% overall; 90% fill in Fall/Spring, and 63% in summer We had to add Physics 18 as a prerequisite for Physics 4A to allow engineering students the opportunity to transfer to UC Berkeley. We hope to establish that Physics 18 is the best option for most students to take in preparation for the 4ABC sequence.</p>
MESA and TRIO-STEM	N/A

Is there anything faculty in your area would consider doing to improve overall discipline productivity while maintaining our commitment to student learning?

9 Responses

Program/Area
Name

Is there anything faculty in your area would consider doing to improve overall discipline productivity while maintaining our commitment to student learning?

Astronomy

Hiring an additional full-time colleague, and hiring a classified professional to help with the lab, would improve our unit's productivity, without question. A case in point: We have tried for 3 years to get a new class, Astro 45, which might serve even more of our students hoping for just an AA or AS degree, and not thinking about transfer to UC or CSU. But launching a new class, working with Counseling faculty to promote the offering and clarify what sorts of students might benefit most, developing the curriculum and SLOs and schedules, all take time and are tasks that full-time faculty can do, but also things that adjunct colleagues might not be able to do. We've been very, very fortunate to have an adjunct colleague, Shannon Lee, willing to help, but even with her significant contributions and immense investment in time for our program, it is just not reasonable to expect the same results that a full-time colleague might be able to foster. Similarly, we surely could support two, and probably justify a third Astro lab to serve students wishing for that elusive one unit of science laboratory classwork required for CSU and UC transfer. But without a lab tech, it is almost impossible to ask an adjunct colleague to teach an evening lab without more support. Productivity, as measured by WSCH/FTEF, is one rational metric to use in evaluating our program, but it is a dangerous one to hold up as effectively capturing what a program "costs" in terms of people. Lab classes take enormous time in preparation for classes, and clean up – but those hours do not show up in WSCH/FTEF. Indeed, just the opposite happens – lab classes necessarily are kept smaller because of safety and equipment constraints, and so they pull down the overall subdivision numbers. Including lab data in those numbers as a measure of a program's "productivity" misses how much time and effort is required to run the program at all. And even though the Astro 30 lab has high fill rates, it shows a 466 WSCH/FTEF. To say that this means we are not as productive with the class is terribly frustrating, and honestly quite unfair. (Apologies for the soapbox diatribe).

Chemistry

We already take additional students in most sections. Hiring a new full-time instructor (see request below) will help improve the quality of our instruction. Expanding our pool of part-time faculty will also be helpful.

Computer
Science

Offer a second section of CSCI 20 in fall, since the demand is there.

Program/Area Name	Is there anything faculty in your area would consider doing to improve overall discipline productivity while maintaining our commitment to student learning?
Engineering	<p>Engineering is willing to change its scheduling habits for low enrolled courses from a once per semester basis to a once per year basis. This can be accomplished by scheduling ENGR 36, ENGR 43, and ENGR 45 as hybrid where lectures are online and labs are in person. Due to the number of students needing these classes in their last year before transfer, the college may need to add two lab sections with one large lecture course for each of these courses. If we were to implement the following scheduling, it will save the college approximately 0.5 - 1 FTEF. Assuming the same number of students annually in each course should increase our average WSCH/FTEF by 41 - 117. This range depends on if an additional lab section is added or not. We will need to work with other disciplines and counseling to announce and advertise these changes before they are implemented. We are also willing to add additional students to courses that are waitlisted. The table below summarizes what we currently offer and when, compared to a schedule with once/year double-lab sections of 36, 43, and 45.</p>
Earth and Environmental Sciences	N/A
Life Sciences	<p>We will continue to offer double sections in general education courses. With more lab spaces from new construction, faculty may propose the development of new general education courses that can follow the double section system which has higher productivity. We can analyze our program offerings to determine if units can be reduced in our larger unit courses to improve productivity. It may be possible to offer more support courses to allow for this change in programs.</p>
Mathematics	<p>Our faculty have always been taking additional students beyond our class size. We offer our courses over a variety of days/times already.</p>

Program/Area Name Is there anything faculty in your area would consider doing to improve overall discipline productivity while maintaining our commitment to student learning?

Physics Physics classes with labs necessarily are limited in size because of safety, equipment, and room sizes, and consequently WSCH/FTEF values typically are <400. This should not be seen as a mark of “low productivity” . Labs take time to set up and clean up; ordering, storing, and maintaining lab equipment takes time. And that time is not captured in the WSCH/FTEF metric. In addition, students routinely may spend more time in physics labs after class hours, under the direction of willing faculty – and those hours are also not caught. Instead, “productivity” for science lab classes should be evaluated using a different metric, one more related to overall student retention and success. If we truly are productive in lab classes, it is because we have helped students to understand how science works, to develop organization and collaborative skills working with classmates, to hone presentation skills, and ultimately, to find success with the course materials overall. If we try to make labs larger, and have more students per lab section, we would need much larger lab spaces, more equipment and a full-time lab tech.

MESA and TRIO-STEM N/A

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 The online sections always fill, and often do have a wait list. The Astro 30 lab often has a small waitlist – more when we can only offer a single section because of staffing constraints.

Chemistry YES! All of them: Chem 1A, Chem 1B, Chem 10, Chem 12A, Chem 12B, Chem 30A, Chem 30B, Chem 31.

