

CPR - Instructional

A. Program Description

1. Describe your program's purpose and identity/focus, noting any changes since the last review.

The Santa Monica College Mathematics Department serves a large and diverse student population. The course offerings are designed to meet the needs and requirements of the full spectrum of students at the college. The curriculum includes a minimal offering of pre-transfer level courses, transfer-level applied courses, and the traditional sequence of transfer courses required by a student in a STEM (science, technology, engineering, and mathematics) field. The transfer-level applied courses represent the courses required for most non-STEM majors.

The faculty of the math department are deeply committed to both maintaining high standards and providing our students the support required to meet these standards. Our goals are to have students participate in those courses where they have the skills needed for success, gain the skills they need for success in future courses and leave our department ready to be successful as they transfer to 4-year institutions, enter graduate or professional school, or begin their careers.

2. What are the critical ways your program advances the college's mission, vision, and goals?

SMC has long been the #1 in transfers, taking mathematics courses is part of every student's journey. AB 705 and AB 1705 have added a layer of challenges to the mathematics department contributions to maintaining this status.

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Mathematics Department Mission Statement

The Mathematics Department of Santa Monica College is committed to helping students develop to their full potential. Our mission is to provide SMC students with an opportunity to foster an appreciation and understanding of mathematics in order to achieve academic excellence, enhance career opportunities, utilize technology, and develop creative and logical solutions to various problems encountered in life.

To fulfill this mission, each instructor with his or her expertise takes great care to present clear and concise lectures in a supportive environment conducive to learning. Students are encouraged to take advantage of various support systems available to them – the student-oriented Math Lab (with experienced instructional assistants, tutors, and instructors) and their own instructors who provide assistance on a more personal basis during office hours.

Serving a global and diverse community, we give to those students for whom math is a challenge a key to unlock the door to mathematics and provide others a stepping-stone to other academic areas. Ultimately, our students will become lifelong learners as result of their successful experiences in mathematics at Santa Monica College.

We believe that our departmental mission directly supports the college mission by contributing to the first two ILOs which state that SMC students will:

- Acquire the self-confidence and self-discipline to pursue their intellectual curiosities with integrity in both their personal and professional lives.
- Obtain the knowledge and skills necessary to access, evaluate, and interpret ideas, images, and information critically in order to communicate effectively, reach conclusions and solve problems.

Students new to SMC enroll in mathematics courses based on their High School GPA and highest math course taken. If that information is not available students can take a Guided Self- Placement that will help them determine the most appropriate mathematics course.

Continuing students move through the mathematics sequence by successfully completing the prerequisites(s) required for the next course in the sequence. AB 705 and AB 1705 have limited or will limit the courses we can offer, we are no longer allowed to offer below transfer level courses. AB 705 took effect in fall 2019, this required us to offer support courses for all of our gateway transfer courses.

The curriculum has included basic skills courses (these courses were last offered summer 2022), transfer level applied courses and the traditional sequence of transfer courses required by a student in a STEM (science, technology, engineering and mathematics) field. The courses in the Basic Skills area were designed for students who need to acquire or enhance basic mathematical skills. The Transfer Applied courses are transferable courses required for most non-STEM majors.

Basic Skills (offered until Summer 2022)

Math 81 and Math 84, or Math 85, are the initial courses of the developmental math sequence, covering arithmetic and pre-algebra. Math 31, Elementary Algebra, and Math 18, Intermediate Algebra for Statistics and Finite Mathematics, or Math 49, Beginning and Intermediate Algebra for Statistics and Finite Mathematics, are designed to meet the needs of the non-STEM students and satisfy the requirements for enrollment in transfer applied mathematics courses. Math 31, Math 20, Intermediate Algebra, and Math 32, Plane Geometry, provide a more rigorous

preparation in algebra and geometry leading to the study of calculus. This sequence of courses is designed for students interested in a STEM program.

Transfer Applied

Math 21, 26, 28, 29, 41 and 54 comprise our applied transfer level courses for non-STEM major students. Math 41, Mathematics for Elementary School Teachers, fulfills the math requirement for the Liberal Studies major at CSU campuses but does not meet the mathematics admission requirement at any of the CSU or UC campuses. Math 21, Finite Mathematics, and 54, Elementary Statistics, are terminal mathematics courses for non-STEM majors. Math 26, 28, and 29, comprise the calculus designed to serve those planning to transfer to Business, Social Science, and Economics* majors. Math 21C, 26C and 54C are support courses that were introduced in Fall 2019. These courses are meant to add support to students who would have placed into a below transfer level course prior to AB 705. The topics covered are for just-in-time remediation to help students successfully complete the parent course.

* Certain transfer institutions require students satisfactorily complete Math 7 and Math 8.

Transfer (STEM)

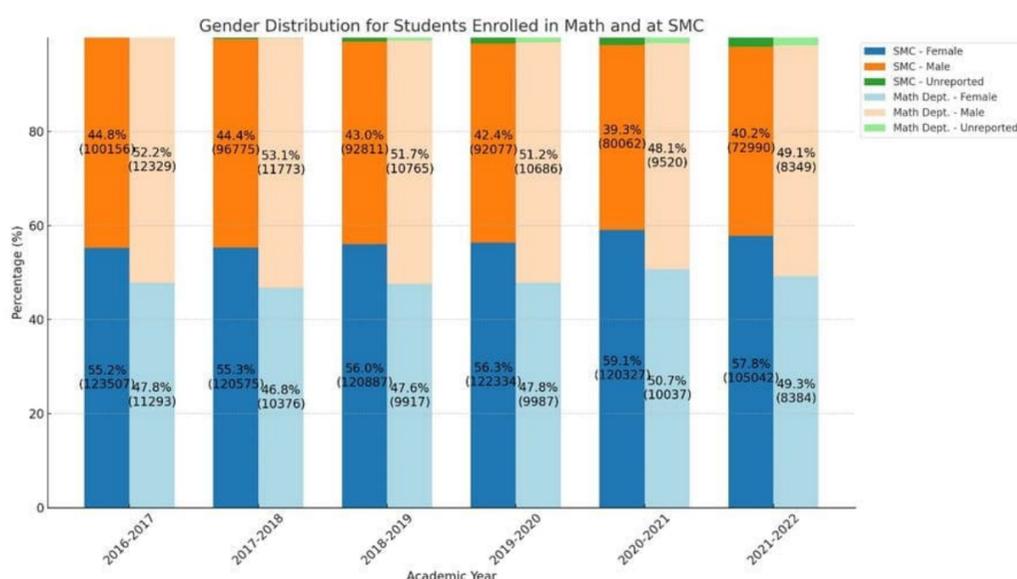
Math 2 is an intensive course bridging intermediate algebra and the traditional calculus sequence. Math 2 covers content of college algebra and trigonometry. This course is also a prerequisite course for several science courses at SMC. Math 7, 8 and 11 comprise our traditional, trigonometry-based calculus sequence, and are designed for students planning to transfer with majors in STEM fields or business at many UC campuses and other colleges. Math 10, 13 and 15 all have a prerequisite of Math 8. Math 10, currently cross-listed as Computer Science 10, covers topics in discrete mathematics and is designed primarily for students planning to major in computer science, engineering and mathematics. Math 13 is a rigorous introduction to abstract and applied linear algebra and is designed for students planning to transfer with majors in STEM. Math 13 and 10 require students to write mathematical proofs, and they are often the first courses that require, not just problem solving, but significant mathematical writing. Math 15 is an introduction to ordinary differential equations. We also offer math 2C, 3C and 4C as support courses that were introduced in Fall 2019.

B. People Involved – Your Students

Population and Demographics:

3. What are the key characteristics that define your program’s student population? Compare your program's population to the overall college population, and discuss the extent to which your program’s student makeup (including subgroups who are over or under-represented) currently aligns with your program’s intended target populations.

Enrollment by Gender

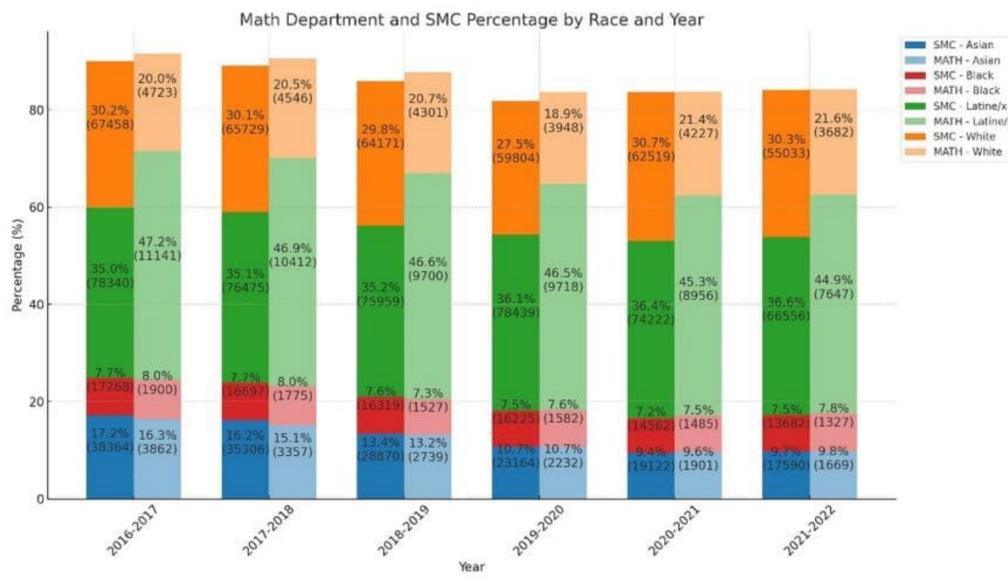


The Math Department at SMC exhibited a gender distribution trend that leans towards a more balanced representation in recent academic years. Specifically, the female student population in the department varied from 46.8% in the 2017-2018 academic year to a high of 50.7% in 2021-2022. In contrast, the male student population ranged from a peak of 53.1% in 2017-2018, decreasing to 49.1% in 2021-2022. This trend indicates a shift towards gender parity, particularly notable in the 2020 to 2022 academic years.

In comparison, the overall gender distribution at Santa Monica College consistently demonstrated a higher proportion of female students, with their percentages ranging from 55.2% to 57.8% over the observed period. This consistent pattern underscores a more female-dominant demographic in the broader college context.

Regarding the category of unreported gender, both the Math Department and the entire college showed minimal proportions; however, there has been an upward trend in recent years. By the 2021-2022 academic year, the unreported gender category reached 1.7% in the Math Department and 2.0% across the entire college, indicating a small but growing segment of the student population opting not to specify their gender.

Enrollment by Race



Latine/x Students

The Math Department has exhibited a high and relatively stable representation of Latine/x students, though with a slight decrease from 47.2% in 2016 to 44.9% by 2022. This trend indicates sustained interest and participation of Latine/x students in mathematics, despite the minor decline. Notably, the proportion of Latine/x students in the Math Department consistently surpasses their representation in SMC overall, often by nearly 10%. This significant difference underlines the department's appeal and accessibility to the Latine/x community.

Black Students

The enrollment of Black students in the Math Department has shown stability over the past six years, fluctuating between 7.3% and 8.0%. This steady rate closely mirrors the overall percentage of Black students at SMC, suggesting that the department's racial composition in terms of Black students aligns with the broader college demographic.

Asian Students

There is a noticeable decline in the proportion of Asian students in the Math Department, averaging an annual rate of change of -1.1%. This downward trend is consistent with the overall pattern observed across SMC, where the average annual rate of change is -1.3% for Asian students. This parallel decline indicates similar challenges or shifts in enrollment patterns for Asian students both in the Math Department and college-wide.

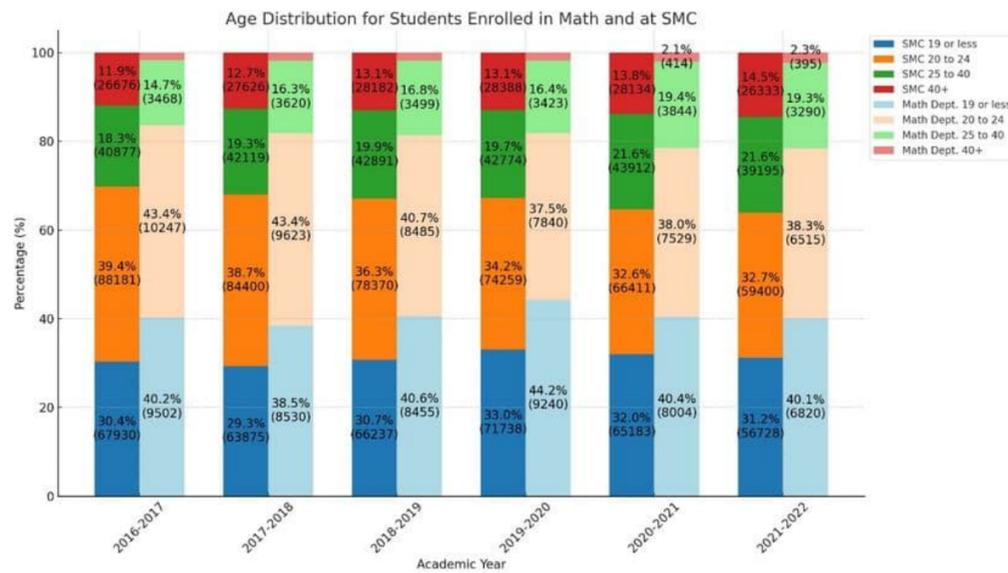
White Students

The representation of White students in the Math Department has been consistently about 10% lower than their overall representation in SMC over the past six years. This persistent difference highlights a distinct enrollment pattern for White students in the department, differing from the college's overall demographic trends.

Conclusion

The Math Department at SMC presents a diverse racial composition, with notable trends and disparities when compared to the college-wide demographics. The higher representation of Latine/x students, steady enrollment of Black students, declining presence of Asian students, and lower proportion of White students relative to the broader SMC population offer insights into the department's demographic dynamics. Understanding these trends is crucial for the Math Department in developing targeted educational strategies and support systems. These efforts will ensure that the department not only maintains its diversity but also addresses the unique needs and aspirations of its student body, aligning with the overall institutional goals of inclusivity and representation.

Enrollment by Age



Math Department

The trend in the Math Department shows a gradual decrease in the proportion of younger students (19 or less) from around 40.2% in 2016-2017 to 40.1% in 2021-2022, with a peak at 44.2% in 2019-2020. The percentage of students aged 20 to 24 also shows a decline over the years, with a noticeable drop from 43.4% to 38.3%. Interestingly, there's an increase in the representation of the 25 to 40 age group, rising from 14.7% to 19.3%, while the 40+ age group remains relatively stable with minor fluctuations, indicating a slight aging trend in the Math

Department's student population.

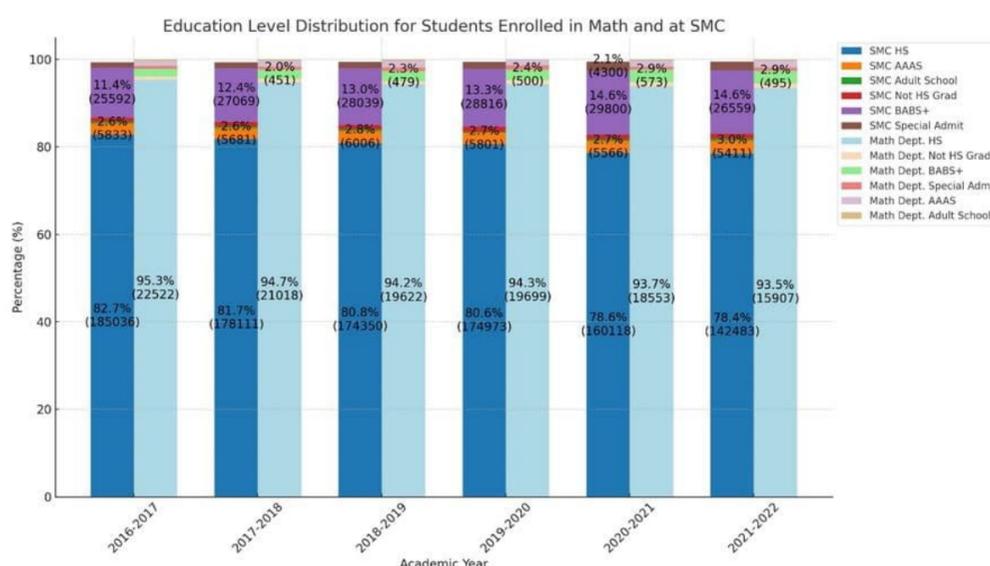
Comparative Analysis with SMC

Comparatively, the overall SMC student body exhibits a different trend. The percentage of students aged 19 or less decreased more significantly from 30.4% to 31.2%, and those aged 20 to 24 saw a more pronounced decline from 39.4% to 32.7%. The proportion of students in the 25 to 40 age group shows a slight upward trend, increasing from 18.3% to 21.6%, and the 40+ age group also sees a growth in representation, indicating a broader aging trend across SMC. The shifts in the SMC population are more pronounced than in the Math Department, especially in the youngest and oldest age brackets.