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.
Computer Science	Sections of CSCI 7, CSCI 14 , CSCI 15 and CSCI 20 tend to fill to capacity.
Engineeri ng	Yes, typically we see ENGR 10 (two sections), ENGR 11, ENGR 22, and ENGR 25 fill to capacity with a small waitlist each semester. We also offer ENGR 10, ENGR 22, and ENGR 25 courses during the summer session and we plan to offer ENGR 11 as well. ENGR 10: Introduction to Engineering ENGR 11: Engineering Design and Analysis ENGR 22: Engineering Design Graphics ENGR 25: Computational Methods for Engineers and Scientists
Earth and Environm ental Sciences	N/A
Life Sciences	Anatomy 1, Biology 6, Biology 4, Biology 2, Biology 10, Biology 31, Microbiology 1, Physiology 1
Mathemat ics	The answer to this question should be institutionalized in an enrollment report that automatically identifies sections that have been filled to capacity and with a waitlist. It is inefficient for each area to do the same work separately. Also, the waitlist data in CLASS-Web gets zeroed out, so we can't get that information now by looking at previous terms. Our upper level MTH 3, 4, 6, 8 courses are often in the worst-of-both-worlds situation. They are major courses for transfer in Math and many STEM fields. MTH 3, 4, and 6 are also corequisites to Physics courses for STEM majors, so enough sections must be offered each semester so students can progress. The enrollment easily fills one section but may look bad split among two sections. People who don't know the program think we have a problem filling sections, but those sections are the solution to ensure that students get the classes they need to progress in course sequence, resulting in our STEM students being able to transfer or graduate
Physics	Our largest enrollment challenges with classes that reach capacity come from the scheduling of single sections of Physics 4C in Spring only, and limiting sections of Physics 3A or 4A at the start of those course sequences. We have had enrollment demands for 4C of 30-35 students – more than a single section, but not quite justifying a separate second section.

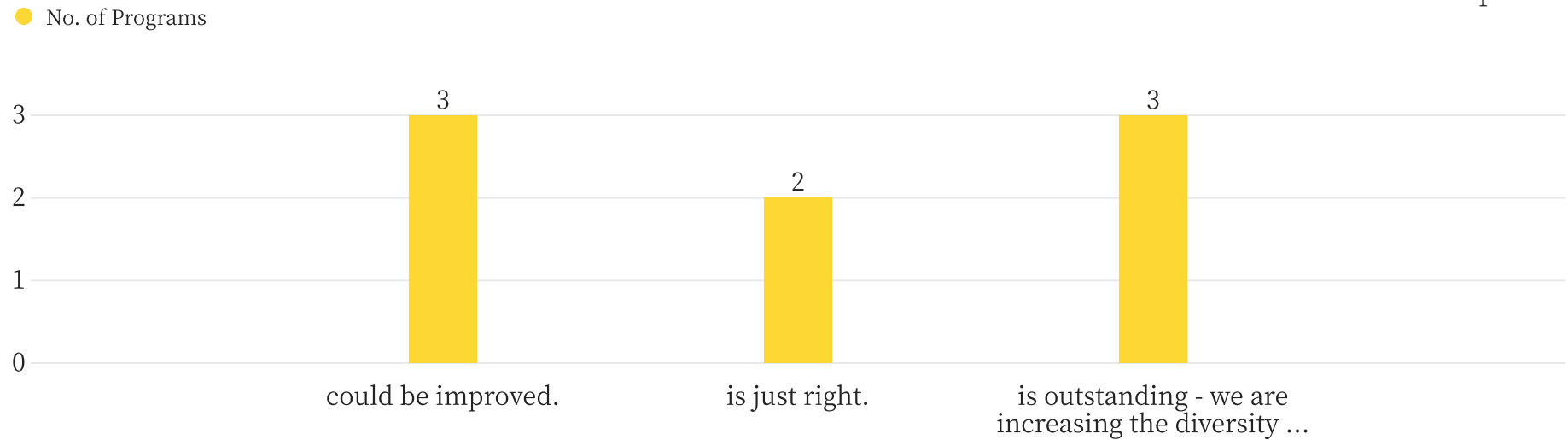
Program/
Area
Name Are there any classes in your discipline which routinely fill to capacity and for which there is often a waitlist? If yes,
please list here.

MESA and
TRIO- N/A
STEM

Questions Related to Enrollment Disaggregation and Representation

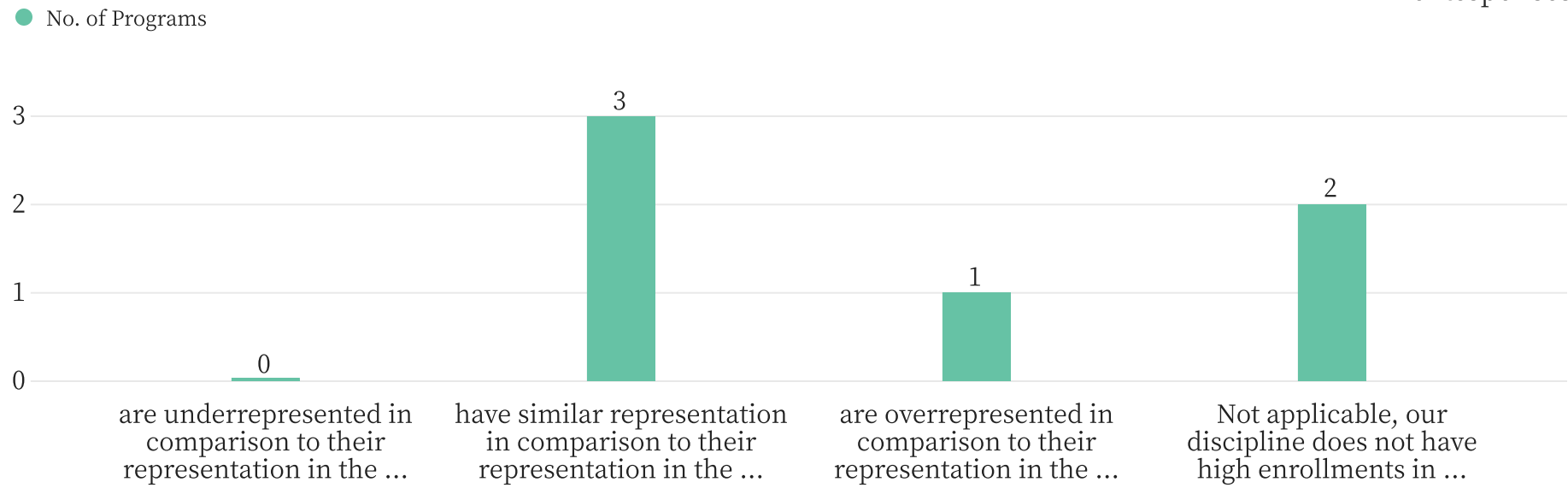
Enrollment Disaggregation: The representation of traditionally underrepresented race/ethnicity/gender student groups in our discipline/major compared to our industry/field:

8 Responses



For 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/disproportionately impacted groups (DI Groups) in your general education classes to the overall student body population. DI Groups in our general education classes:

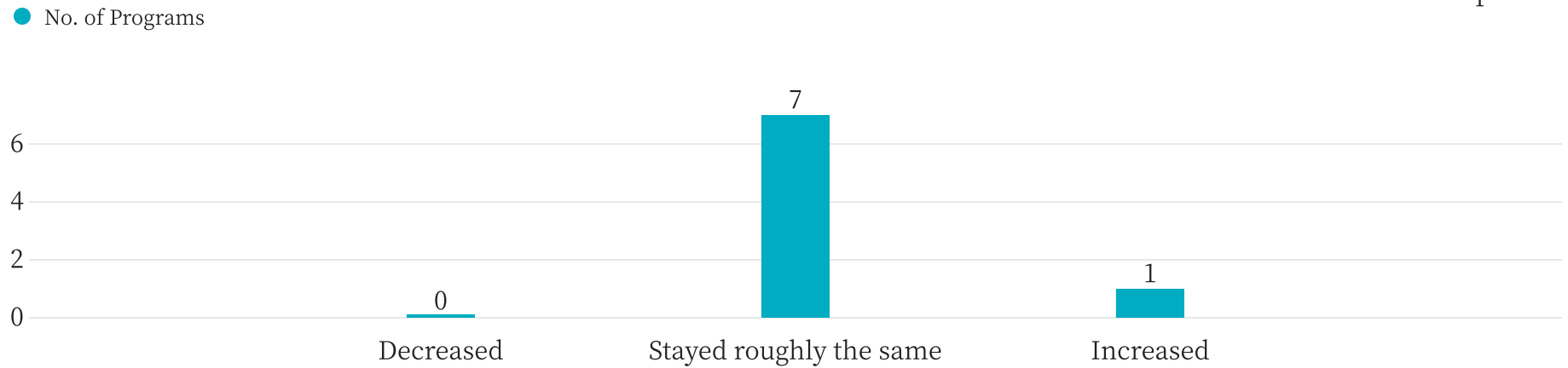
6 Responses



Questions Related to Course Success Rates and Disproportionate Impact

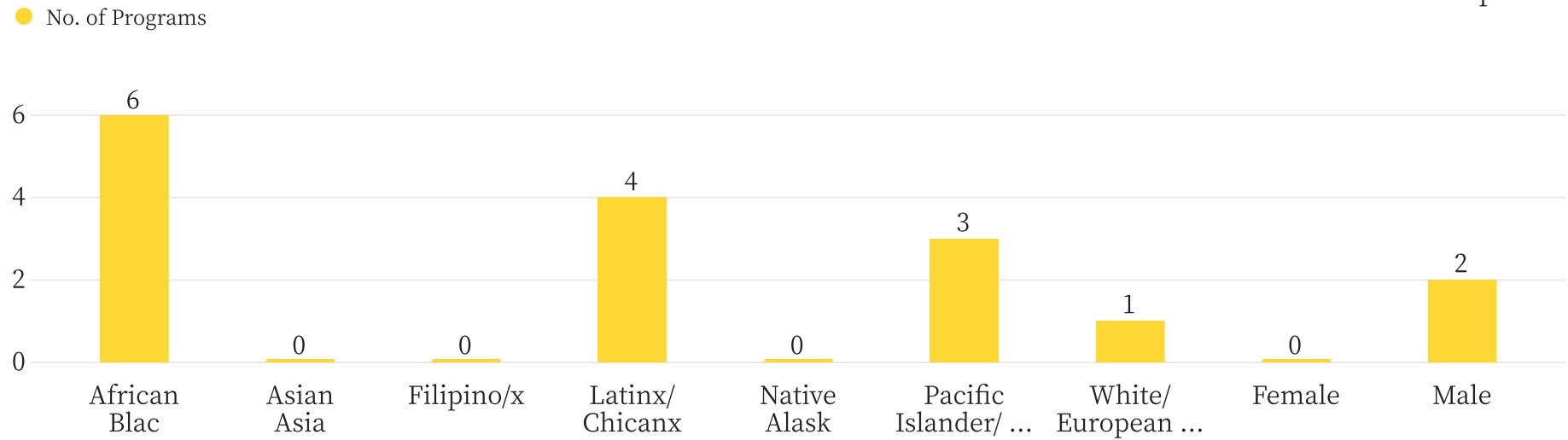
Course Success Rates: Over the past three years, how have course success rates in your discipline changed? Course success rates have:

8 Responses



Check all groups that are disproportionately impacted (succeeding at lower rates than students from other racial/ethnic, gender groups, or the overall college average):

6 Responses



Please provide a brief explanation that would help the college understand the trends in overall course success rates or disproportionate impacts in course success rates for any student group

9 Responses

Astronomy
African American / Black

Success rates in astronomy are 5-8% lower than college averages, and corresponding non-success and withdrawal rates are higher. This is not new – we’ve seen similar data over the past 20+ years of program reviews. Astronomy is not an easy subject, and it is often taken by students new to college, who are surprised by the level of reading and scholarship required for success. Success rates for African-American/Black students in Astronomy are historically significantly under the college average, and this, too, is a trend we’ve seen for many years, and one that is mirrored across the country, at all levels of higher education. According to the American Institute of Physics, and its August 2019 focus on “African-American Participation and Bachelors in the Physical Science and Engineering” (<https://www.aip.org/statistics/reports/african-american-participation-among-bachelors-physical-sciences>) with included data from 2005-2015, African-Americans remain underrepresented in the physical sciences and engineering fields. We should capitalize on Chabot’s recent efforts to support student success, especially within the African-American/Black community, with the Black Excellence 10x10 Villages projects, and reach out to the Umoja team as well, to improve our understanding of the types and levels of support services we might encourage, and amplify, for our Black students. Chabot’s data shows large jumps in success for African-American/Black students between different years and semesters, but given the very small number of students, that data’s volatility reflects very small population sizes. One idea to help identify whether the lower success rates reflect the discipline or the students would be to look at similar GE-level introductory science classes offered at Chabot. Geography, like Astronomy, is taken by students seeking science credit for AA/AS and transfer, and provides a direct comparison. Similar to Astro, African-American/Black students seem to struggle in Geography more than other populations. Based on the similarities in Astronomy and Geography, and the national trends shared in the AIP report, we do not see the continued greater lack of success in astronomy as something unique to Chabot – but it still is very troubling, and something we want to continue to attack. Faculty are actively trying to find creative ways to build relevance through identification of role models and increasing visibility of African-American astronomers – and graduate students on their way. We hope that the new Astronomy 45 class, with its increased focus on current news and media, might be one way to attract and retain students currently under-represented in science, and further improve student success for all groups. Please note that the individual program submission also included a graph/table that cannot be entered into Qualtrics. This can be viewed in the program's individual submission, but not in this summary report.