Conclusion

In conclusion, both the Math Department and the overall SMC student body are experiencing an aging trend, with a decline in the proportion of the youngest students and an increase in older age groups. However, the changes within the Math Department are less pronounced compared to the broader SMC population, indicating that the Math Department's demographic shifts are somewhat insulated from the broader trends affecting the entire institution. This could reflect differences in the appeal of math as a field of study among different age groups or varying retention strategies within the department compared to the entire college.

Enrollment by Education Background



Math Department

In the Math Department from 2016-2017 to 2021-2022, there's been a consistent majority of students with a high school level education, though their percentage has slightly decreased from 95.3% to 93.5%. Other educational levels have seen small fluctuations; notably, students with education beyond a bachelor's degree (BABS+) increased from 1.8% to 2.9% in 2020-2021 before dipping to 2.9% in 2021-2022.

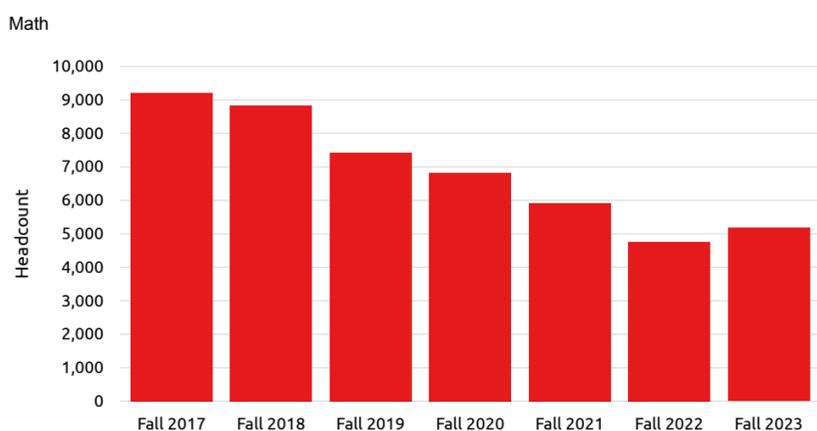
Comparative Analysis with SMC

Comparatively, the entire SMC student body shows a more significant decrease in the HS category, from 82.7% to 78.4%, indicating a larger proportion of students with more advanced education entering SMC over the years. The BABS+ category has increased from 1.8% to 14.6%, and 'Special Admit' students also rose notably. The 'Not HS Grad' and 'Adult School' categories remained relatively low but are higher in proportion compared to the Math Department.

Conclusion

Overall, the Math Department has maintained a higher proportion of students with only a high school education compared to SMC as a whole, which has seen an increase in more educationally diverse students. SMC's broader student body demonstrates a trend towards higher educational attainment upon entry over the years, which could be due to the institution's evolving admission strategies, outreach efforts, or changes in the applicant pool. The Math Department's trend is less dynamic, suggesting that the entry-level education requirements or the appeal of math programs to students directly from high school may be relatively stable.

Student Headcount



Measures: Headcount

	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023
Measures	9,213	8,832	7,434	6,829	5,923	4,765	5,179

Outreach and Planning:

4. What opportunities do your analyses reveal about your current and future student outreach and planning efforts?

At Santa Monica College, our student body consistently comprises younger, first-time college students, a dynamic that shapes our approach to education, particularly within the mathematics department. Given recent legislative changes limiting our ability to offer non-transferable mathematics courses, we are prompted to reevaluate and adapt our curriculum and support services to better meet the evolving needs of our students. This legislative context requires a strategic shift to ensure all students are adequately prepared and supported to succeed in transfer-level mathematics courses within the stipulated timeframe of one year from enrollment.

In response to these challenges, our department is actively enhancing our suite of student support mechanisms. We are expanding tutoring services, introducing supplementary courses for calculus, and organizing workshops focused on study skills and mathematics boot camps. These initiatives are designed to provide students with a robust framework of support, equipping them with the necessary tools to excel in their mathematics courses and setting a strong foundation for their academic and professional achievements.

The amendment of AB 705, mandating that all STEM students be allowed to enroll in calculus or its supported variants, necessitates a significant curriculum overhaul. As a result, courses such as Math 2, Math 2+2C, Math 3, Math 3+3C, Math 4+4C, or Math 26+26C will be phased out. This change significantly impacts both the academic pathways available to our students and the instructional responsibilities of our faculty. Many faculty members, who were initially engaged to teach developmental mathematics, have shifted to support courses with the initial enactment of AB 705. With the latest legislative updates, these educators are transitioning again, this time to teaching areas such as statistics, statistics with support, finite math, and the support course for finite math. This represents a substantial adjustment from their original teaching assignments.

In navigating these legislative changes, our department is committed to refining our curriculum and support systems to align with the requirements and aspirations of our students. This includes updating our course offerings and ensuring that our faculty are equipped with the resources and training necessary for this transition. Our goal is to create an educational environment that not only meets legislative standards but also supports the success and ambitions of every student, preparing them for their future academic and professional endeavors. This period of adaptation presents an invaluable opportunity for innovation, allowing us to reaffirm our dedication to excellence in mathematics education and student success.

C. People Involved – Your Staff

Population and Demographics:

5a. Discuss your program's staff (PT/FT faculty, non-faculty, and classified).

The Mathematics Department at Santa Monica College is bolstered by a robust team, comprising 32 full-time faculty members who anchor the program's academic excellence. The team is augmented by 38 associate faculty members and approximately 10 additional part-time faculty, each bringing a diverse range of expertise and perspectives to enrich our students' learning experiences.

Our Mathematics Lab, a cornerstone of our support system, is staffed by 9 dedicated instructional assistants, guided by 1 coordinator, all of whom play a pivotal role in providing personalized assistance to students. This hands-on support is critical in helping students navigate the complexities of mathematical concepts and problem-solving techniques.

Administrative operations are seamlessly managed by a full-time administrative assistant, whose role is vital in maintaining the department's organizational and functional efficiency.

Student support is further amplified by an impressive team of 50 student tutors and 10 clerks, all stationed within the math lab. These student tutors, who are well-versed in the department's academic rigor, provide peer-to-peer guidance, fostering a collaborative and conducive learning environment. Their efforts are instrumental in creating a space where students can refine their skills and deepen their understanding of mathematics in a supportive and engaging setting.

The staffing structure and roles within our department have evolved in response to legislative changes, notably AB 705. This evolution has seen a shift in our hiring practices and expectations for faculty roles. Traditionally, faculty members were hired under specific titles such as Cross-level, Developmental, or Applied/Statistics educators. However, with the implementation of AB 705, we have transitioned to a more unified approach, hiring all new faculty under the general title of Mathematics. This change reflects the need for versatility in teaching across the spectrum of courses we offer, adapting to the evolving educational landscape and student needs.

Faculty previously hired to specialize in developmental mathematics are now adapting to teach transfer-level mathematics courses, often with additional support structures in place to aid student success. Similarly, those initially focused on applied/statistics education are increasingly teaching statistics courses, in line with shifting student interest and enrollment trends away from applied calculus courses.

This adaptive approach underscores our commitment to providing a comprehensive and responsive mathematics education. By leveraging the diverse skills and flexibility of our faculty and support staff, we are better positioned to meet the challenges of today's educational environment and ensure our students' success.

5b. How reflective of your program's student population is your staff?

Reflecting the diversity of student body at SMC, the Mathematics Department showcases a varied demographic spread among both students and faculty. The student demographics consist of 10% Asian, 45% Latinx, 7.8% Black, 21.6% White, and other groups making up the remainder. The faculty and staff composition presents a rich diversity with 45.5% Caucasian, 21.2% Asian, 12.1% Black, 15.2% Hispanic, 3.0% Pacific Islander, and 3.0% Multi-Racial, and a gender distribution of 61.5% male and 38.5% female. This gender representation among

faculty and staff contrasts with the approximate 50% female student population, indicating a slight underrepresentation of female faculty in comparison but not significantly so.

The department's diversity is not only a reflection of our community but a fundamental component of our educational approach, enhancing the learning and teaching environment. Diverse faculty perspectives contribute to a richer, more inclusive curriculum and teaching methodology that benefits all students.

Our hiring practices demonstrate our commitment to diversity and representation. Among our 13 most recent hires, there is a mix of 38.5% Caucasian, 23.1% Chinese, 15.4% Hispanic, and one each from Black, Multi-Racial, and Pacific Islander backgrounds. While this shows a broad spectrum of diversity, there's a recognized need to better align our faculty's ethnic composition with that of our student body, especially considering the significant proportion of Latinx students at 45%.

To address this, there is an acknowledged benefit in striving to increase our percentage of Hispanic identifying faculty to closer mirror the 40% mark, more accurately reflecting the student demographics and fostering an environment where students see themselves represented in their educators. This effort towards greater alignment not only aids in enhancing the sense of belonging and community among students but also enriches the educational experience by incorporating a wide range of cultural perspectives and insights into the learning process.

Furthermore, while the representation of female faculty in the department slightly lags behind the student population's gender distribution, it remains a focal area for improvement. Enhancing gender diversity among faculty not only aligns with broader institutional goals for equality and inclusion but also supports the creation of a more balanced and supportive educational environment for all students.

In conclusion, the Mathematics Department at SMC is dedicated to fostering a diverse and inclusive environment that reflects the demographics of its student body. Through targeted recruitment and support strategies, we aim to enhance the representation of Hispanic faculty and female faculty, ensuring our department more accurately mirrors the diversity of our students. This commitment to diversity is integral to our mission, enriching the educational experience and preparing students for a diverse and global society.

Staffing Changes:

6. Discuss your program's staffing changes since the last review. How have these changes impacted your program's ability to achieve its desired student outcomes?

Since our last program review, we've experienced significant staffing changes, including both retirements and new hires, which have greatly impacted our program's ability to achieve its desired student outcomes.

Retirements

1. Mitra Moassessi retired in 2020 after contributing her expertise as a full-time faculty member since 1998, leaving a legacy of dedication and excellence.
2. Moya Mazorow concluded her tenure in 2020, having been an integral part of our faculty since 1992, greatly influencing our curriculum development while bringing a wealth of knowledge to our students.
3. Betty Wong retired in 2016 after serving since 1991, her contributions have been pivotal in shaping the program's foundational strengths.

New Hires

1. Alex James Bene hailing from Cleveland, Ohio, joined us in 2016. With a B.A. in Physics, an M.S. in Engineering and Physics from Cornell University, and a Ph.D. in Mathematics from UCLA, Alex was hired to teach a 2/3 schedule of cross-level mathematics and basic skills. His thesis, "Intersections of Cycles in the Combinatorial Moduli Space," brings a unique perspective to our program.
2. Kristin Lui-Martinez a Sacramento native, also joined in 2016. She brings a B.S. in Scientific Computation and Applied Mathematics and an M.S. in Applied Mathematics from UC Davis to our team. Kristin's thesis, "Steganalysis in Images using the Spectral Decomposition of the Laplacian Matrix," and her commitment to teaching a 2/3 schedule of cross-level mathematics and basic skills significantly enhance our curriculum's diversity.
3. Matthew James Musselman from Yorba Linda, CA, with his B.S. in Mathematics/Economics from UCLA and M.A. in Mathematics from CSU Fullerton, joined in 2016. His Clear California Single Subject Teaching Credential in Mathematics and experience teaching at the middle and high school levels enrich our basic skills instruction.
4. Iris Miano, originating from Central California and joining in 2016, earned her B.A. and M.A. in Mathematics from Humboldt State University. Hired to teach a 100% schedule of basic skills mathematics, Iris strengthens our foundational student learning support.
5. Kristin Ross from Inglewood, California, also joined our faculty in 2016. With a B.A. and M.A. in Mathematics from CSU Long Beach, she was hired to teach a 100% schedule of basic skills mathematics, contributing significantly to our program's focus on equitable student success.
6. Sam Soleymani, inspired by his own experiences as an SMC student and subsequent education at UCLA and CSUN, joined the faculty in 2017. His unique journey from student to teacher underscores the value of mentorship and community in education. Sam graduated with honors among the top ten of 117-member undergraduates' class from UCLA.
7. Matthew Hancock, from Agoura Hills, California, joined in Fall 2017. His extensive background in Mathematics and Economics from Pepperdine University and a Ph.D. in Statistics and Applied Probability from UCSB, focusing on financial mathematics, brings a wealth of knowledge to our applied mathematics track. His dissertation for his Ph.D. was titled Investigating Optimal Investment Problems for

8. Aaron Simo, a California native with degrees from CSUN, was hired in 2017 to teach cross-level and applied mathematics, enhancing our curriculum with his expertise.
9. Novita Phua, born in Indonesia and a graduate of CSULA with degrees in Applied Mathematics, joined in 2019. Her background and commitment to teaching cross-level and applied mathematics further enrich our program.
10. Jesus Lopez, who joined in 2022, brings a strong foundation in Mathematics and Applied Statistics from CSU Long Beach to our team, broadening our instructional capabilities across all mathematics courses, especially in statistics.
11. Jason Wang's journey from UCLA to developing curriculum for Kumon North America and earning an M.S. in Applied Mathematics from CSU Long Beach showcases a blend of practical experience and academic rigor. Hired in 2022, his diverse experience enhances our teaching across all levels of mathematics.
12. Adam D. Richardson earned his B.S. in Applied Mathematics from ASU, M.S. in Pure Mathematics from CSULB, and his Ph.D. in Mathematics from UCR. He is an active math researcher in the field of fractal geometry and complex analysis. His advisor was Distinguished Professor Michel L. Lapidus, and his doctoral dissertation is titled *The Complex Dimensions of Space-Filling Curves*. Most recently, he generalized his results to a larger class of space-filling curves, and his results are to be included in volumes 1 and 2 of a forthcoming three-volume textbook series on fractal geometry published by the American Mathematical Society. Dr. Richardson has taught math and math education courses for over a decade, as well as served as a university supervisor and mentor for students completing their K12 teaching credential. He was hired for a tenure-track position at SMC in Fall 2022. For more information, please visit his website adamdrichardson.com.
13. I-Shen Lai's educational background from UCLA in Mathematics and Linguistics, along with her M.A. from Biola University, contributes to our program's interdisciplinary and multifaceted approach to mathematics education.

The influx of new hires since our last program review has profoundly impacted our program's ability to achieve its desired student outcomes in several key areas:

- **Diversification of Expertise:** The new faculty members come from a broad spectrum of academic and professional backgrounds, enhancing the program's curriculum with their diverse expertise. For instance, Alex James Bene's work in the combinatorial moduli space and Matthew Hancock's focus on financial mathematics introduce students to advanced mathematical concepts and applications, preparing them for a wide range of careers.
- **Innovative Teaching Methods:** The new hires bring fresh teaching methodologies that cater to a variety of learning styles and needs. For example, Iris Miano and Kristin Ross, with their commitment to teaching basic skills mathematics, have likely implemented new strategies to support students at different levels of mathematical understanding, thereby enhancing student retention and success rates.
- **Enhanced Focus on Applied Mathematics:** With several of the new hires such as Kristin Lui-Martinez specializing in applied mathematics and related fields, the program can offer more courses and projects that connect mathematical theories to real-world applications. This practical approach not only makes mathematics more accessible and engaging but also aligns with workforce needs, improving students' employment prospects post-graduation.
- **Strengthening Basic Skills:** The deliberate hiring of faculty with a focus on teaching basic skills mathematics addresses the critical need to strengthen foundational mathematical understanding among students. This is particularly important in light of legislative changes like AB 705, aiming to improve college readiness and completion rates. Faculty like Matthew James Musselman, who brought experience from both middle and high school teaching, are well-equipped to bridge gaps in students' knowledge and build a solid foundation for further mathematical study.
- **Research and Curriculum Development:** Faculty members like Adam D. Richardson, with his research in fractal geometry and complex analysis, not only contribute to the program's scholarly output but also enrich the curriculum with up-to-date knowledge and practices. Their involvement in research ensures that the program remains at the cutting edge of mathematical education.
- **Community and Mentorship:** The unique backgrounds and journeys of new hires, such as Sam Soleymani's transition from an SMC student to a faculty member, foster a strong sense of community and mentorship within the program. This not only enhances the educational experience for current students but also strengthens alumni connections, which can open up additional opportunities for mentorship, internships, and employment.
- **Interdisciplinary Collaboration:** The varied academic histories of the new faculty encourage interdisciplinary collaboration, enriching the mathematics program with insights from physics, economics, engineering, and statistics. This interdisciplinary approach prepares students for the collaborative and multifaceted nature of modern scientific and mathematical problems.

Staffing Challenges:

7a. Looking ahead to the next review period, discuss any staffing challenges you anticipate. How is your program planning to address these challenges?

Looking ahead to the next review period, the Mathematics Department faces a significant staffing challenge, primarily due to the evolving curriculum landscape influenced by legislative changes, notably AB 705 and AB 1705. These changes restrict the range of courses we can

offer, particularly impacting instructors who were hired before the enactment of AB 705 to teach developmental math or basic skills courses. Approximately one-third of our instructors fall into this category and, under the mandate of AB 1705, will find themselves unable to teach college algebra or precalculus, which were traditionally part of their teaching routine.

As we anticipate a continued increase in enrollment for statistics courses, alongside a sustained interest in the calculus series, the need to adapt our faculty's expertise becomes evident. A background in mathematics, while providing a strong foundation, does not automatically equip an instructor with the skills or knowledge to teach statistics effectively. The distinction in pedagogical approaches between mathematics and statistics courses necessitates targeted professional development to bridge this gap.