Chemistry	African American / Black, Latinx/ Chicax	<p>First, although the dashboard allows us to disaggregate our success rates by ethnic groups, the number of students we have from several ethnic groups is too small for the data to appear in the dashboard. This is especially true at the course level, which is where the data would be the most useful! Overall, our students succeed at rates similar to the overall college success rates, with one exception. Some ethnic groups have slightly higher success rates than the college (White, Asian American, Filipina/Filipino) and some have slightly lower success rates (Latina/Latino). It is among our African American students that we recently have had a much lower success rate than the college as a whole. Until the Spring 2021 semester our success rates among African American students was almost identical to the college success rates. However, our success rate among African American students dropped to 51% in Spring 2021, compared to 63% for the college. Unfortunately, it is difficult to determine which Chemistry courses are most affected, since the number of African American students in a given course is often below the level at which the dashboard provides data. That said, we have taken note that our success rates among African American and Latina/Latino students are lower than for other ethnic groups. This is an area of ongoing concern and work. Historically, STEM fields have not had great diversity, and many students from DI groups are discouraged by outside forces from entering STEM. We will continue to work on increasing both enrollments and success among these groups. This will be accomplished with continuous partnership with UMOJA and Puente programs, incorporating embedding tutors into our gateway courses.</p>
Computer Science	African American / Black, Latinx/ Chicax, Male	<p>We don't have one picture that explains the disproportionate outcomes. Different factors may be at play for different populations and different individuals.</p>

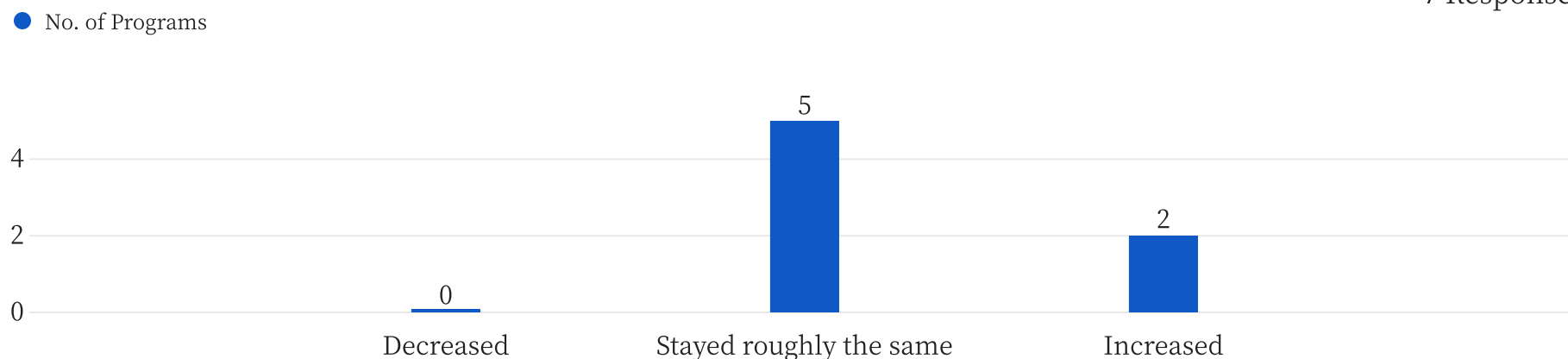
Engineering	African American / Black, Pacific Islander/ Hawaiian, White/ European American, Male	<p>Overall Success: Our Non-Success rates have actually decreased over the last three years, however Withdrawal rates have increased since Spring 2020, likely due to the impact of COVID-19. African American/Black: Unfortunately, we have very low enrollments in this population, with only 4 semesters that had more than 10 students. This small sample size makes the data very volatile and difficult to assess with accuracy. A clear solution would be to recruit more African American/Black students into engineering in the first place. White: Over the last three years, Engineering has had an average of 11.9% white students (ranging from 15-35 students). The campus average is 13.4% white. This is the second-smallest Racial-Ethnic group (behind African American/Black), and thus may suffer from the same small-sample size volatilities. Male: Most of our students are male (~80%) so most non-success in engineering will be a part of the male population (compared to college-wide data) Pacific Islander: There is no information for success rates in Engineering for Pacific Islander/Hawaiian population as enrollment is consistently at 1 or 2 students.</p>
Earth and Environmental Sciences	N/A	<p>Note for previous section: Over the next 3 years, non-credit course offerings in our program/area are planned to: x Stay the same as they are now This could be an area we look at in the future, since many interdisciplinary lecture topics could be of interest to the general public, to people in the community who already have degrees, and to local middle and high-school students. (Comment/Explain) Please provide a brief explanation that would help the college understand the trends in overall course success rates or disproportionate impacts in course success rates for any student group: Success rates for existing Environmental Science courses have varied wildly - with different courses and different instructors each semester. Leading courses online only through COVID also affects student success.</p>
Life Sciences	African American / Black, Latinx/ Chicanx, Pacific Islander/ Hawaiian	<p>Course success rates in anatomy have been trending downward with changes in the minimum science GPA required by nursing programs. About 1/3-1/2 of students earning a C at the W deadline drop the class because they need at least a B for nursing applications. Many students report having to take on increased work hours due to other family members losing jobs during Covid-19. Students also were overburdened due to the stress of shelter in place, lack of traditional structure that was previously found in learning on campus through traditional face to face meetings. Outside of school student responsibilities increased during covid-19 resulting in decreased time for focusing on their studies. Please note that the individual program submission also included a graph/table that cannot be entered into Qualtrics. This can be viewed in the program's individual submission, but not in this summary report.</p>