To address these challenges, our department is committed to the following strategies:

- **Professional Development:** We recognize the urgent need for professional development opportunities that are specifically tailored to equip our faculty with the skills required to teach statistics and advanced mathematics courses. This will include workshops, seminars, and potentially advanced courses or certifications in statistical methods and pedagogy. We will actively seek out and encourage participation in these opportunities, ensuring our faculty are well-prepared to meet the demands of our evolving curriculum.
- **Curriculum Reevaluation:** Concurrently, we will undertake a comprehensive reevaluation of our curriculum to identify and implement adjustments that can accommodate the changing landscape. This may involve the development of new courses or the redesign of existing ones to ensure they are aligned with legislative requirements and the current needs of our students.
- **Recruitment and Hiring Practices:** Recognizing that the current changes also affect our future hiring needs, we will adjust our recruitment strategies to prioritize candidates with a diverse range of expertise, particularly in statistics and applied mathematics. This will help ensure that our faculty composition is aligned with the courses we are able to offer and the direction in which our curriculum is headed.
- **Mentorship and Peer Support:** To support our existing faculty through this transition, we will enhance our mentorship and peer support programs. Experienced faculty members who are adept in the required areas will mentor those transitioning into new teaching roles, facilitating knowledge exchange and fostering a supportive departmental culture.
- **Continuous Assessment and Feedback:** We will implement a continuous assessment mechanism to monitor the effectiveness of these strategies, soliciting feedback from both faculty and students. This will allow us to make iterative improvements and ensure that our approaches are meeting the intended goals.

By proactively addressing these staffing challenges through targeted professional development, curriculum adjustments, strategic hiring, and enhanced support systems, the Mathematics Department aims to navigate the transitional period effectively. Our goal is to continue providing high-quality education that meets the needs of our students and complies with legislative mandates, ensuring the long-term success and adaptability of our program.

7b. What institutional support does your program need to address these challenges?

To effectively address the staffing challenges anticipated in the next review period, particularly those arising from the adaptation to AB 705 and AB 1705 mandates, our program may require several forms of institutional support. These supports could be pivotal in ensuring the Mathematics Department at SMC successfully navigates the transition, adapts to the evolving educational landscape, and continues to offer high-quality instruction that meets both legislative requirements and the needs of our diverse student body. Here are some key areas of institutional support that could be beneficial:

- **Professional Development Funding and Resources:** Increased funding and resources dedicated to professional development would enable faculty to acquire the necessary skills and knowledge for teaching BSTEM and STEM transferable mathematics courses. This support could include access to workshops, seminars, and courses focused on related subjects as well as modern pedagogical techniques.
- **Curriculum Development Support:** Assistance in curriculum development and redesign could help the department adapt its offerings to comply with legislative changes and shifting student needs. This might involve support from curriculum specialists, data on emerging educational trends, and resources for integrating technology and innovative teaching methods into the curriculum.
- **Recruitment and Retention Initiatives:** Strategic support for recruiting and retaining faculty with expertise in statistics and areas of mathematics that align with the new curriculum priorities is crucial.
- **Technology and Infrastructure Upgrades:** Investment in technology and infrastructure to support innovative teaching methods, such as blended or online learning platforms, could significantly benefit the department. This includes software for statistical analysis, online course management systems, and hardware upgrades for classrooms and the mathematics lab.
- **Mentorship and Peer Support Programs:** Institutional backing for mentorship and peer support programs within the department could facilitate smoother transitions for faculty moving into new teaching areas. This support could include scheduling stipends for mentorship activities and recognition of mentorship roles in faculty evaluations.
- **Research and Collaboration Opportunities:** Encouraging and supporting faculty involvement in research and collaboration with other institutions could enhance the department's adaptability and innovation. This might involve funding for research projects, support for attending conferences, and initiatives to foster partnerships with other colleges, universities, and industry partners.
- **Monitoring and Feedback Mechanisms:** Institutional support for developing and implementing monitoring and feedback mechanisms to assess the effectiveness of the department's adaptation strategies is vital. This could include tools for collecting feedback from students

and faculty, as well as support for ongoing assessment and program evaluation.

- **Data Collection and Analysis:** Institutional support for data collection in the Mathematics Department is crucial for tracking and analyzing student and faculty performance, curriculum impact, enrollment trends, diversity metrics, and the effectiveness of technology and infrastructure, thereby enabling informed decision-making and targeted improvements across all aspects of the department's operations.

By securing institutional support in these areas, the Mathematics Department can strengthen its capacity to overcome the anticipated staffing challenges, enhance its program offerings, and continue to fulfill its mission of providing exemplary mathematics education to its students.

8. What key elements of your department culture facilitate and impede your program's ability to achieve its desired student outcomes?

The Mathematics Department has cultivated a culture deeply rooted in collegiality and collaborative learning, significantly facilitated by our Professional Learning Community (PLC). This collaborative atmosphere has been instrumental in bringing some faculty members together to exchange ideas, share experiences, and learn from one another. The participation in various PLCs, including the Board of Trustees Math 54 PLC, the departmental PLC, the Equitizing Gateway Courses (EGC), and the equity grant for the National Science Foundation (NSF), exemplifies our department's commitment to professional development and equity. Furthermore, our initiative in crafting a department-specific equity statement underscores our proactive stance toward creating an inclusive and equitable learning environment.

While these elements of our department culture greatly contribute to our success in achieving desired student outcomes, we also recognize potential challenges that could impede our progress. These include:

- **Adaptation to Change:** The department may encounter resistance to adapting new teaching methodologies or curriculum adjustments that align with legislative changes and our equity goals.
- **Equitable Resource Distribution:** Ensuring that all members have equitable access to resources necessary for their professional development and to participate fully in equity initiatives can be challenging.
- **Innovative vs. Traditional Practices:** Finding the right balance between upholding traditional academic rigor and incorporating innovative teaching practices that meet the diverse needs of our students is a continuous challenge.
- **Effective Communication:** Maintaining clear and consistent communication throughout the department, as well as engaging all faculty members in department initiatives, especially in a department with a significant number of part-time faculty, can be challenging.

To navigate these challenges, our department is committed to fostering open dialogue, embracing feedback, and strengthening our commitment to shared governance and ongoing professional development. By enhancing these aspects of our department culture, we aim to create an even more supportive and dynamic environment where every faculty member is empowered to contribute to our collective mission of achieving the desired student outcomes for all students.

Staff Support and Professional Development:

9a. Discuss how your program involves and supports its staff (classified, non-faculty, and PT/FT faculty).

The math department places a strong emphasis on fostering a supportive and collaborative environment for all its staff members, including classified staff, non-faculty, and both part-time and full-time faculty. This commitment is exemplified through the establishment and maintenance of a Professional Learning Community (PLC), which has been funded as part of our department's DPAC action plan over the past few years.

The primary goal of the PLC is to cultivate a community of educators who are empowered to share their classroom experiences and insights gained from various professional development activities. This forum has facilitated valuable exchanges between faculty members, allowing them to learn not only from each other but also from other departments within the college. To enrich these discussions, we have invited guest speakers, organized student panels, and engaged in other interactive sessions that broaden our understanding of effective teaching practices and the diverse needs of our student body.

Another critical aim of the PLC is to create opportunities for math educators to connect in ways that were previously challenging due to scheduling constraints or departmental silos. By providing a 'safe space' for open dialogue and shared learning, the PLC encourages faculty to discuss successes, challenges, and innovative strategies without fear of judgment. This environment fosters a sense of community and mutual support that is vital for personal and professional growth.

Furthermore, many of our faculty members have actively participated in national and regional equity initiatives, underscoring our department's commitment to inclusivity and equity in education. This includes involvement in the Equity Grant for the National Science Foundation (NSF), participation in the Engaging the Gateway Course (EGC) initiative, and attendance at the National Conference on Race and Ethnicity (NCORE), among others. These experiences have not only enriched the participants' teaching practices and perspectives but have also contributed to the department's collective knowledge and approach to addressing equity gaps.

In conclusion, the Math Department's efforts to involve and support its staff through the PLC and participation in equity-focused initiatives reflect a deep-seated commitment to enhancing educational outcomes for all students. By fostering a culture of collaboration, continuous learning, and equity-mindedness, we aim to not only improve our teaching practices but also to make a meaningful impact on our students' academic journeys.

9b. What roles do your program's staff play on campus and in the off-campus community?

As we reflect on the progress made since our last review period, it is imperative to recognize the dedication and active participation of our staff in a variety of professional activities. These endeavors not only signify a personal and collective commitment to professional growth but also directly contribute to the enrichment of our program and the broader educational community. The following list highlights the specific contributions of each staff member, illustrating the dynamic roles they play both on our campus and within the larger academic and local communities. Their involvement spans from enhancing equity and inclusion within our institution to participating in national conversations about educational best practices. It is through these varied roles and activities that our staff members exemplify the core values of our program, steering us towards a future where academic excellence and community engagement are inextricably linked.

- **Brian Rodas** and **Jason Wang** participate in the Equitizing Gateway Courses and Department PLC, actively contributing to the professional development and equity initiatives on campus.
- **Keith Ouellette** has enhanced STEM skills through week-long workshops, promoting technical proficiency within the campus community. Keith was a co-director and content creator for the Math Modules.
- **Gail Edinger** and **Kristin Lui-Martinez** serve on the Faculty Association and various senate committees, playing a pivotal role in institutional governance and policy-making. Kristin was a content creator for the Math Modules.
- **Mario Martinez** is notable for his long-standing service on the SMCFA Executive Committee and as a key member of the Collegewide Benefits Committee.
- **Novita Phua** has been invited to join the Personnel Policies committee and contributes through NSF coaching, emphasizing faculty development.
- **I-Shen Lai** is preparing to begin an NSF grant in Spring 2024, indicating future involvement in grant-based educational enhancement. She was a content creator for the Math Modules while she was serving as an adjunct faculty at SMC.
- **John Quevedo** and **Matthew Hancock** have been actively involved in NSF grants for equitable teaching practices, demonstrating a focus on diversity and inclusion. Mathew was a content creator for the Math Modules.
- **William Pachas** and **Hafedh Herichi** are involved in Department PLCs, with Hafedh additionally contributing to the Equity Committee and NASA's MUREP MC 3I project, enriching the Math Department's educational resources. Hafedh dedicates numerous hours per week holding workshops for his students.
- **Adam D. Richardson** and **Matt Musselman** engage in curriculum and student affairs committees, ensuring that academic and student needs are met.
- **Jesus Lopez**, **Maribel Lopez**, and **Jamar London** contribute to the Academic Senate and curriculum committees, influencing the educational trajectory of the program. Jamar is serving as the president of the Academic Senate.
- **Kristin Ross** and **Colleen McGraw** play roles in grade appeals and equity initiatives, ensuring fair and equitable academic standards.
- **Maribel Lopez** participates in the PLC, did a sabbatical on Common Core, understands the AN 705/1705 law and has analyzed this for the department.
- **Alan Emerson** participates in the PLC, contributing to collaborative learning and development.
- **Peter Lee** is involved with AMATYC, engaging with national math educator communities.
- **Mark Foster** is piloting OER for math 54, innovating in resource accessibility.
- **Aaron Simo** has participated in an equity Grant for NSF, PLC for math 54, attended conferences on equitable grading and other equity endeavors, and served as a former PLC lead for Board of Trustees equity grant for math 54.
- **Alex Bene** leads the PLC, facilitating departmental learning and growth.
- **Diem Nguyen** plays a pivotal role in STEM education, leading the STEM skills week, STEM workshops, and creating and running the Math Bootcamp Summer 2023. She's also piloting an OER for math 4. Diem was the coordinator for creating Math Modules project that are Canvas modules meant to strengthen students' mathematical skills in prealgebra, algebra, precalculus, and all levels of calculus.
- **Sam Soleymani** has been a co-creator of the Math Bootcamp and a content creator for the Math Modules. In the past has also been involved in AMATYC, preparing students for student league contests.

It should be noted that Brian, Gail, Kristin Lui-Martinez, Kristin Ross, Alex, Sam, and Jamar have attended multiple conferences given by the California Acceleration Project in the wake of AB 705.

Off-Campus Engagement:

- **Keith Ouellette** represents the program at an AVID for Higher Education Workshop, indicating a commitment to pedagogical advancement.
- **Kristin Lui-Martinez** is a regular attendee at national conferences like NCORE, AACU Transforming STEM, and MESCaL Unconferences, bringing back innovative ideas and practices to the campus.
- **William Konya** connects the program to broader educational and social issues through his attendance at NCORE and facilitation of workshops for men of color.
- **Quyen Phung** showcases the program's commitment to technical education by conducting workshops that contribute to the STEM community.
- **William Pachas's** dedication to faculty professional growth is reflected in his participation in the Sabbaticals committee.
- **Hafedh Herichi** bridges on-campus activities with national research and educational initiatives through his contribution to the community via the NASA MUREP project and various conferences.
- **Adam D. Richardson** highlights a commitment to educational technology and innovation by presenting at the CMC-S conference and developing resources for a new online homework system.

These diverse roles underscore the staff's deep involvement in both the academic and broader educational community, reflecting a strong commitment to fostering growth, equity, and excellence within and beyond the program.

9c. Discuss how your staff's professional activities since the last review period have positively impacted your program.

Since the last review period, the professional activities of our staff have been a driving force in advancing the mission and effectiveness of our program. The commitment to professional development, equity, and educational excellence is evident through a wide array of contributions.

- **Professional Development and Curriculum Enhancement:** Faculty members such as Keith Ouellette have consistently engaged in workshops to sharpen STEM skills, directly impacting our program's ability to offer current and relevant content. The active roles played in Department PLCs by Brian Rodas and Jason Wang have fostered a collaborative environment where best practices are shared and developed, leading to a more cohesive and innovative curriculum.
- **Equity and Inclusion Initiatives:** Through NSF grants and participation in equity-focused PLCs, staff members such as Kristin Lui-Martinez and John Quevedo have brought back valuable insights into equitable teaching practices. This has translated into a learning environment that not only supports but celebrates diversity, providing an inclusive space for all students to thrive.
- **Governance and Policy Influence:** The involvement in campus governance and policy committees by faculty like Gail Edinger and Mario Martinez ensures that our program is represented in key institutional decisions. This participation helps align our program's goals with the broader institutional objectives, particularly in areas that affect faculty and student welfare.
- **Community and National Engagement:** The presence of our staff at national conferences and workshops, as demonstrated by the engagements of William Konya and Matthew Hancock, has positioned our program at the forefront of national discussions on educational strategies. This exposure has allowed us to incorporate pioneering educational trends and technologies into our curriculum, thereby enhancing student learning experiences.
- **Student Mentorship and Support:** The mentorship roles undertaken by faculty, including club advisories by John Quevedo and academic support through boot camps by Colleen McGraw, Diem Nguyen, and Sam Soleymani have fostered a supportive and nurturing environment for students. These efforts have not only improved student engagement but have also contributed to the development of a robust support system for our learners.
- **Enhanced Faculty Engagement in the Math Lab:** A noteworthy practice that has been instituted since the last review period is the requirement for all mathematics faculty to dedicate one hour of their office hours to the mathematics lab or conduct a mathematics workshop open to all students. This policy has significantly contributed to creating a community within the lab, bridging the gap between faculty and students. By facilitating direct interaction in a supportive setting, faculty members have been able to offer personalized guidance, foster collaborative learning, and encourage peer-to-peer engagement among students. This initiative underscores the department's commitment to making the math lab a central hub for learning and community building.
- **Research and Scholarly Contributions:** The research endeavors and scholarly contributions, particularly by Hafedh Herichi, have enhanced the academic stature of our program. Such activities have not only contributed to the body of knowledge in the field but have also provided students with exposure to cutting-edge research and practical applications.
- **Impactful Donations and Scholarships:** The Mathematics Department has also been the beneficiary of generous donations from a former math lab student, further emphasizing the lasting impact of the department's support on its alumni. The establishment of four Imagine scholarships, each awarding \$10,000 to students who have actively used the math lab, highlights the importance of this resource in supporting students' academic journeys. Additionally, the anonymous donor's contribution of an additional \$20,000 over two consecutive years to assist needy students in acquiring access codes for their online math homework underscores the critical role of financial support in ensuring equitable access to educational resources. These donations not only alleviate financial burdens for students but also reinforce the value of the math lab as a vital support system.

Since the last review period, the Mathematics Department at SMC has significantly enhanced its program through dedicated professional activities focusing on growth, equity, and community engagement. Faculty involvement in professional development, collaborative Department PLCs, and equity-focused initiatives has enriched the curriculum and fostered an inclusive learning environment. The requirement for faculty to engage in the math lab and conduct workshops has strengthened the community within the department, further supported by generous donations enabling scholarships and access to essential resources for students in need. These combined efforts have profoundly impacted the department's educational offerings, governance, and student support systems, maintaining the program's position as a leader in academic excellence and student success.

9d. What additional areas of professional development and trainings are needed for your staff?