Mathematics	African American / Black, Latinx/ Chicanx, Pacific Islander/ Hawaiian	There is a huge jump in PI group! More women in GE courses (MTH 41 and 47) but more men in precalc/calc1 (MTH 20/31/1/15). Even fewer women in upper level courses (MTH 2, 3, 4, 6, 8), outnumbered almost 2 to 1. There is a huge jump in PI group success rate from Fa20 to Sp21!
Physics	N/A	Refer to the Chabot College Course Enrollments and Success Rates Dashboard. Given the challenges posed by COVID-induced online instruction, to maintain 75-80% success in Physics is a remarkable achievement. (Comment/Explain) Please provide a brief explanation that would help the college understand the trends in overall course success rates or disproportionate impacts in course success rates for any student group: Looking at success by ethnicity data, the data is not sufficient to create any significant comparisons – there are no trends to pick out. Trends in success by gender equally is too difficult to judge with such small numbers – perhaps 3-4 women in Physics 4A/B/C per class. We need to pay close attention to the success of all of our students, and constantly ask what services and tools might be used to help – whether that is from MESA/TRIO, student clubs, tutoring, increased access to office hours, remediation, instructional assistants, or some other means. We should capitalize on Chabot’s recent efforts to support student success, especially within the African-American/Black community, with the Black Excellence 10x10 Villages projects, and reach out to the Umoja team as well, to improve our understanding of the types and levels of support services we might encourage, and amplify, for our Black students. Please note that the individual program submission also included a graph/table that cannot be entered into Qualtrics. This can be viewed in the program's individual submission, but not in this summary report.
MESA and TRIO-STEM	N/A	N/A

Questions Related to Program Completion and Barriers to Program Completion

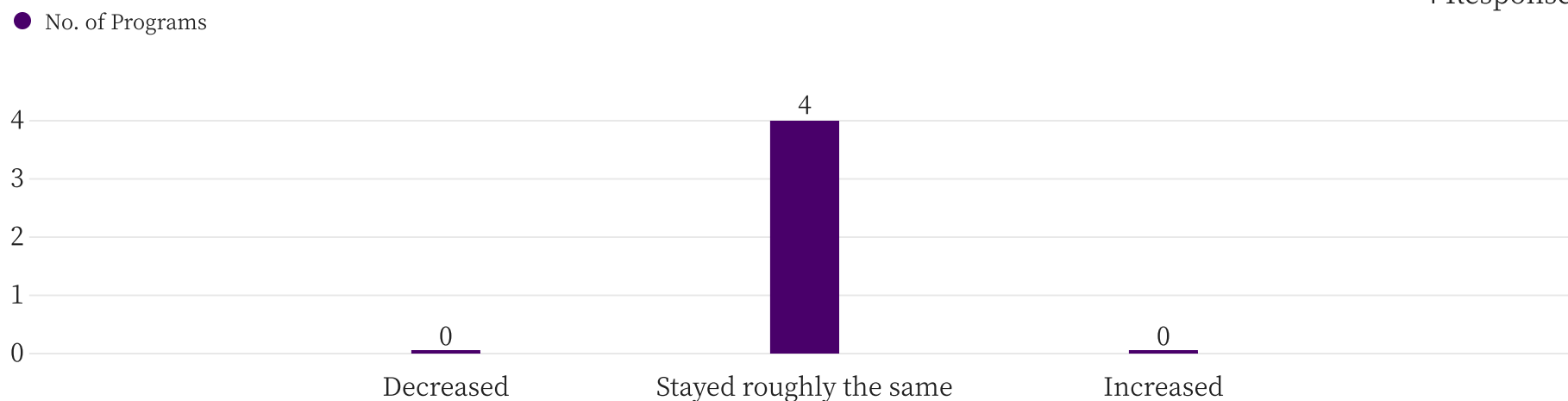
Over the past 3 years, what is the trend in Degrees awarded (AD-Ts and AA/AS) in your program(s)?

7 Responses



Over the past 3 years, what is the trend in Chancellor-Approved certificates awarded in your program(s)?

4 Responses



What barriers make it difficult for students to complete your program? Are there any barriers that could be disproportionately experienced by students from a particular demographic group (e.g., racial/ethnic, age, disability status, parents, etc.)

9 Responses

Program /Area Name	What barriers make it difficult for students to complete your program? Are there any barriers that could be disproportionately experienced by students from a particular demographic group (e.g., racial/ethnic, age, disability status, parents, etc.)
Program /Area Name	What barriers make it difficult for students to complete your program? Are there any barriers that could be disproportionately experienced by students from a particular demographic group (e.g., racial/ethnic, age, disability status, parents, etc.)
Astronomy	N/A
Chemistry	The two main factors that affect student completion are the time it takes and the availability of classes. Chemistry courses are sequential in nature, as are other STEM courses, so it can be difficult for students to finish the sequence and transfer in two years. This is further complicated by the fact that our courses are always full with waiting lists, making it difficult for some students to take courses when they need to. Any factors that affect students' ability to take courses in a timely manner will impact their ability to complete the course sequence. Outside family commitments and jobs are two common student situations that keep them from progressing. Unfortunately, students from DI groups are often in these situations.
Computer Science	None that stand out.
Engineering	There are many significant barriers to students completing the engineering program. Math requirements, scheduling, multiple transfer requirements, as well as the overall rigor of the program, to name a few. Many students experience disproportionate barriers based on race, gender, age, disability status, and home responsibilities, however, the main barriers are how well prepared students are before starting at Chabot and how much time they are willing to dedicate to their educational plan. Most engineering students will take at least 3 years to transfer assuming they are starting at MTH 37/Trigonometry. Students will need to take at least 12 units each semester and be willing to spend 40+ hours per week on their courses. Many students need to work and do not have the support for this type of dedication.