To support faculty in navigating recent educational reforms and enhancing overall teaching effectiveness, several professional development areas stand out:

- **Legislative Compliance and Curriculum Development:** Training to help faculty understand recent legislative changes' implications, focusing on strategies for curriculum adaptation. This includes maximizing student success in transfer-level coursework and integrating effective student placement practices.
- **Equity-Focused Pedagogy Training:** Workshops on culturally responsive teaching, unconscious bias awareness, and inclusive curriculum design are essential for creating an environment where all students have the opportunity to succeed.
- **Data Analysis for Student Success:** Developing skills in data analysis to monitor student outcomes, identify equity gaps, and tailor teaching methods to improve success rates.
- **Innovative Teaching and Assessment Strategies:** Exploring creative course design, assessment methods, and support models that align with the goal of accelerating student progress in foundational subjects.

- **Enhanced Student Support and Advising:** Enhancing advising practices to guide students effectively through their academic pathways, ensuring that faculty can provide informed counsel on course selection and academic planning.
- **Technological Proficiency in Education:** Training in the latest educational technologies to facilitate engaging, effective, and accessible learning experiences. This includes mastery of learning management systems and digital tools that support collaborative learning and assessment. Providing faculty with training on the latest AI tools and methodologies that can be integrated into the curriculum. This includes understanding the ethical implications of AI, exploring AI-driven analytics for personalized learning, and utilizing AI to enhance efficiency and teaching methods. By keeping abreast of AI developments, faculty can prepare students for the future job market and foster an environment of innovation and critical thinking regarding the role of technology in society.
- **Professional Collaboration and Learning Communities:** Encouraging active participation in communities focused on sharing strategies, challenges, and successes related to curriculum innovation and student support.
- **Research Skills and Grant Writing:** Empowering faculty with the skills to engage in educational research and secure funding for projects that advance teaching and learning.

Additional Areas for Professional Development

- **Mental Health First Aid:** Training faculty to recognize signs of mental health issues or crises in students, providing them with the tools to respond appropriately and supportively.
- **Sustainability in Curriculum:** Incorporating principles of sustainability into the curriculum to promote environmental awareness and responsibility among students.
- **Global and Multicultural Education:** Developing courses and content that provide students with global perspectives, preparing them for a diverse and interconnected world.
- **Leadership and Management Skills:** For faculty members aspiring to take on leadership roles or manage larger projects, training in leadership, conflict resolution, and project management can be highly beneficial.

By focusing on these areas, faculty will not only be better equipped to meet the demands of legislative changes but also engage in broader educational advancements. These efforts collectively contribute to a dynamic and inclusive educational environment, promoting student success and institutional excellence.

If applicable:

10a. In what professional organizations does your program's staff participate?

Many faculty of the mathematics department are members of professional organizations including:

- AMATC – The American Mathematical Association of Two-Year Colleges
- MAA – the Mathematical Association of America
- CMC3 – California Mathematics Council of Community Colleges
- FACC – Faculty Association of California Community Colleges
- NCTM – National Council of Teachers of Mathematics

10b. Discuss your staff's grant-funded research and projects.

The Math Department at SMC has demonstrated a strong commitment to enhancing educational equity and supporting student success through active participation in several grant-funded initiatives. These projects have not only bolstered our department's resources but also enriched our faculty's expertise and our curriculum, directly benefiting our students.

- **NSF Equity Grant Involvement:** Several of our faculty members have actively engaged with the National Science Foundation's equity grant. Participants including Hadeel Herichi, Novita Phua, Matthew Mussleman, Matthew Hancock, Aaron Simo, Kristin Ross, and I-Shen Lai, with John Quevedo and Kristin Lui-Martinez contributing as equity coaches. This involvement underscores our department's dedication to fostering an inclusive and supportive learning environment, ensuring that all students, irrespective of their backgrounds, have equal opportunities to succeed.
- **Equitizing Gateway Courses:** Our engagement with the Equitizing Gateway Courses initiative across three cohorts highlights our proactive approach to addressing disparities in foundational mathematics courses. Faculty members such as Brian Rodas and Kristin Ross served as equity coaches, guiding a diverse group of participants through the process of implementing equity-focused pedagogical strategies. This initiative aims to dismantle barriers in gateway courses, making them more accessible and equitable for all students.
- **Board of Trustee Fellowship Grant for PLC:** The Board of Trustee Fellowship Grant supported the creation of a Professional Learning Community (PLC) specifically for Math 54 (Statistics) during the 2021-2022 academic years. This PLC concentrated on adopting equitable practices to support students in this critical gateway course. The broad participation across our faculty signifies our collective effort to refine our teaching methodologies and curriculum in ways that directly enhance student understanding and success in statistics.
- **STEM Grant for Module Creation:** Under the leadership of Diem Nguyen, the STEM grant facilitated the development of comprehensive STEM modules, freely available to all students. These modules, equipped with videos, worksheets, and learning assessments, are designed to help students master essential topics in STEM mathematics courses. This initiative not only aids in preparing our students for

the challenges of STEM fields but also exemplifies our commitment to leveraging technology and innovative teaching tools to support student learning. See more details in Section 14a.

Through these diverse grant-funded projects, our staff has been able to make significant strides in promoting equity, enhancing pedagogy, and providing additional resources to support our students' academic journeys. Looking forward, we anticipate continuing these efforts, seeking out further opportunities for grant participation, and enhancing our curriculum and support systems to foster an environment where all students can thrive.

10c. Discuss your program's partnerships with regional educational institutions.

Our Math Department has actively fostered partnerships with regional educational institutions to enhance access to college-level mathematics courses for high school students and expand our educational outreach. These partnerships have been instrumental in bridging the transition from high school to college and promoting SMC as a viable and attractive option for local students' post-secondary education.

Dual Enrollment Initiatives: Our collaboration with Saint Monica High School and Santa Monica High School PBL (Project-Based Learning) Pathway Program represents a significant stride towards integrating college-level mathematics into the high school curriculum. By offering dual enrollment versions of Calculus 1 (Math 7), we have opened avenues for high school students to engage with rigorous academic content early in their educational journey. This approach has been refined by interviewing and hiring teachers directly from these high schools to teach the courses on their campuses. This strategy addresses past logistical challenges related to mismatched schedules and provides students with a seamless college experience within their familiar educational environment. It is particularly beneficial for minor students, eliminating the need for commuting to SMC and allowing them to partake in college courses in a setting where they feel comfortable and supported.

Expansion to Malibu Campus: The inauguration of classes at the Malibu campus, particularly with the offering of two sections of statistics, marks an expansion of our department's reach within the local community. The success and high fill rates of these classes have sparked discussions about increasing the number of sections and possibly introducing other courses at this campus. Offering gateway classes in Malibu not only enhances the Math Department's presence in local areas but also captures a segment of students who may not have considered enrolling at SMC due to the challenges of commuting to the main campus in Santa Monica.

These partnerships are foundational to our efforts to build a community between SMC and local high schools, fostering a sense of continuity and support for students as they transition from high school to college. They also serve as a conduit for local talent, encouraging students to continue their education within the SMC community. Our ongoing commitment to these partnerships reflects our dedication to broadening educational opportunities, supporting local communities, and enhancing the overall educational landscape of the region. As we look to the future, we remain focused on strengthening these relationships and exploring new avenues to support our students and the broader community.

10d. Discuss your program's industry partnerships and relationships.

N/A

10e. Discuss how your faculty are upskilled to address industry and/or curricular changes.

N/A

10f. Provide your program's advisory board membership and meeting dates since the last review period.

N/A

D. Curriculum, Courses, and Scheduling

11. Analyze your program's enrollment trends disaggregated by modality and other course attributes. Reflect on the extent to which your current course offerings and class scheduling practices maximize student success. Include any evidence to support your points. Discuss any changes your department plans to better respond to students' needs.

In examining the enrollment trends within the Math Department we observe that our approach to course offerings and scheduling practices has been instrumental in promoting student success. Our strategy has been to offer a range of sections for our most popular courses, such as Math 2, 7, and 54, to accommodate diverse student schedules and learning preferences. We schedule these courses throughout different times of the day—morning, afternoon, and evening—and across multiple modalities, including on-ground, online, and hybrid formats.

While we strive to provide a variety of modalities for all our courses, operational constraints require us to be selective and strategic in our offerings, keeping within the department's allocated units. Through careful analysis of enrollment trends, we ensure that even for courses with typically lower enrollment, such as those filling only 2-3 sections, we offer multiple sections and modalities when feasible.

Data from the past five years indicates a shift in student preferences, with evening and early morning classes showing a decline in popularity. When the opportunity arises to open new sections in high-demand courses like calculus 1, our data suggests that mid-morning or early afternoon starts are more likely to reach capacity compared to those at 7 am or in the evening slots.

Additionally, there's a marked preference for courses that meet two days a week. Consequently, we have adjusted our offerings to provide more 3-6 unit courses in a two-day-a-week pattern while still maintaining a selection of four-day-a-week courses to cater to all student needs, though fewer in number.

Our online asynchronous Math 54 course has emerged as a highly popular choice among students. However, this preference does not extend to all courses, with on-ground and hybrid versions of other courses being more favored. Our hybrid courses typically meet once a week via

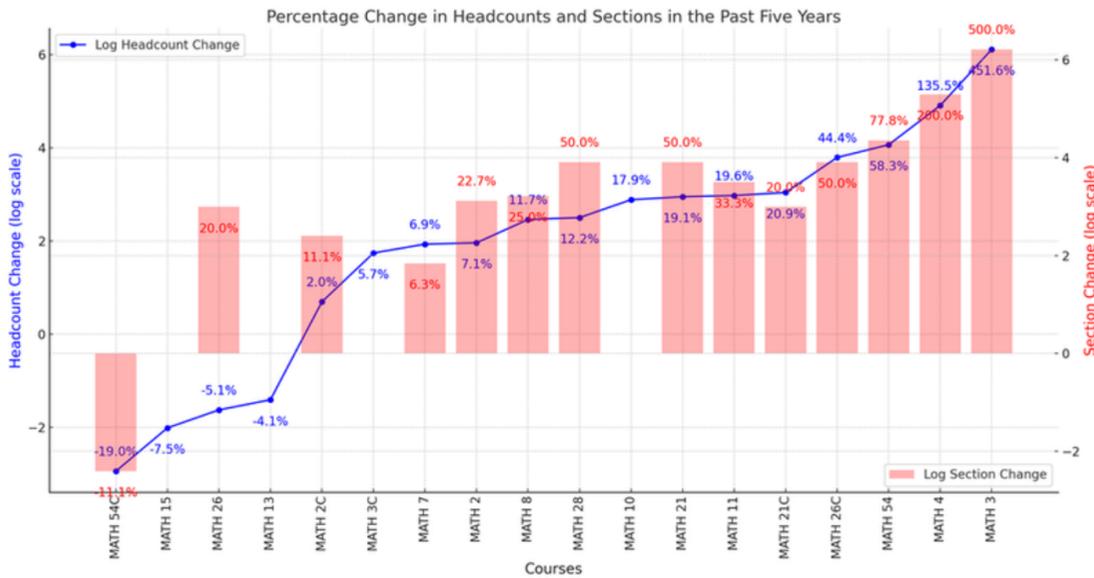
Zoom and the remaining time in person. It's important to note that while online courses relying solely on Zoom meetings are less successful, they remain a preferred modality for students who value the flexibility they offer.

Moving forward, the department is planning to adapt its offerings to better respond to these evolving student preferences and needs. This includes prioritizing mid-day classes, increasing two-day-a-week course formats, and enhancing our hybrid and online course structures to improve success rates.

Our commitment to maximizing enrollment and student success is an ongoing process, and we will continue to leverage enrollment data to make informed decisions about our course offerings and scheduling practices.

Given the legislative changes, such as AB 705, which led to the phasing out of basic skills classes, our department has been particularly mindful of adapting our course offerings accordingly. AB 705 mandates community colleges to maximize the probability that a student will enter and complete transfer-level coursework in math within a one-year timeframe, prompting us to strategically adjust our course offerings.

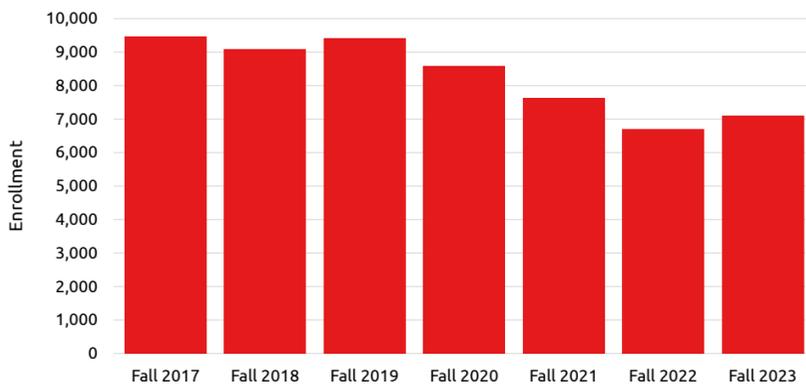
This strategic shift is visible in the enrollment trends and section offerings for courses designed to meet the new mandates, with a focus on enhancing pathways that lead directly to transfer-level math courses. Our proactive adjustments reflect a dynamic approach to curriculum planning and resource allocation, emphasizing student success and efficiency in the post-AB 705 era.



By aligning section changes with headcount trends, we ensure that our course offerings and class schedules are tailored to meet and anticipate the evolving needs of our students. The analysis of these trends not only underscores our strategic response to changing student needs and legislative mandates but also highlights our ongoing efforts to refine and enhance our course offerings and scheduling practices.

Course Enrollment

Math

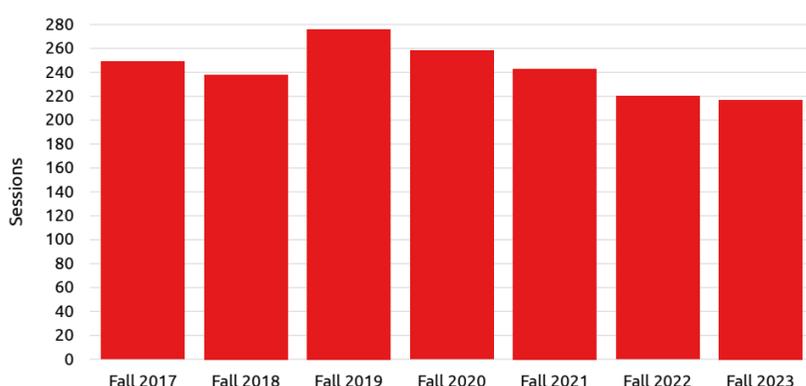


Measures: Enrollment

	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023
Measures	9,455	9,093	9,421	8,584	7,635	6,707	7,107

Section Offerings

Math



Measures: Sessions

	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023
Measures	249	238	276	258	243	220	217

12. What institutional support do you need to create a more equity-minded and student-centered curriculum, course offerings, and class schedules?

To further cultivate an equity-minded and student-centered curriculum in our department, we require ongoing institutional support that aligns with our strategic objectives and addresses the diverse needs of our student body. Our DPAC (Department Program and Curriculum) action plan serves as a roadmap for this endeavor, outlining key areas where support is critical to achieving our mission. These areas include:

- **Professional Development for Faculty:** There is a pressing need for specialized professional development opportunities, particularly in the area of teaching statistics. As data literacy becomes increasingly important across disciplines, equipping our faculty with the tools and techniques to effectively teach statistics is paramount. This not only includes pedagogical strategies but also an understanding of how to make statistics relevant and accessible to a diverse student population.
- **Development of Supportive Course Structures:** The introduction of a calculus course with integrated support is an initiative we are eager to pursue. This course design would allow students to engage with calculus content while simultaneously receiving the foundational support necessary to succeed. Such courses require thoughtful development and resources to ensure they meet the needs of all students, particularly those who may have traditionally faced barriers in STEM fields.
- **Sustaining the Professional Learning Community (PLC):** Our PLC has been instrumental in fostering a collaborative and reflective teaching community within the department. The PLC's focus on support courses for key subjects like Statistics (Math 54) and Pre-calculus (Math 2/3/4) has led to meaningful exchanges about equity and pedagogy. To continue this momentum, we need ongoing support for activities such as guest speakers who specialize in equity in education, student panels that provide insights into the student experience, and community-building efforts that promote a supportive and nurturing environment for both faculty and students.
- **Equity-Focused Initiatives:** Recognizing that each faculty member's journey towards understanding and implementing equity practices varies, we advocate for tailored initiatives that accommodate this diversity in experience and expertise. This includes workshops, seminars, and resources that address the multifaceted aspects of equity in education — from curriculum design to classroom management, and student engagement strategies.

By securing institutional support in these areas, the Math Department aims to not only enhance our curriculum and course offerings but also to cultivate an educational environment that is truly inclusive, equitable, and conducive to the success of every student. Our commitment to equity and student-centered learning is unwavering, and with the necessary support, we are confident in our ability to make meaningful progress towards these goals.

13. Document any substantial changes to your program curriculum since the last review and discuss what prompted these changes. Looking forward, what changes to the curriculum do you plan based on the emerging needs of your discipline, industry, student population, etc.

Since the last program review, the Mathematics Department has undergone substantial curricular changes, primarily driven by the AB 705 mandates and its amendments. The introduction of AB 705 necessitated the removal of our basic skills course offerings from the program. These courses included:

Math 18: Intermediate Algebra for Statistics and Finite Mathematics
 Math 20: Intermediate Algebra
 Math 31: Beginning Algebra
 Math 32: Plane Geometry
 Math 49: Beginning and Intermediate Algebra for Statistics and Finite Mathematics
 Math 81: Basic Arithmetic
 Math 84: Prealgebra
 Math 85: Arithmetic and Prealgebra
 Math 50: Prestatistics

This led to a fundamental restructuring of our course progression, with an emphasis on ensuring students are prepared for transfer-level mathematics. In response to these mandates, we have added offerings in precalculus, trigonometry, college algebra, finite math, and statistics with support (corequisite) to meet the new requirements.

Newly incorporated classes to our program since the last review also include:

Math 2C: Concurrent Support for Precalculus (2 units)
 Math 3: Trigonometry with Applications (3 units)
 Math 3C: Concurrent Support for Trigonometry with Applications (1 unit)
 Math 4: College Algebra for STEM Majors (4 units)
 Math 4C: Concurrent Support for College Algebra for STEM Majors (1 unit)
 Math 26C: Concurrent Support for Functions and Modeling for Business and Social Science (2 units)
 Math 54C: Concurrent Support for Statistics (2 units)

Further amendments to AB 705 will require the department to introduce a calculus with support course and to most likely discontinue the offering of courses below calculus for STEM majors. This anticipated change will necessitate the elimination of courses listed above from our current offerings, signifying a dramatic transformation in the landscape of the Mathematics Department and our course offerings.

These legislative-driven changes are meant to accelerate students' progress toward completing their transfer-level mathematics requirements, thereby enhancing their opportunities for transferring to four-year institutions in a timely manner. Despite these goals, such changes present challenges in ensuring student success in higher-level courses without the foundational support previously provided by the basic skills and currently by the requisite courses.

Looking forward, the department plans to adapt to these emerging needs by developing and implementing support models to effectively assist students in succeeding in their mathematics courses. This includes exploring innovative pedagogical approaches, enhanced tutoring services, and technology use for personalized learning pathways. The department will also monitor the impact of these curricular changes on student success and retention, making data-informed adjustments as necessary.

By aligning our curriculum with both legislative mandates and the evolving needs of our discipline, industry, and student population, we are committed to continuously evaluating and adapting our offerings to ensure they serve the best interests of our students, preparing them for academic and professional success.

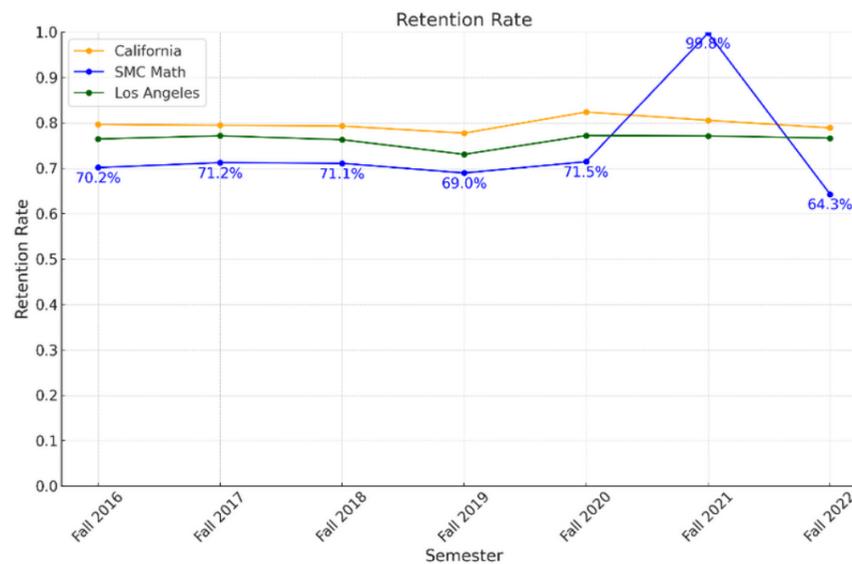
E. Evaluation, Effectiveness, and Equity:

Course Success and Retention: Indicate your program's chosen level of analyses for the review (choose one):

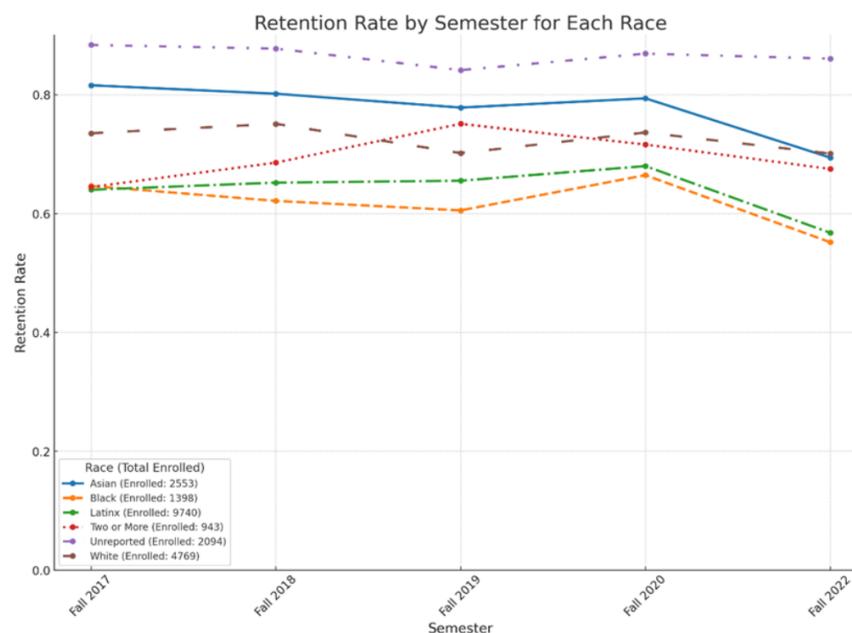
Gateway Course(s)

14a. Analyze your program's course success and retention against your program's institution-set standards (minimum threshold) and improvement goals. Discuss any significant changes/trends over time. Include your program's plans to improve course success and retention.

Retention Rates



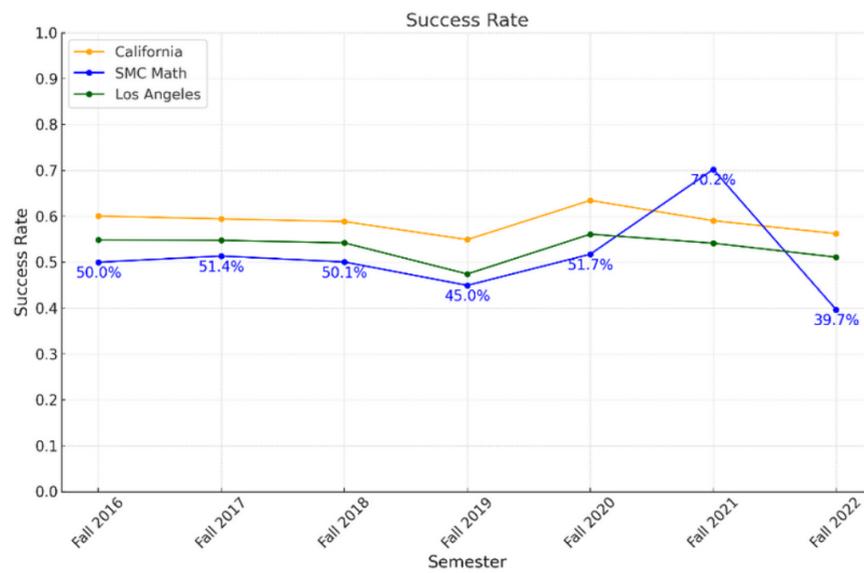
Santa Monica College's Math department has observed varying retention rates from Fall 2016 to Fall 2022, with a notable peak in Fall 2021 due to the Excused Withdrawal (EW) policy during an exceptional period. This spike does not accurately reflect true retention due to policy allowances for withdrawal without academic repercussions. Especially critical is the retention of Latinx students who make up 41% of the student body yet show a lower retention rate at 68.16% compared to the overall 74.41%, indicating a substantial impact the overall trend in the retention rate.



This data is further underscored by Tukey HSD test results, which indicate stark disparities affecting Black and Latinx students, as shown by p-values of 0.0009 and 0.0075, respectively. To address these gaps, the department is positioned to implement targeted interventions such as robust academic support and tutoring programs, the utilization of early alert systems for timely interventions, holding professional learning community sessions for faculty members, and a commitment to data-driven strategies. These steps will support the needs of Black and Latinx students, fostering an equitable environment and reinforcing retention efforts. Integrating these measures is essential for equitable education and the success of every student in math.

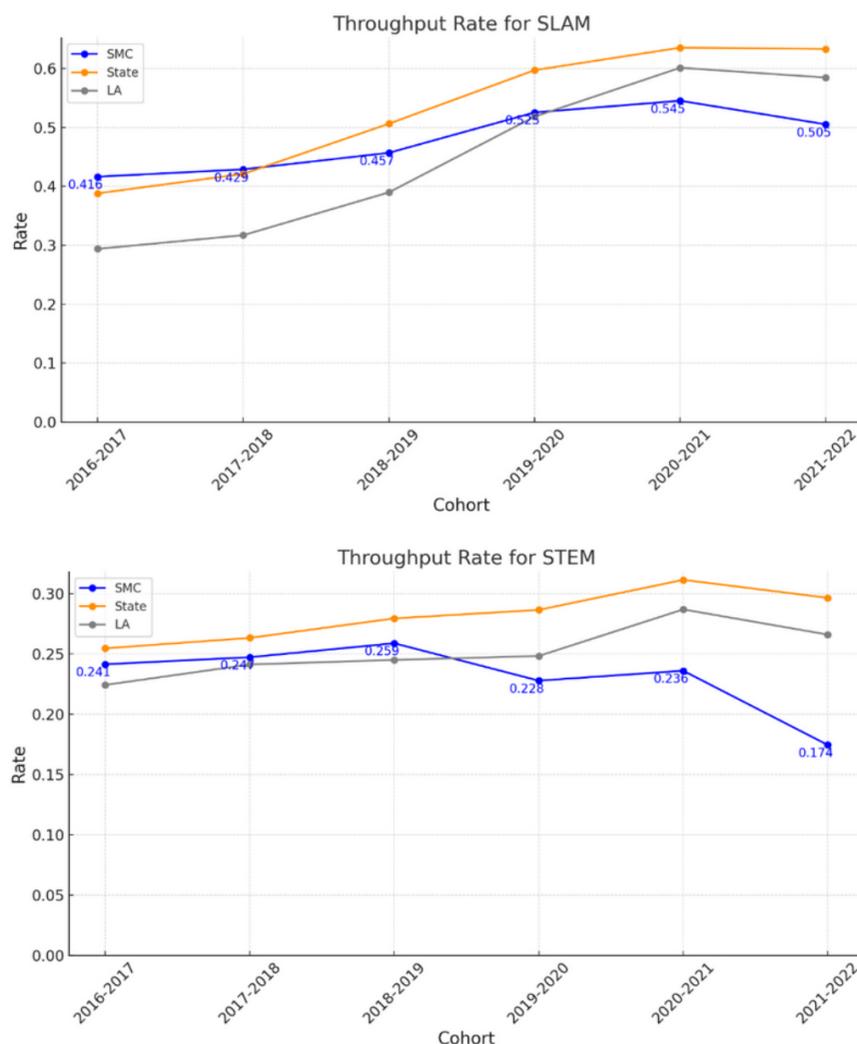
Success Rates





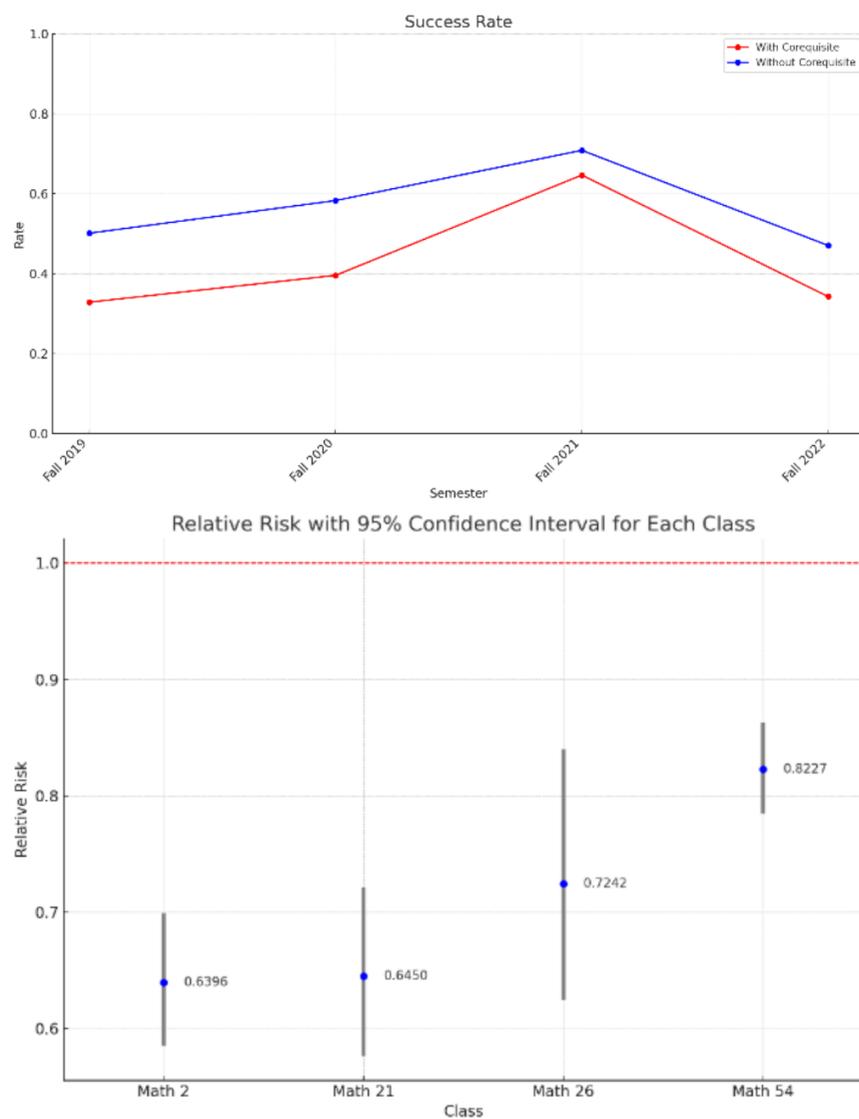
The success rate trends at SMC Math parallel those across California's community colleges and the Los Angeles district. A noteworthy nearly 5% dip from Fall '18 to '19 corresponds with a similar decline across the state and LA, aligning with the AB 705 rules' enactment. This pattern hints at broader regional or state-wide influences, possibly stemming from educational policies or macro-level socio-economic variables. However, Fall '21 and '22 showed unique deviations at SMC. The higher success rate in 2021 is tied to the EW policy and the shift to remote learning during the pandemic. Conversely, the drop in 2022 is linked to the EW policy's removal and the return to on-ground classes. It's vital to recognize that the lower success rates, especially in math courses at SMC, don't denote a drop in educational quality, but highlight the rigorous nature of these courses, setting a high academic bar for students.

Throughput Rates



The throughput rates for SLAM and BSTEM spanning from 2016-2017 to 2021-2022 are depicted above. The SLAM throughput rate represents the proportion of students who complete either statistics or finite mathematics as their initial and terminal course within a one-year timeframe. Conversely, the BSTEM throughput rate quantifies the percentage of students who finalize a course in Calculus 1 or Applied Calculus for Business after commencing with College Algebra, Trigonometry, Precalculus, or directly beginning with Calculus 1 or Applied Calculus, all within a one-year timeframe. The throughput rates reveal a steady growth for SLAM, peaking at 0.55 by 2020-2021, possibly credited to the offering of Math 50 (Prestatistics) until Fall 2021. Though SMC's growth has been consistent, it was more gradual compared to state and LA averages. By 2021-2022, a slight dip to 0.51 necessitates a deeper analysis of underlying factors to sustain the upward trend. Initially, SMC had a promising BSTEM throughput rate of 0.24, mildly increasing to 0.26 by 2018-2019. However, post-AB 705 in 2019, a noticeable drop to 0.23 in 2019-2020 was observed, possibly due to challenges adapting to new placement strategies, potentially misplacing students into courses they weren't fully prepared for in the absence of placement tests. A minor recovery in 2020-2021 was overshadowed by a significant drop to 0.17 in 2021-2022, marking the post-Covid era's onset, contrasting with the upward trends in the state and LA systems, especially with the state achieving a 0.31 rate by 2020-2021.

Classes with Corequisite vs. Standalone Classes



The success rate for Math 2, 26, 21, and 54, aggregated, with corequisite and without corequisite is shown above. Courses with corequisites have shown fluctuations in their success rates over the semesters, with a peak observed in Fall 2021. Conversely, courses without corequisites have generally maintained a more consistent performance, with success rates typically hovering above those of their corequisite counterparts, especially in recent semesters. To measure the strength of association, the relative risk of success has been calculated for each class. The relative risk values for all classes were below 1, indicating that, on average, the success rate in classes with a corequisite was lower than in those without. The confidence intervals for all classes do not contain the value 1, further strengthening the evidence that the presence of a corequisite has a consistent association with a lower success rate.