Program /Area Name	What barriers make it difficult for students to complete your program? Are there any barriers that could be disproportionately experienced by students from a particular demographic group (e.g., racial/ethnic, age, disability status, parents, etc.)
Earth and Environmental Sciences	Not all courses required have been offered
Life Sciences	The long waitlists and demand for classes creates great difficulty in getting into classes. This limits student progression through the program. Limited lab space has resulted in our discipline offering courses at times that disproportionally impact parents especially affecting women due to limited availability of Chabot childcare opening times. Building 2100 where we offer most courses especially our general education and pre-health science biology courses is currently not ADA accessible which limits the lab experience for persons with limited mobility. There is a higher cost to our programs (depending on the course) due to the price of science textbooks and lab manuals used.
Mathematics	N/A
Physics	Barriers to successful completion of the entire physics sequence that our students have shared include the need to work outside of class to support themselves and their families and consequently the lack of adequate study time, and the lack of tutors. Students who could help as tutors or IA' s in physics typically have left Chabot to transfer in Engineering or Math & Science. Upper division students at CSUEB in Physics, who might be possible tutors, are working on their own classes at the university, and don' t have time. We' ve reached out to the CSUEB faculty – and continue to do so – and we have a very strong relationship between our discipline' s two departments, and they acutely know of the need. These barriers are not unique to any one particular demographic group. The single best resource for student success in Physics continues to be the MESA/TRIO program, and all that it provides in terms of support, activities, access to mentoring, a place to study, computers to use, other students to help, access to counseling – everything.
MESA and TRIO-STEM	N/A

Questions Related to Changes in Staffing in Comparison to Changes in FTES/Enrollment

Academic Discipline Only: 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?

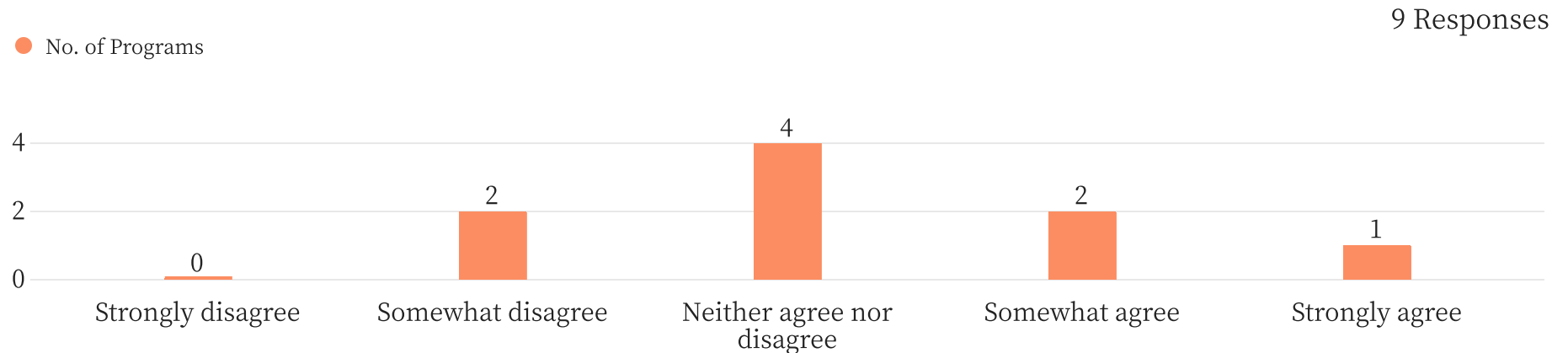
9 Responses

Program/Area Name	Academic Disciplines Only: 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	Because of the retirement of Tim Dave, we are unable to staff as many Astro classes that students might wish to take (especially the evening lab section).
Chemistry	One of our full-time instructors, Maggie, Schumacher, retired in 2019 and has not been replaced. She was a lead general chemistry instructor (chem 1A and 1B), two of our most important classes. Her load has largely been taken up by part-time instructors. The decrease in our full-time faculty negatively affects our ability to serve our students. This may be affecting our enrollments and success rates. This speaks to our need to hire a replacement full-time faculty member.
Computer Science	No changes.
Engineering	The Engineering FTES has increased year over year by 2 - 3% each year since 2018. Our part time pool has increased from 2 to 3 faculty members. We are also willing to grow to four faculty members. Although the percentage growth of our program is less than our part time faculty growth, full time engineering faculty are teaching mathematics and will start teaching environmental science courses. The need for part time faculty is also a result of the specialization of engineering courses that are offered at Chabot.
Earth and Environmental Sciences	Enrollments are dependent upon being able to offer the courses - not having any FT or PT faculty has resulted in some semesters having no courses offered in either ENSC or GEOL.
Life Sciences	Our FTES and enrollment has mainly held steady. Our FT faculty head count has gone down resulting in FT and PT faculty overload.

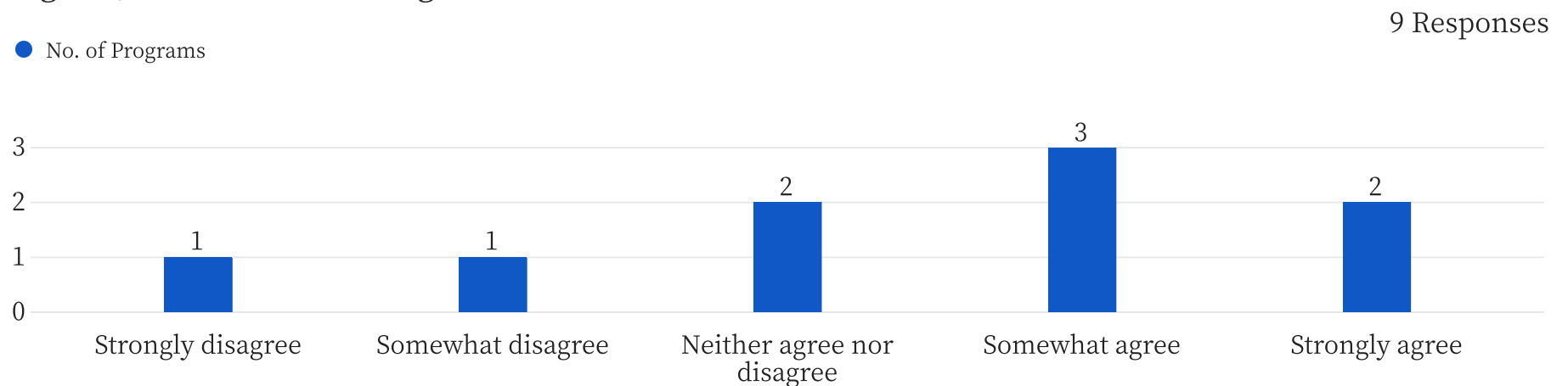
Program/Area Name	Academic Disciplines Only: Compare changes over the past three years in the FTES/enrollment in your area with changes in staffing in this same time period. What do you notice?
Mathematics	They both have decreased; however, our Part-time colleagues have felt the largest impact
Physics	As shared earlier in this report, the loss of Tim Dave and Jose Alegre has significantly affected the program; we can't offer the same number of classes, and even more, can't support our students as well, with just adjunct colleagues who must teach at multiple institutions, and who can't always be present for student questions outside of class. The adjunct colleagues we have been able to keep are terrific, but we ask a huge amount of them when we don't have Classified Professional support in terms of a lab tech – something that other colleges do have to support their faculty and programs.
MESA and TRIO-STEM	N/A