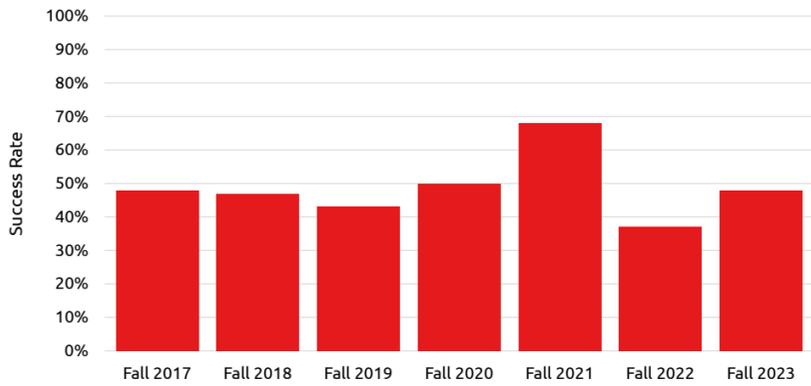
The department aims for a success rate target of at least 0.5 for gateway courses to align students' performance with pre-Covid trajectories and other institutions. To boost BSTEM throughput and success in gateway courses, several steps are being taken:

- **Curriculum Enhancement:** We're continuously re-evaluating and modifying curriculum objectives in support classes to streamline students' preparation for advanced courses, enhancing the efficiency and relevance of these foundational classes.
- **Math Modules Deployment:** Our faculty have developed and are actively promoting the use of Math Modules across all classes, encompassing two categories: AT&S (Algebra, Trigonometry, and Statistics) and Calculus. The AT&S category, covering a broad range from basic skills and prealgebra to geometry, trigonometry, and precalculus, currently benefits 1,400 students. On the other hand, the Calculus category, addressing topics from single variable to multivariable calculus, serves 677 students. Each module is equipped with instructional videos, guided worksheets, and self-assessment quizzes, designed to reinforce key concepts and support self-directed learning. These modules are in a constant state of evolution, responding to students' feedback to ensure they meet the learners' needs effectively. With the number of students engaging with these modules projected to grow, instructors have begun reporting noticeable improvements in their students' performance, attesting to the positive impact of the modules on educational outcomes. This initiative highlights our commitment to leveraging innovative educational tools to enhance student learning and success in mathematics.
- **Math Bootcamp Initiative:** In summer 2023, we introduced our inaugural Math Bootcamp—a series of five workshops spanning two weeks, designed to prepare students for college algebra, precalculus, trigonometry, calculus I, and statistics. Drawing interest from over 300 students and achieving attendance of more than 100, the bootcamp provided a comprehensive review of course materials, introduced various teaching technologies, and showcased essential campus resources like the math lab and the STEM lab. The overwhelmingly positive feedback highlighted the bootcamp's effectiveness in making students feel well-prepared for the fall semester.
- **STEM Workshops Collaboration:** In addition to the boot camp, we've established a series of weekly STEM workshops, facilitated by mathematics teachers. These workshops, which have been a part of our support system for the past few years, offer a scheduled series of sessions that align with the curricula of Math 2, 7, and 54. They are specifically designed to cover critical topics necessary for student success in these courses. Attendees have consistently found these workshops beneficial, reinforcing their understanding and application of mathematical concepts.

Together, these initiatives—ranging from curriculum enhancement and the innovative use of Math Modules to the successful launch of our Math Bootcamp and the ongoing STEM workshops—underscore our department's dedication to creating a nurturing and supportive educational environment. By addressing the academic and preparatory needs of our students, we are not only working towards meeting our success rate targets but also ensuring that our program continues to uphold the highest standards of academic excellence. These concerted efforts are pivotal in our mission to improve success, retention, and throughput rates, demonstrating our unwavering commitment to student achievement and equitable educational opportunities at SMC Math.

Course Success Rates

Math



Measures: Success Rate and Success Count and Attempts

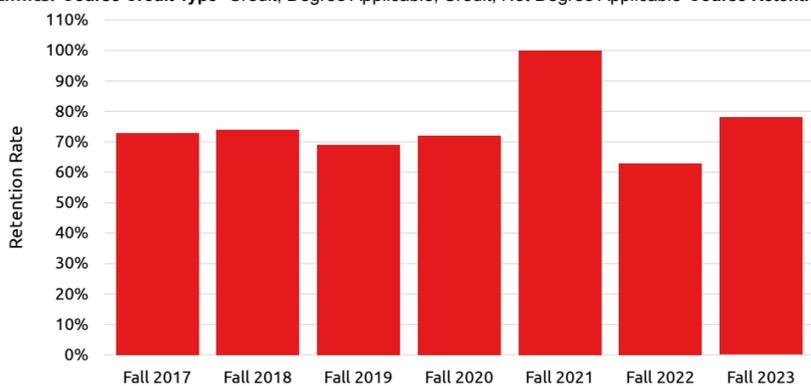
	Fall 2017			Fall 2018			Fall 2019			Fall 2020			Fall 2021			Fall 2022	
	Success Rate	Success Count	Attempts	Success Rate	Success Count	Attempts	Success Rate	Success Count	Attempts	Success Rate	Success Count	Attempts	Success Rate	Success Count	Attempts	Success Rate	Success Count
Measures	48%	4,494	9,455	47%	4,265	9,093	43%	4,023	9,421	50%	4,266	8,578	68%	3,303	4,865	37%	2,500

Credit Courses Only

Course Retention Rates

Math

Limits: Course Credit Type Credit, Degree Applicable, Credit, Not Degree Applicable Course Retention Not Retained, Retained



Limits: Course Credit Type Credit, Degree Applicable, Credit, Not Degree Applicable Course Retention Not Retained, Retained

Measures: Retention Rate

	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023
Measures	73%	74%	69%	72%	100%	63%	78%

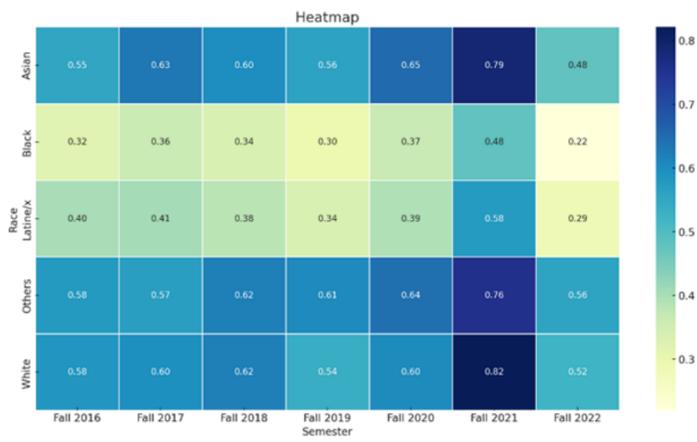
Credit Courses Only

14b. Disaggregated data: Which racial/ethnic student group completes their courses at the highest rates? Which racial ethnic groups experience the largest gaps when compared to the highest performing group? Analyze the trends across the last review period.

In our comprehensive review of student success rates across various racial and ethnic groups, the White student group consistently exhibits the highest course completion rates over the analyzed semesters. This factual observation underscores the disparities when contrasted with other groups, most notably the Black student group.

Historically, prior to the implementation of AB 705, the equity gap between the White and Black student groups was consistently around 28%. However, with the onset of AB 705 rules in Fall 2019, there was a noteworthy shift. The gap experienced a significant decrease to 24.3% during this period. A closer examination reveals that this decrease was largely due to a more pronounced drop in the success rate of White students when compared to the decrease for Black students. As illustrated in the accompanying graph, the success rate plot for White students displays a steeper downward slope from Fall 2018 to Fall 2019 compared to that of Black students.



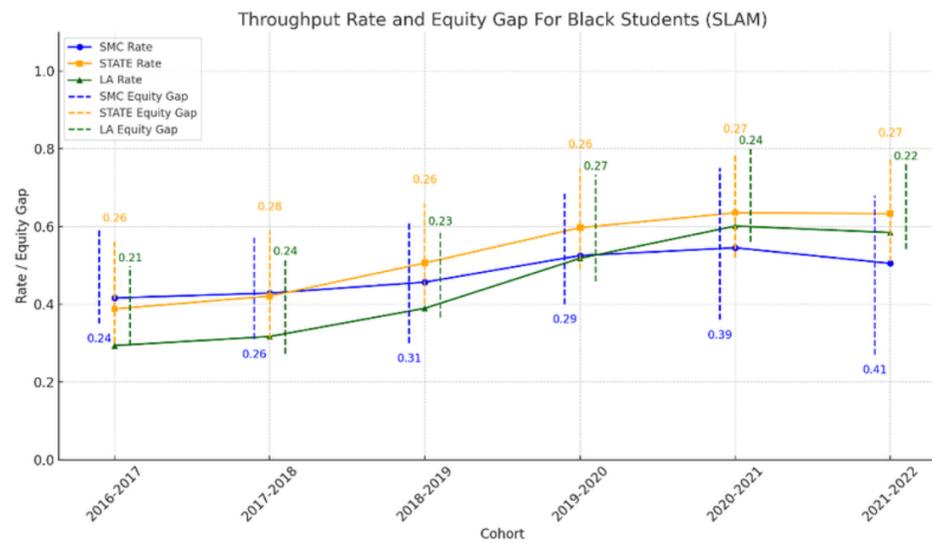


This trend, however, evolved as external circumstances changed. In the subsequent year, Fall 2020, which marked the beginning of remote instruction due to the pandemic, the equity gap for Black students increased to 28.7%. As we progressed into the combined challenges of the COVID era and the post-implementation phase of AB 705, the gap further widened to hover around the 30% range.

Equity Gaps in Throughput Rates

Equity Gap Analysis for African American Students

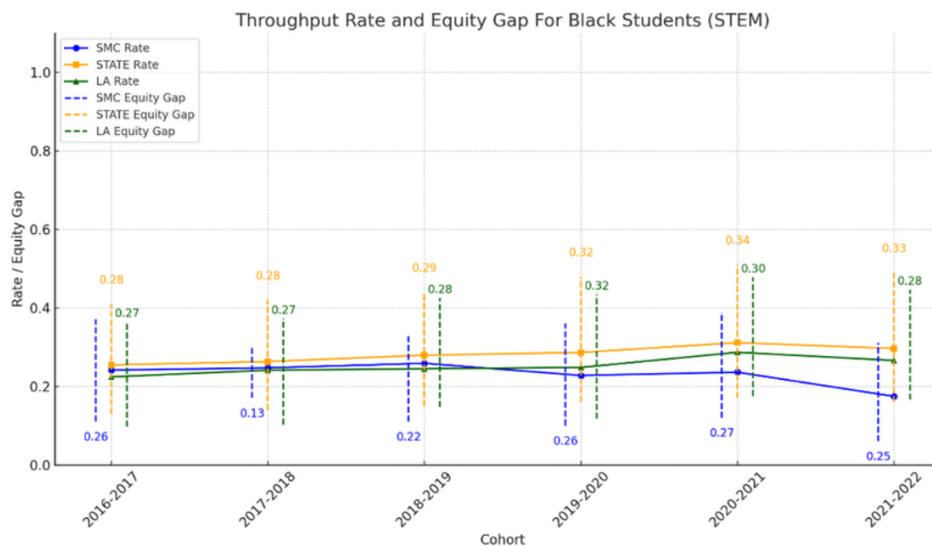
SLAM



During the period from the 2016-2017 to the 2021-2022 academic years, SMC observed changes in the equity gap for African American students within the SLAM discipline. Initially, the equity gap stood at 24% among a cohort of 108 African American students and subsequently moved to 41% with a cohort of 146 students in the 2021-2022 academic year.

When compared to the state and LA area institutions, where the African American student populations are considerably larger, the state's equity gap displayed minor variations, starting at 26% and closing at 27%. Meanwhile, the LA colleges' gap experienced a slight increase from 20.5% to 21.8%.

BSTEM



The data for SMC equity gap for Black students in BSTEM disciplines reveals a relatively promising scenario when compared to other institutions. Over the period from the 2016-2017 to the 2021-2022 academic years, SMC has maintained an equity gap in the 13% to 27% range. This trend is particularly noteworthy given the modest size of the Black student cohorts at SMC, which can cause the equity gap percentage to appear more volatile year over year.

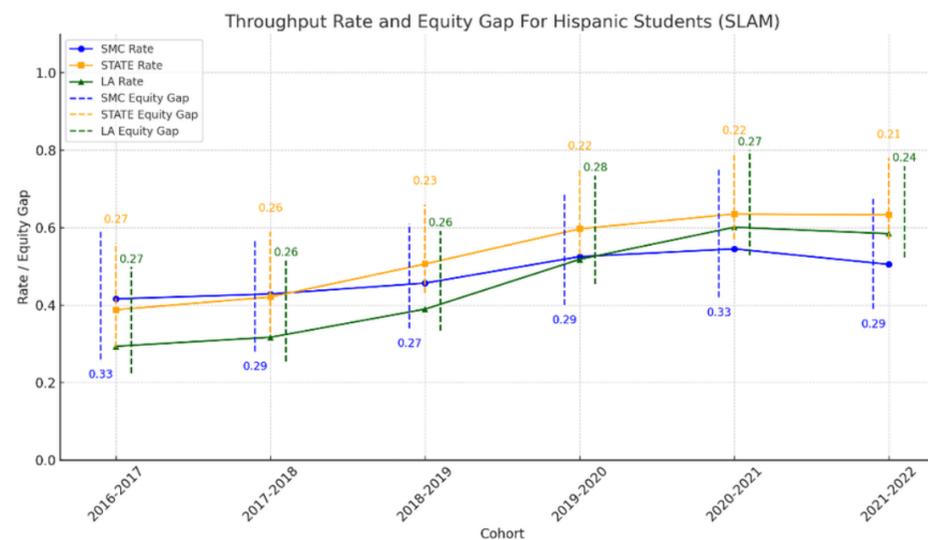
In comparison, the state's equity gap has remained constant at 28%, while the LA colleges' gap has seen minimal fluctuations, ultimately

decreasing from 26% to 25%. These figures suggest that SMC is in alignment with, and in some cases outperforming, other institutions in terms of the equity gap for Black students in STEM.

It's crucial to note the context of the cohort sizes at SMC when considering these equity gap figures for both SLAM and STEM. With relatively small groups of African American students, the calculated percentages may not capture the full scope of their academic success and could be more susceptible to variability. Therefore, these equity gap statistics should be interpreted with an understanding of the potential impact of cohort size.

Equity Gap Analysis for Hispanic Students

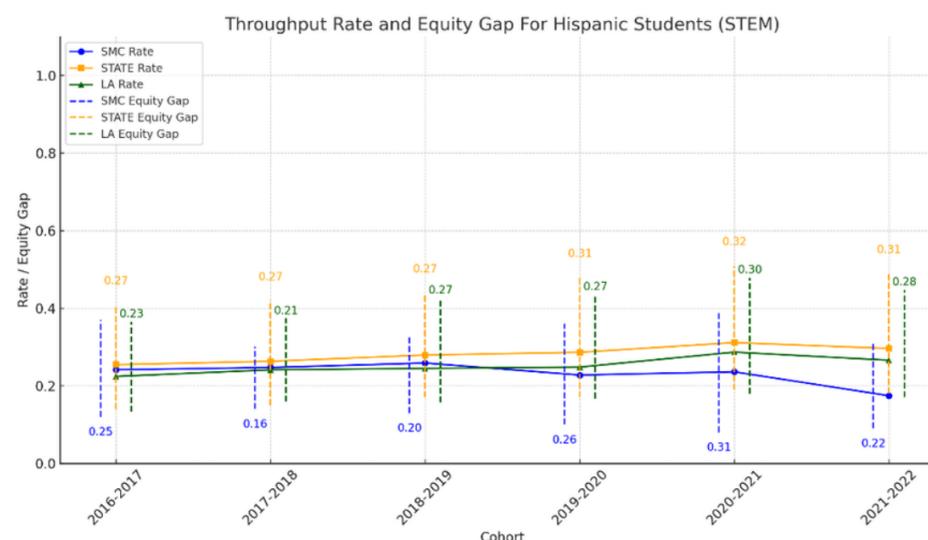
SLAM



For Hispanic students within the SLAM discipline at SMC, the equity gap in throughputs started at 33% in 2016-2017. Over the subsequent years, there were fluctuations, with the gap decreasing to 27% in 2018-2019 and then slightly rising to 29% in 2021-2022. This pattern suggests minor fluctuations with a slight overall decrease in the equity gap over the examined period.

When placed alongside the state and LA colleges' trends, SMC's reduction in the equity gap is noteworthy. The state's equity gap for Hispanic students in SLAM started at 27% and ended at 21%, while the LA colleges began with a 27% gap, which decreased to 24%. The data suggests that SMC is making strides in closing the equity gap, which, alongside the stable throughput rates, indicates a productive effort in supporting Hispanic students in the SLAM discipline.

BSTEM



The throughput rates for Hispanic students in STEM have generally remained consistent over the years at SMC, with slight fluctuations. The equity gap at SMC appears to have had some variance but has seen some periods where it was lower than both the state and LA rates, indicating periods where SMC was closer to achieving equity than the broader comparisons.

However, the equity gap is still present, and despite some years where SMC's gap was lower, there's a need for continued efforts to address this. A positive note is that the equity gap for SMC in the most recent year is slightly less than the state average, suggesting some success in the college's initiatives to address this gap.

In conclusion, while SMC has seen some success relative to state averages in closing the equity gap for Hispanic students in STEM fields, there is still work to be done to ensure equity in educational outcomes. These findings could inform future actions aimed at further reducing and ultimately eliminating the equity gap.

14c. Equity Gaps: What factors are contributing to the equity gaps? Consider factors that relate to people, programs, practices, and policies in the classroom, program, or college.

The equity gaps observed in the mathematics classes at SMC, as detailed in the provided data and discussions, can be attributed to a complex interplay of factors related to people, programs, practices, and policies. Understanding these contributing factors is crucial for developing targeted interventions to close these gaps. Here are some key factors to consider:

- **Instructional Practices and Pedagogy:** The way mathematics is taught can significantly impact student success rates. Traditional lecture-based methods may not engage all students effectively, particularly those from underrepresented groups who might benefit from more interactive, culturally relevant, and active learning environments.
- **Access to Support Services:** Differences in access to academic support services, such as tutoring, mentoring, and advising, can contribute to equity gaps. Students who are unaware of or unable to access these resources are at a disadvantage, particularly if they face academic challenges in transfer-level math courses.
- **Curriculum and Assessment Design:** The design of the curriculum and assessment methods can also contribute to equity gaps. Courses and assessments that do not consider the diverse backgrounds and learning styles of students may inadvertently favor certain groups over others. The move towards more inclusive and flexible assessment methods could help mitigate this issue.
- **Faculty Diversity and Training:** The diversity of the faculty and their training in equity-minded teaching practices can significantly influence student outcomes. Faculty who reflect the diversity of the student body and are trained in culturally responsive pedagogy can better support all students' success.
- **Programs and Policies:** The implementation of AB 705 aimed at increasing access to transfer-level courses has shown mixed results in terms of equity. Policies that do not fully account for the varied academic preparation and support needs of all student groups can contribute to persistent equity gaps.
- **Psychological and Non-Cognitive Factors:** Factors such as math anxiety, stereotype threat, and a sense of belonging can influence student performance. Students from groups that historically have lower success rates may be more affected by these factors, impacting their academic performance.
- **Socioeconomic Factors:** Socioeconomic status can impact a student's ability to succeed in college. Issues such as financial insecurity, work obligations, and lack of access to technology or quiet study spaces can disproportionately affect students from certain racial/ethnic backgrounds, contributing to equity gaps.
- **Low Representation and Sense of Belonging A:** A specific factor contributing to the low retention and success rate for SMC's Black students in the math department is the low representation of Black students, which is around 7.5%. This means that in a class of 35, only about 2 students are expected to be Black, creating a pronounced sense of not belonging. This feeling can significantly impact these students' sense of belonging and, consequently, their retention and success rates. The underrepresentation of Black students in a predominantly white academic environment can lead to feelings of alienation and a perception that they do not have a place within the academic community. This issue is exacerbated in disciplines like mathematics, where collaboration and peer support are critical to success. The psychological impact of feeling like an outsider can lead to decreased academic engagement, lower participation, and a reluctance to seek help, all of which contribute to higher dropout rates and lower academic achievement among Black students.
- **COVID-19 Pandemic:** The transition to remote instruction due to the COVID-19 pandemic has exacerbated existing equity gaps for some students. Challenges with access to technology, suitable learning environments, and the shift in instructional methods have likely impacted students differently based on their socioeconomic background and access to resources.

The complex interplay of these factors underscores the depth of the challenge faced in addressing equity gaps within the math department at SMC. Each element, from the structural to the personal, from the institutional to the individual, contributes to the disparities in completion rates and academic success among different student groups. Particularly, the issue of underrepresentation and the resultant sense of not belonging among Black students highlights a critical area of concern that affects not just academic outcomes but the overall student experience. Understanding these contributing factors is the first step in a comprehensive approach to tackling the equity gaps observed, setting the stage for developing targeted interventions in the next part of the program review.

14d. What else does your program need to know to better understand how to address equity gaps in your program's course success and retention rates?

As our department navigates the evolving landscape of higher education policy, particularly in response to Assembly Bills 705 and 1705, it becomes imperative to strategically address and understand the equity gaps present within the math department. AB 705, with its emphasis on increasing access to transfer-level coursework, has already marked significant shifts in course placement and completion rates across diverse student populations, echoing findings from the Public Policy Institute of California (PPIC) which highlights similar statewide trends and strategies for improvement. With the introduction of AB 1705, which seeks to further refine and expand these reforms, the department faces a critical juncture. The following key points aim to highlight the multifaceted approach required to anticipate, understand, and address the nuanced impacts of these legislative changes on course success and retention rates among SMC's diverse student body. By leveraging both quantitative and qualitative insights, including predictive analytics and student feedback, the math department can formulate a robust strategy that aligns with the goals of equity and inclusivity set forth by these legislative acts. This proactive stance is not only about compliance with state mandates but also reflects a deeper commitment to fostering an academic environment where every student has the opportunity to succeed. Our approach is partly informed and inspired by the comprehensive work of the PPIC, which serves as a foundation for our strategies to enhance equity in the wake of AB 705 and AB 1705.

- **Comprehensive Disaggregated Data Analysis with AB 1705 in View:** With AB 1705's upcoming changes, it's essential to analyze disaggregated data that includes a broader spectrum of demographic and academic variables. Predictive analytics could be particularly valuable in understanding potential impacts of AB 1705, such as shifts in student enrollment patterns in math courses and identifying subgroups that may require additional support.

- **Eliciting Student Perspectives on AB 705 and AB 1705:** Capturing student feedback on their experiences under AB 705 and their expectations and concerns regarding AB 1705 will offer insights into the policy's practical effects. This qualitative data can highlight areas where the math department needs to adjust its strategies to ensure that the benefits of these policies are fully realized across all student groups.
- **Faculty Responses to Legislative Changes:** Investigating how faculty are adapting their teaching practices in response to AB 705 and preparing for AB 1705 can shed light on successful strategies and areas needing support. This includes adjustments in curriculum, assessment practices, and the integration of support services to align with the goals of increasing access to transfer-level coursework and ensuring equitable success rates.
- **Impact of Support Services Post-AB 705 and Preparing for AB 1705:** Analyzing the utilization and outcomes of academic support services in the wake of AB 705, and anticipating changes under AB 1705, will be crucial. Understanding how these services can be optimized to support students in a changing legislative environment will help address equity gaps effectively.
- **Assessment of AB 705's Impact and Predictions for AB 1705:** Conducting a thorough assessment of how AB 705 has influenced equity gaps and predicting the potential impacts of AB 1705 are essential steps. This involves examining changes in course placement, success rates, and the persistence of equity gaps across different student demographics.
- **Benchmarking Against Other Institutions:** Insights from other colleges that have navigated the implementation of AB 705 and are preparing for AB 1705 can offer valuable lessons. Identifying best practices and potential pitfalls can inform SMC's approach to leveraging legislative changes to close equity gaps.
- **Longitudinal Tracking of Student Outcomes:** Monitoring students' progress over time will provide critical data on the long-term effects of AB 705 and the anticipated impacts of AB 1705 on student success and retention. This longitudinal perspective is key to understanding and addressing the nuances of how legislative changes affect different student populations.
- **Faculty Development Focused on Equity and Legislative Changes:** Reviewing and enhancing faculty development programs to include training on equity-minded teaching practices and the specifics of AB 705 and AB 1705 will prepare instructors to better support all students. This includes understanding the legislative intent behind these acts and adapting teaching and support strategies accordingly.

By focusing on these strategies, the math department at SMC can better prepare for the implementation of AB 1705 while building on the lessons learned from AB 705. Anticipating the impacts of these legislative changes and understanding their implications for equity gaps is crucial for developing proactive and effective interventions to support student success and retention in math courses.

SLO Mastery Rates:

15a. Description of process: Describe your program's processes and practices for defining, assessing, and analyzing learning outcomes. Include a discussion of how your program uses the results of SLO data to inform course and program improvement efforts.

Our program employs a comprehensive and structured approach to defining, assessing, and analyzing Student Learning Outcomes (SLOs), ensuring that our teaching strategies and curriculum remain aligned with our educational goals and effectively support student success. Here's a description of our processes and practices:

Defining SLOs

SLOs for each course are clearly defined and communicated in the Course Outline of Record. These outcomes form the foundation of our curriculum design, guiding both teaching strategies and assessment methods to ensure they align with the intended learning goals.

Assessing SLOs

SLOs are assessed each semester through various methods to accommodate the diverse learning and assessment needs across our curriculum. Predominantly, assessments are conducted through targeted exercises in homework assignments, specific questions on midterm or final exams, or the completion of classroom activities designed to directly measure the attainment of SLOs.

To support this process, the department has developed a set of suggested exam questions that faculty may incorporate into their assessments. However, instructors also have the flexibility to devise their own questions, allowing for tailored assessment that reflects their instructional approach and the unique dynamics of their classroom.

Analyzing and Reporting SLO Achievement

At the end of each semester, instructors complete an SLO assessment for each student, submitted electronically alongside the grade report. This system allows instructors to indicate whether a student "Meets Standard," "Does Not Meet Standard," or is "Not Assessed" for each SLO. The "Not Assessed" category is reserved for cases where students have not completed sufficient coursework to enable a fair evaluation of their SLO achievement.

Utilizing SLO Data for Continuous Improvement

Instructors are encouraged to regularly review SLO achievement rates and summaries via the mProfessor site. This practice promotes ongoing reflection and adjustment of teaching methods based on direct evidence of student learning. Moreover, SLO achievement rates, aggregated by course, are reviewed in departmental standing committees. These reviews provide opportunities to compare current outcomes with historical data, evaluate the effectiveness of assessment methods, and decide on necessary curriculum or instructional adjustments.

In addition to traditional assessment methods, our program recognizes the value of active learning and group work in achieving SLOs. For example, Math 54 students engage in a semester-long statistical project that encompasses developing a sample plan, collecting and

analyzing data, and presenting their findings. This project not only assesses students' grasp of statistical concepts but also their ability to apply these concepts in a practical, research-based context.

Active Learning as SLO Measurement

The shift towards more active learning opportunities, where students collaborate on activities that complement the day's lecture, offers another layer of SLO measurement. This approach not only facilitates the assessment of individual and group understanding of mathematical concepts but also promotes the development of soft skills such as teamwork, communication, and problem-solving.

By integrating the results of SLO assessments into our program review and planning processes, we ensure that our curriculum remains dynamic, responsive, and effectively oriented towards enhancing student learning and achievement. This cyclical process of assessment, analysis, and application is central to our program's commitment to continuous improvement and excellence in mathematical education.

15b. Most salient findings: Describe the most salient results of course or program SLO mastery rates data over the last review period, including results of disaggregated data. Include a discussion of how the results will be used to improve student learning.

The analysis of Student Learning Outcome (SLO) mastery rates over the last review period provides insightful data on student performance across different demographic groups within our program. Despite varied enrollment trends, the mastery rates for SLOs have shown important developments, particularly among Latinx and Black students, as well as the student body as a whole. These findings are crucial for informing future course and program improvements to enhance student learning.

Latinx Students

The SLO mastery rate for Latinx students has shown a promising increase from 50% to 53% between Fall 2017 and Fall 2022, despite a significant drop in enrollment from 3,749 to 1,462 students. This improvement is statistically significant, with a p-value of 0.0196, suggesting meaningful progress in SLO mastery among Latinx students. This indicates that despite fewer Latinx students enrolling, those who do are achieving at a higher rate.

Black Students

For Black students, the SLO mastery rate modestly increased from 43% to 46% over the same period. Although enrollment sharply declined from 671 to 168 students, this rise in mastery rate did not reach statistical significance. This suggests that while there is a positive trend in SLO mastery among Black students, further investigation and targeted interventions might be needed to ensure these gains are consistent and statistically significant.

All Students

Overall, the program witnessed an increase in the SLO mastery rate from 58% in Fall 2017 to 63% in Fall 2022, amidst a decrease in total enrollment from 8,253 to 3,653. This increase is statistically significant, with a p-value of 0.00000002, indicating a strong upward trend in mastery rates across the student body.

Interestingly, mastery rates peaked in Fall 2020 at 67% for all ethnic groups, 56% for Latinx, and 48% for Black students. This period coincides with the global pandemic's height, suggesting that the shift to online or hybrid learning models may have impacted SLO mastery rates positively.

Implications and Future Directions

The passage of AB 1705 aimed at providing equitable access to math classes and increasing throughput has indeed had mixed impacts. While access and completion rates have improved, it appears to have coincided with decreased success rates in most mathematics classes. This nuanced outcome necessitates a multifaceted approach to addressing equity in mathematical education moving forward.

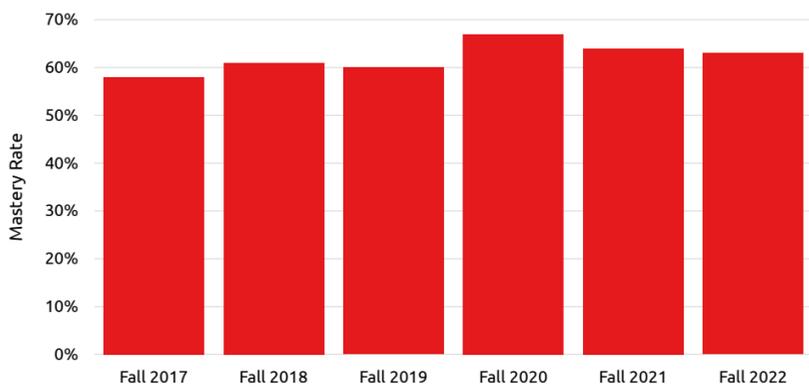
To improve student learning based on these findings, our program will:

- **Investigate the Underlying Factors:** Conduct deeper analyses to understand the causes behind the observed trends, especially the factors contributing to the peak mastery rates in Fall 2020.
- **Tailor Support and Interventions:** Develop targeted support and intervention strategies for Latinx and Black students to bolster their SLO mastery rates further.
- **Adjust Pedagogical Strategies:** Explore and implement teaching methods that have proven effective during the pandemic, such as enhanced online resources, flexible learning formats, and active learning approaches.
- **Monitor and Adapt to Legislative Changes:** Continuously assess the impact of AB 1705 and other legislative changes, adjusting program offerings and support services to maximize positive outcomes for all students.

By leveraging these SLO data insights, our program commits to ongoing improvement efforts aimed at elevating student success and maintaining a rigorous, inclusive, and equitable learning environment.

Course SLO

Math

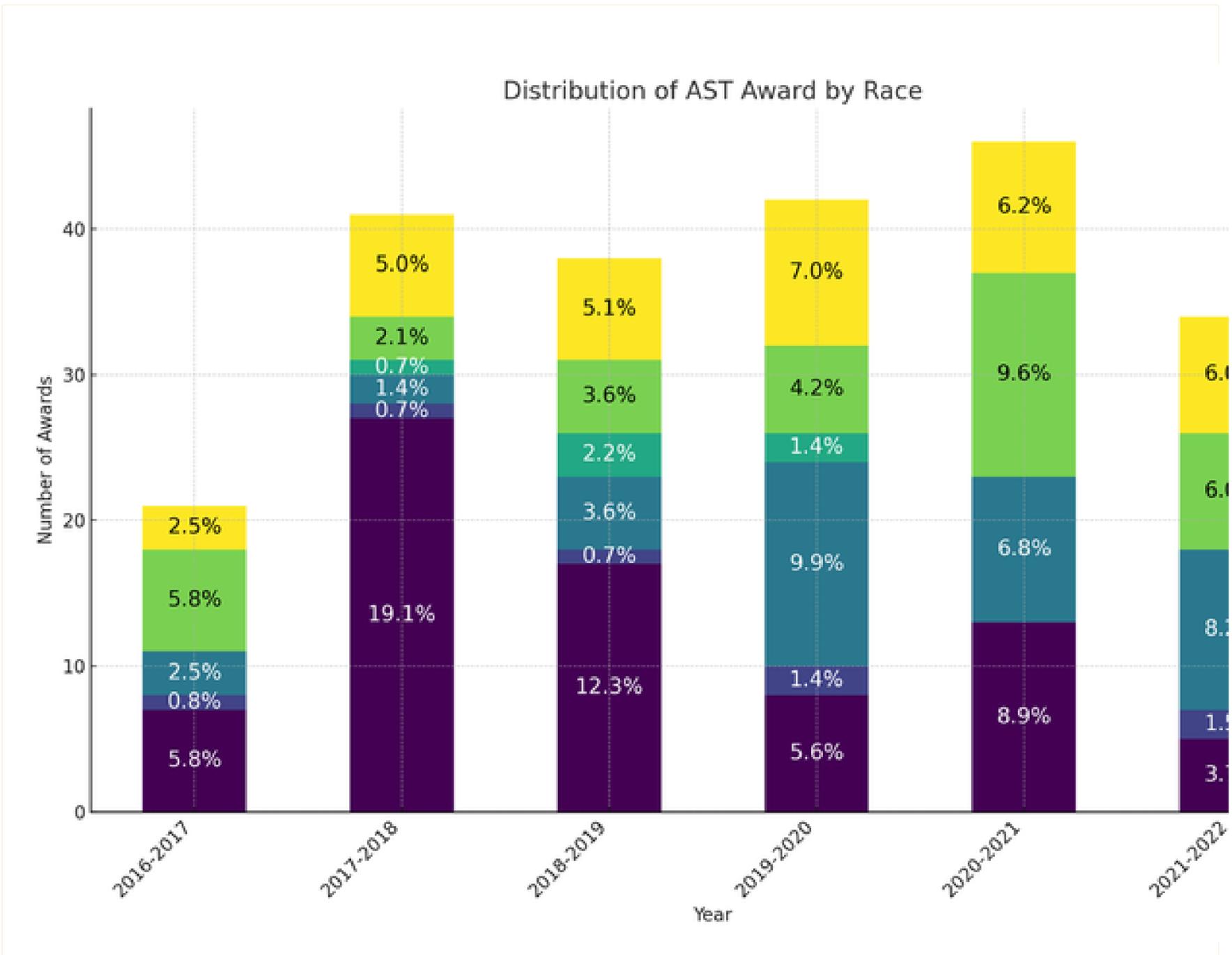


Measures: Mastery Rate and Successes and Attempts

Measures	Fall 2017			Fall 2018			Fall 2019			Fall 2020			Fall 2021			Mastery Rate
	Mastery Rate	Successes	Attempts	Mastery Rate	Successes	Attempts	Mastery Rate	Successes	Attempts	Mastery Rate	Successes	Attempts	Mastery Rate	Successes	Attempts	
Measures	58%	4,789	8,253	61%	4,416	7,291	60%	3,611	6,062	67%	3,059	4,548	64%	2,125	3,323	63%

Degrees and Certificates:

16a. Analyze your program’s degree and certificate award trends against your department’s institution-set standards (minimum threshold) and improvement goals. Document any significant changes or trends over the last review period.