Questions Related to Technology, Facilities, and Professional Development

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

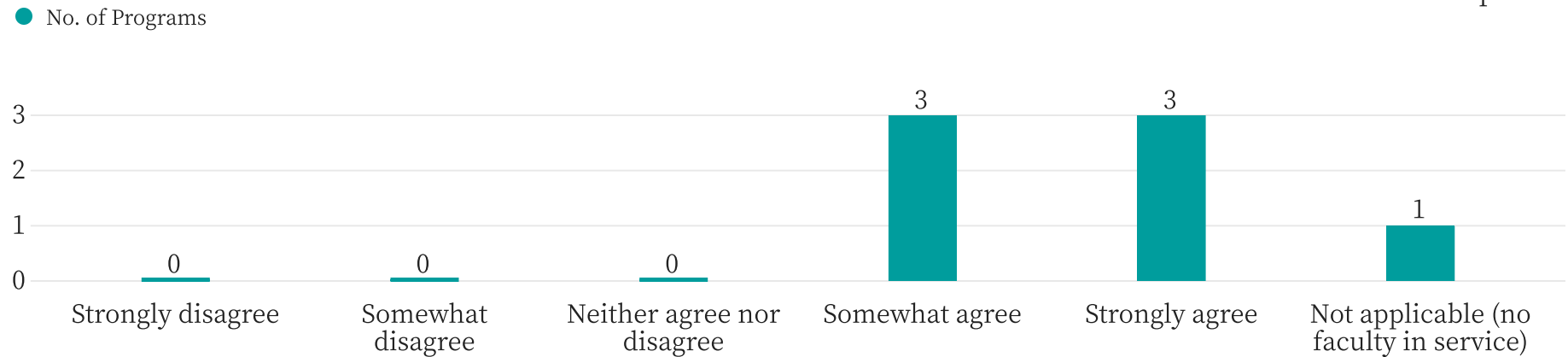


The facilities in our program/area are sufficient to support student learning and/or carry out our program/area outcomes and goals.



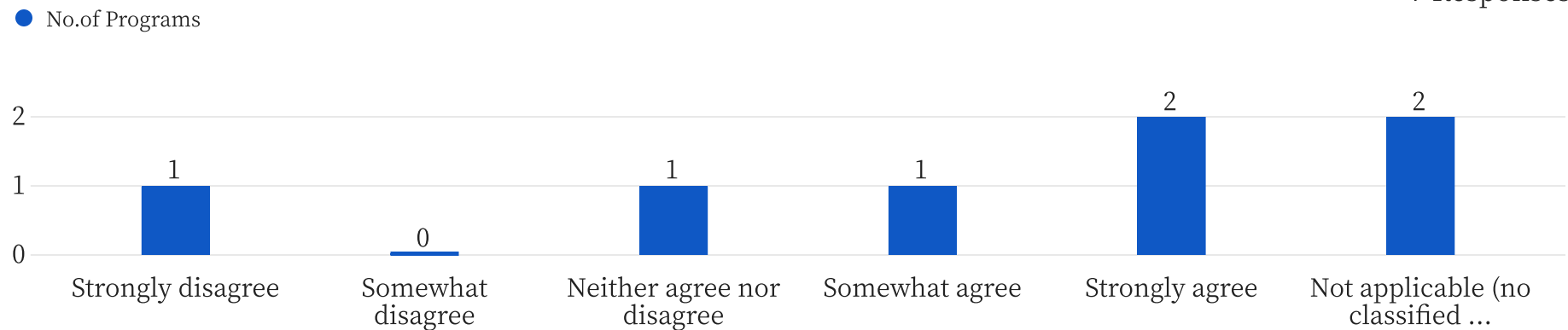
Professional Development: In general, Faculty members in my program/area regularly participate in professional development activities offered by/at Chabot.

7 Responses

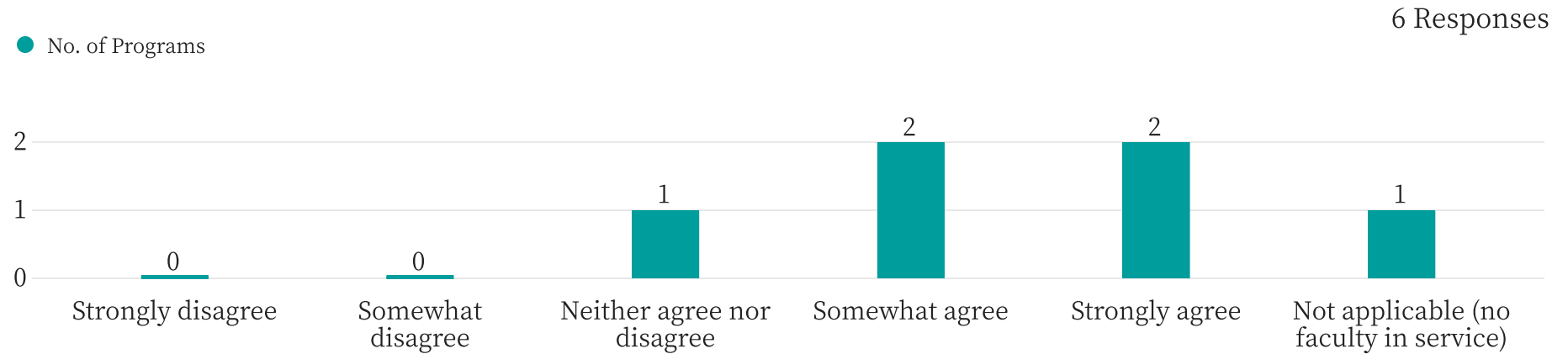


In general, Classified Professionals in my program/area regularly participate in professional development activities offered by/at Chabot.