The Mathematics Department at Santa Monica College has set ambitious institution-set standards, aiming for a 5% year-over-year increase in the number of Associate in Science for Transfer (AST) awards. This target was established to encourage steady improvement, align with broader educational goals, and respond to legislative changes AB 705 and AB 1705. Over the last review period, we’ve observed several noteworthy trends in the distribution of AST awards by race, shedding light on the department’s progress towards these goals and areas requiring further attention.

- **Asian Students:** Witnessed a significant peak in AST awards in 2017-2018 at 65.9%, followed by a decrease to 14.7% in 2021-2022. This trend may reflect changes in the demographic composition of our student body or shifts in study preferences among Asian students, underscoring the need for adaptive strategies to support their success.
- **Black Students:** Despite a slight increase to 5.9% in 2021-2022, the proportion of AST awards received by Black students has consistently been low. This highlights a critical area for improvement, necessitating targeted support to enhance access and success rates for Black students in AST-degree pathways.

- **Latinx Students:** There has been a notable increase in AST awards among Latinx students, peaking at 32.4% in 2021-2022. This trend is encouraging, indicating successful engagement and achievement within this demographic group.
- **Two or More Races and Unreported:** These categories have shown variability and a significant proportion of unreported races.
- **White Students:** The share of AST awards for White students has been relatively stable, with a slight decrease noted in the latest year to 23.5%, suggesting consistent representation among award recipients.

The observed trends reveal a shifting landscape in the racial composition of AST award recipients at SMC, characterized by significant increases in awards among Latinx students and decreases among Asian students. This distribution informs the department's ongoing and future efforts in academic support, outreach, and program development to ensure equitable access and success for all students pursuing AST degrees. Despite these efforts, the overall trend indicates that while progress has been made, achieving the set goal of a consistent 5% annual increase in AST awards remains a challenge. To address this, the department is exploring strategies to bolster support for underrepresented students, adapt curriculum objectives, and further engage the student body through initiatives like Math Bootcamps and STEM workshops. These measures, aligned with our institution-set standards and improvement goals, are geared towards creating a supportive educational environment conducive to the success of every student in the Mathematics Department.

Degrees and Certificates

Math

Measures: Degrees and Certificates

✓ Award Type Detailed	Program Title	2015-2016	2014-2015	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
A.S.-T	Mathematics	10	5	21	41	38	42	46	34	25
	Total	10	5	21	41	38	42	46	34	25
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16b. Which student racial/ethnic groups disproportionately earn more awards in your program? Which racial/ethnic groups earn disproportionately fewer degrees and certificates?

Over the review period, Asian students initially disproportionately earned more awards, particularly evident in the 2017-2018 academic year. However, this trend has decreased over time, with a notable reduction in the proportion of awards to Asian students. Conversely, Latinx students, who represent a significant portion of the student body, have shown an increasing trend in earning awards, aligning more closely with their representation among the student population. Black students have consistently earned disproportionately fewer degrees and certificates throughout the review period, indicating a significant equity gap that the department needs to address.

16c. Based on your analyses, what changes is your program exploring, including addressing any equity gaps?

Based on the analysis, the Mathematics Department is exploring several changes to address these trends and equity gaps:

- **Enhanced Support Programs:** Expanding and enhancing initiatives like the Math Bootcamp and STEM workshops, which have shown promising early feedback, especially in preparing students for their coursework and fostering a sense of community and engagement.
- **Targeted Interventions for Underrepresented Groups:** Developing more targeted interventions to support students from racial/ethnic groups that earn disproportionately fewer degrees and certificates, especially Black students. This could include mentorship programs, community-building activities, culturally responsive teaching practices, and increased access to academic resources.
- **Curriculum Review and Adjustment:** Continuously reviewing and adjusting the curriculum and support strategies to ensure alignment with legislative changes and student needs. This includes making the curriculum more inclusive and reflective of diverse student experiences and backgrounds.
- **Monitoring and Evaluation:** Implementing a robust system for monitoring the impact of these changes and conducting regular evaluations to ensure that the department's efforts are effectively addressing the identified equity gaps.

If applicable:

17a. Labor Market Data: Discuss the labor market demand for your program. What is the gap between demand and supply? How does labor market data inform your overall program planning?

N/A

17b. Additional Assessment: Describe the results of any additional assessment or evaluation your program conducts and how the findings inform program planning and improvement.

N/A

F. Your Program's Past and Future

Past Action Plan:

18. Discuss the progress made on the action plan and objectives from your program's last review.

Objective 1:

Based on the Mathematics Department Equity Proposal, create and implement an action plan that involves faculty and staff to work toward addressing the disparities that exist within the African-American and Latino male students in basic skills math completion.

- **Status:** Completed in Summer 2022. The department ceased offering basic skills classes. Addressing disparities within African-American and Latino male students in math completion remains an ongoing concern and focus of our Professional Learning Community (PLC), now targeted towards transfer-level courses.

Objective 2:

Improve methodology and testing related to classified staff hiring of Math Instructional Assistants.

- **Status:** The hiring process was successfully revised and finalized in Spring 2016, enhancing our approach to recruiting Math Instructional Assistants.

Objective 3:

Based on the Mathematics Department Equity Proposal, increase awareness of and address the disparities that exist within the African-American and Latino male students in basic skills math completion by providing professional development opportunities

- **Status:** Completed in Summer 2022. With the discontinuation of basic skills classes, the focus has shifted towards elevating the success rates of African-American and Latino male students within transfer-level courses as a persistent effort within our PLC.

Objective 4:

Update department website to improve organization and access.

- **Status:** Completed in Spring 2016. The website now undergoes regular updates each semester to ensure it remains an organized and accessible resource for our community.

Objective 5:

Expansion of Hybrid Mathematics Course Offerings

- **Status:** Initiated in Spring 2020, this effort continues to evolve in response to student demand, featuring a balanced offering of hybrid, fully online, and on-ground courses.

Objective 6:

Increase basic skills usage of the resources available in the Math Lab and the Math Learning Resources Center.

- **Status:** With the cessation of basic skills courses in Summer 2022, focus has shifted to maximizing the utilization of our Math Lab and online tutoring services. The Math Lab's usage consistently exceeds that of other campus labs, often operating at full capacity. On-ground tutoring, in particular, remains highly sought after by our students.

Future Action Plan:

19a. Considering your program's past plan and this review's findings, what challenges and concerns need to be addressed in the next review period?

Considering the Mathematics Department's previous action plans and the findings from this review, several key challenges and concerns have emerged that require attention in the next review period:

- **Closing the Equity Gap:** Despite ongoing efforts, disparities in math completion rates among African-American and Latino male students persist. This underscores the need for enhanced, targeted strategies to support these groups, including culturally responsive teaching practices, increased mentorship opportunities, and tailored academic support.
- **Adapting to Legislative Changes:** The implementation of AB 705 and the anticipated impact of AB 1705 present significant challenges in course placement and pathway design. The department must continue to refine its approach to these legislative mandates, ensuring that students are appropriately supported in transfer-level courses without the foundational support previously provided by basic skills classes.
- **Support for Higher-Level Math Courses:** As the department shifts its focus from basic skills to transfer-level courses, there's a growing need to develop support mechanisms for higher-level math courses, such as Calculus 1 and 2. This includes creating supplementary courses or resources to aid student understanding and success in these challenging subjects.
- **Enhancing Online and Hybrid Learning:** The COVID-19 pandemic accelerated the adoption of online and hybrid learning modalities. Moving forward, the department faces the challenge of optimizing these formats to maintain engagement, retention, and success rates comparable to those of traditional on-ground classes.
- **Resource Allocation for Support Services:** With the discontinuation of basic skills courses and the increased enrollment in transfer-level and higher math courses, the department must ensure that resources such as the Math Lab and tutoring services are adequately funded and staffed to meet the growing demand for support.
- **Faculty Development for Equity and Inclusion:** There's a continuous need for professional development opportunities focused on equity and inclusion. Faculty should be equipped with the skills to create inclusive classrooms that support the success of all students, particularly

those from historically underrepresented groups.

- **Integration with STEM Disciplines:** Collaborating with other STEM departments (e.g., Physical Sciences) to develop integrated support materials and resources remains a priority. This interdisciplinary approach can help students see the connections between their courses, potentially improving retention and success in STEM pathways.

Addressing these challenges and concerns will require concerted efforts across the department, involving faculty, staff, and administration. Strategic planning, resource allocation, and ongoing assessment will be crucial in ensuring that the department meets its objectives and continues to provide a supportive and equitable learning environment for all students.

19b. Identify 1 – 5 goals for your next review period's Action Plan to address your program's challenges and concerns. Label the goals Ongoing, Revised, or New.

1. Continue the Professional Learning Community (PLC) to Increase Equity Awareness and Practices

- **Status:** Ongoing
- **Description:** Persist with the PLC initiatives focusing on enhancing equity awareness among faculty, with a particular emphasis on supporting students of color. This goal is aimed at narrowing the existing equity gaps by fostering an inclusive learning environment and equipping teachers with the skills and knowledge necessary to effectively support all students.

2. Develop and Launch a Support Course for Calculus 1

- **Status:** New
- **Target Completion:** July 2025
- **Description:** Design and implement a new support course specifically tailored to assist students in overcoming challenges associated with Calculus 1. This course will aim to provide additional academic support, reinforce foundational math skills, and improve student success rates in this critical gateway course.

3. Explore the Development of a Support Course for Calculus 2

- **Status:** New
- **Description:** Evaluate the feasibility and potential benefits of creating a support course for Calculus 2, similar to the support structure envisioned for Calculus 1. This initiative will involve assessing student needs, curriculum development, and resource allocation to support students in advancing through the calculus sequence.

4. Develop and Launch a Quantitative Reasoning Course

- **Status:** New
- **Target Completion:** July 1, 2025
- **Description:** Create and introduce a quantitative reasoning course designed to enhance students' mathematical reasoning and critical thinking skills applicable in real-world contexts. This course will cater to a broad range of students, aiming to bolster their analytical capabilities and support their success across various academic disciplines.

5. Collaborate with the Physical Sciences Department on Support Materials

- **Status:** New
- **Description:** Initiate a collaborative effort with the Physical Sciences Department to develop and provide support materials for STEM students navigating courses in both mathematics and physical sciences. This goal seeks to create a cohesive support system that addresses the interdisciplinary needs of STEM students, facilitating a smoother academic journey through both subject areas.

These goals are structured to address the Mathematics Department's ongoing challenges and concerns, with a balanced mix of continuing efforts and fresh initiatives aimed at enhancing student support, fostering equity, and improving overall academic outcomes.

G. Resources and Budget

20. What are the most critical resources needed to implement your program's Action Plan in the next review period?

To fully realize the goals set forth in our program's Action Plan for the next review period, securing critical resources is paramount. The identified needs span from educational tools to support active learning to financial resources for course development and support. Here is a detailed breakdown of the critical resources required:

1. **Continued Funding for Embedded Tutors:** Embedded tutors have proven to be invaluable in enhancing student understanding and performance in mathematics courses. Continued investment in this area is essential for maintaining high levels of student support and success.
2. **Funding for Class Sizes:** Keeping class sizes for support courses at 35 students or fewer is crucial for providing individualized attention and fostering an environment conducive to learning. Adequate funding will ensure that these smaller, more effective class sizes can be maintained.
3. **Development of OER Materials:** There is a pressing need for funding to develop Open Educational Resources (OER) that are tailored to our courses' specific requirements. Current OER materials for math 4, 7, and 54, as piloted by three of our faculty members, require significant editing and supplementation to meet our standards of effectiveness.
4. **Quantitative Reasoning and Calculus Support Courses:** Funding is needed to develop new courses, including a Quantitative Reasoning course and support courses for Calculus One and possibly Calculus Two. These courses are integral to enhancing our

mathematics curriculum and providing students with the foundational skills necessary for success in advanced mathematics.

5. **Active Learning Tools:** To facilitate active learning, additional whiteboards in all mathematics classrooms would significantly enhance our teaching methods. Allowing students to engage with problems on their own boards around the room encourages collaboration and deeper understanding, as opposed to the limitations of sharing a single board at the front of the classroom.

6. **Continued Funding for Educational Software and Tools:** Tools such as Gradescope, MathType, Mathematica, Devita, and TI 84 Calculators are essential for student learning. Continued funding for these resources will ensure that students have access to the necessary technology to support their studies in mathematics.

By securing these critical resources, our program will be better positioned to implement its Action Plan effectively, enhancing the educational experience for our students and ensuring that our program continues to lead in the provision of high-quality mathematics education. These investments will not only support the immediate needs of our students and faculty but also lay the groundwork for sustained innovation and success in the future.

21. If additional resources are needed to implement your Action Plan, what new funding sources and/or budget reallocations is your program exploring?

New Funding Sources:

Grants and External Funding:

- **Description:** Seek grants from federal, state, and private foundations that support educational equity, STEM education, and innovative teaching methods. This could include funding for creating support courses, enhancing math labs, or professional development focused on equity and inclusion.
- **Action Steps:** Identify grant opportunities, such as those from the National Science Foundation (NSF) for STEM education, and develop proposals highlighting the program's goals to support underrepresented students and improve math education quality.

Partnerships with Industry:

- **Description:** Establish partnerships with local businesses and industries, especially those in STEM fields, to secure sponsorships or funding for specific initiatives like math boot camps, tutoring programs, or curriculum development.
- **Action Steps:** Engage with potential industry partners to explore mutual benefits, such as creating internship opportunities for students in return for financial support for the program's initiatives.

Alumni Donations and Fundraising Campaigns:

- **Description:** Leverage the alumni network to raise funds for the department's priorities, such as scholarships for underrepresented students or resources for the math lab.
- **Action Steps:** Organize fundraising campaigns targeting alumni, especially those who have succeeded in STEM careers, emphasizing the impact of their contributions on future students' success.

Budget Reallocations:

Review and Prioritize Expenditures:

- **Description:** Conduct a thorough review of current budget allocations to identify areas where funds can be reallocated to support the Action Plan's priorities more effectively.
- **Action Steps:** Evaluate all discretionary spending and ongoing contracts for possible savings. Prioritize funding towards initiatives with the highest impact on student success and equity goals.

Efficiency in Resource Utilization:

- **Description:** Optimize the use of existing resources, such as through the more effective scheduling of math lab hours to match peak student demand or the adoption of Open Educational Resources (OER) to reduce textbook costs.
- **Action Steps:** Implement a data-driven approach to resource utilization, ensuring that investments are directed towards areas with the greatest need and potential for impact.

Collaborations Across Departments:

- **Description:** Explore opportunities for sharing resources or collaborative funding with other departments, especially those within the STEM disciplines, to support cross-departmental initiatives.
- **Action Steps:** Initiate discussions with other departments to identify shared goals that could be more efficiently achieved through joint efforts, such as shared tutoring services or interdisciplinary courses.

Implementing the Action Plan will likely require a multifaceted approach to funding and resource allocation. By exploring new funding sources and making strategic budget reallocations, the Mathematics Department can secure the necessary resources to meet its objectives, address equity gaps, and enhance the overall quality of math education for its students.

This form is completed and ready for acceptance.