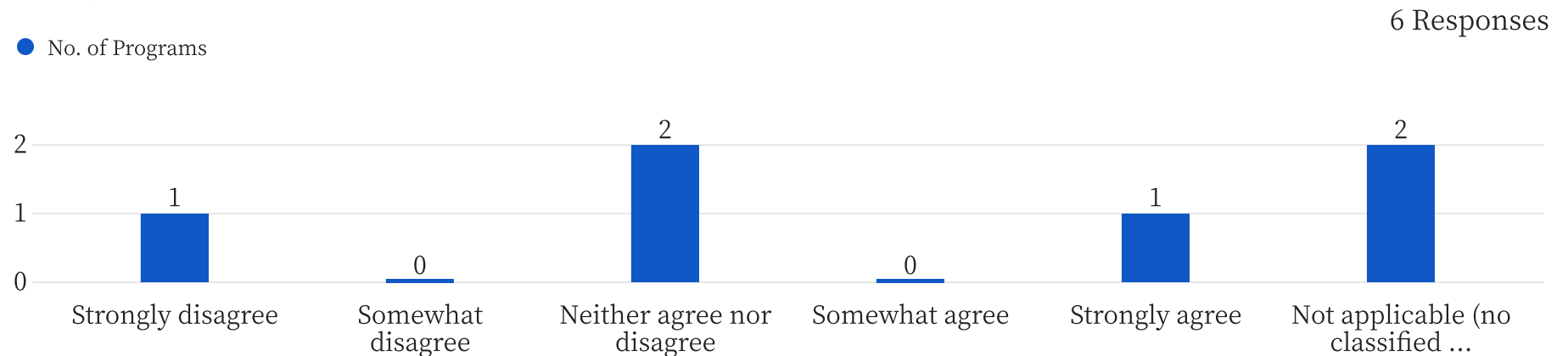
7 Responses



In general, Faculty members in my program/area regularly participate in professional development activities offered outside of Chabot.



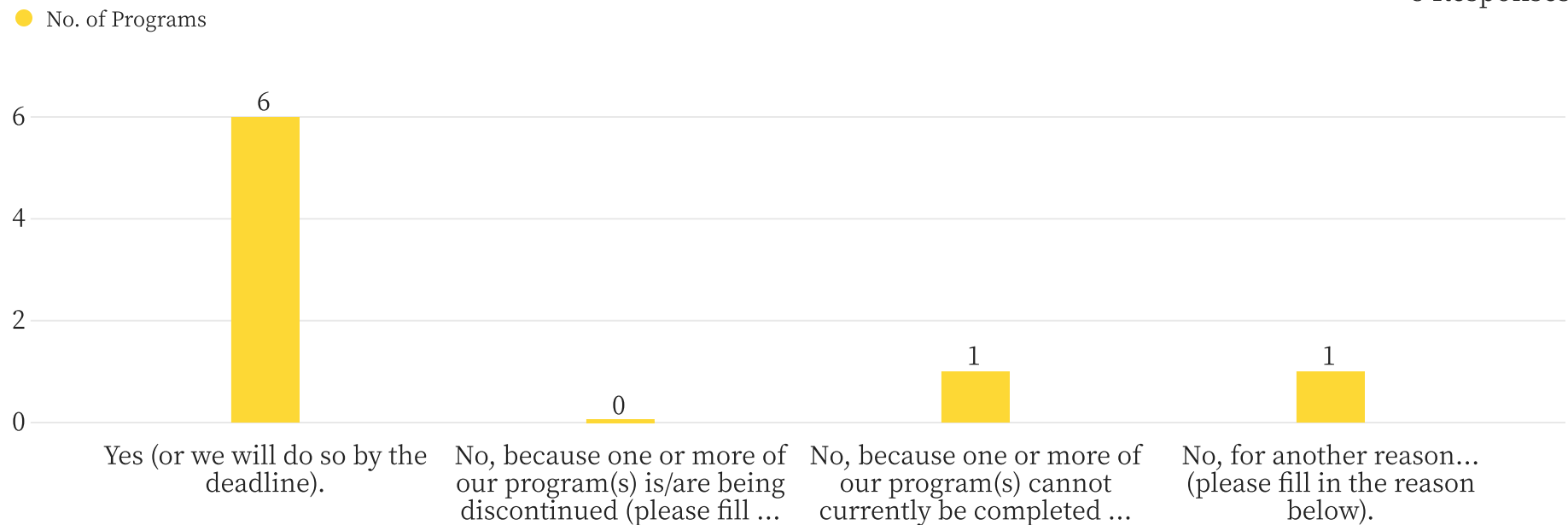
In general, Classified Professionals in my program/area regularly participate in professional development activities offered outside of Chabot.



Questions Related to Program Maps

Have you completed all program maps for your discipline?

8 Responses



Explanations for Why Some Program Maps are Incomplete

9 Responses

Program/Area Name If you checked off “No” above, please explain.

Astronomy	Astronomy is not part of a program. It is a GE science taken by students across the campus, in a variety of programs, as a way to fulfill AA/AS degrees and help in transferring to four-year institutions.
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Chemistry	N/A
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Computer Science	N/A
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Engineering	N/A
Earth and Environmental Sciences	* Mapping for this program was put on hold until a FT faculty member was hired and could update the curriculum and staff the required courses.
Life Sciences	N/A
Mathematics	N/A
Physics	Note for: X Yes (or we will do so by the deadline). Given the lack of full-time faculty who could work on this effort, we were very lucky to have Shannon Lee, our adjunct colleague, help in this effort.
MESA and TRIO-STEM	N/A
