SAN DIEGO MESA COLLEGE

Program Review

Summary and Reflections with Unit Goals, Action Plans, and Updates

Leadership - Dean, Math and Sciences Office

2022 - 2026

Executive Summary

Describe the successes and challenges your unit has faced since the last comprehensive review.

There have been two large challenges: COVID-19 and multiple changes in leadership at the Dean level. As a result, this has impacted the what, how, and when employees come to the office.

Examples include:
- Policies & Expectations: employees, especially those hired within the last 3-4 years, are not familiar with what they are to report (example: leaves), nor who they are to report to (some email only department chairs and not the Dean when reporting leaves). Many things became more "flexible" during the pandemic, coupled with several changes in leadership (4 Deans, including myself since 2020) without clear nor consistent communication, if at all, to employees.
- Modalities: All classes were converted to remote/web starting in Spring 2020, and while many (especially lab-based) have transitioned back to face-to-face, many remain as some form of online/hybrid. This has brought challenges, questions, and changes all around. There are faculty members that have never set foot in the Dean's office, nor have had any interaction with us. This has also resulted in lowered attendance at school meetings and less involvement/service overall to the college.
- Service (of the office): Before the pandemic one of the largest functions of the office was to help students, including the petition process. Since that process has transitioned to JIRA (online) there are significantly fewer students seeking help. The switch to online modality and the difficult transition for many back to face-to-face courses also plays a role.
- Overall community: Community and individuals' interactions with each other has suffered. Some faculty have left over the last three years, where others have joined (or joined right before the start of the pandemic). Dean leadership changes have left employees feeling disjointed and apprehensive, a lack of consistency has affected trust and community. Many employees do not visit the office, further adding to the disconnect. All this coupled with the pandemic and state legislature (AB705/1705) has made it ever so apparent that rebuilding trust and community is crucial.

Two main areas of success are resilience and enrollment.

While we could say that enrollment has also been a challenge (adding "less classes, less students, less faculty" to all of the factors listed above) the School still has healthy enrollment. Top majors at the College continue to be Engineering and Biology (Allied Health). Throughout the remote teaching timeline of the COVID-19 pandemic we continued to offer classes for students: Chemistry labs were the first to be held on campus and Biology followed shortly after. Additionally, we continued to offer several courses, like Microbiology, that many nearby colleges did not. As a result, the School played a vital role in the "reopening" of Mesa College with safety our main priority. There has been a reduction in sections/courses over the last several years with some courses affected more than others, but we haven't experienced major struggles, and have started to see our enrollment trends back towards the positive.

Resilience. Our employees are tired- affected by multiple factors over the last several years, a pandemic (which resulted in continual educational challenges like modality changes, academic integrity, impact to students (life, retention, motivation, health, academic success), all while, as individuals, we were living through a pandemic filled with uncertainty as well as physical & mental health concerns, from isolation and a lack of community. District changes, campus changes and climate upon returning (as well as during remote instruction), multiple changes in leadership at the School level, and curriculum concerns (articulation concerns over online modality, state legislation) also have had an impact. I'm proud that we are still here, with employees that dedicate their time and energy to students.

Summary and Reflection

If applicable, describe any major curricular or service changes your unit has engaged in and the impact of those changes since the last comprehensive review.

While many lab-based science courses have returned to face-to-face instruction since the COVID-19 pandemic (and many chemistry and biology classes were the first to return at the campus) there are still multiple courses that have maintained an online modality.
Math courses have had a slower return to on campus. A decline in enrollment was exacerbated by the pandemic and several disciplines and programs have not fully recovered- there was also a loss of instructors who retired or left during this time. Further AB705, has exacerbated enrollment with the elimination of many courses and this will continue with the cessation of Math 92 and 96.

The overall impact includes:
- Less students and instructors on campus with many working and attending meetings remotely
- Less familiarity with campus policies and services (see above)
- Less community and connection

If applicable, describe the impact of any new resources (human, fiscal, etc) on the unit and/or action plan implementation.

HEERF funds have been extremely valuable in the ability to maintain course offerings and hands-on lab instruction during the pandemic and aid in student success and retention since the return to the classroom. Lab equipment, lab supplies including those for student take-home kits, laptops, microscopes and access to field trips are a few examples of purchased made with this resources.

If you assess OUTCOMES, please confirm that the outcomes have been reviewed for accuracy. If you do not assess Outcomes, skip this question.

Related Documents for Charts and Graphs

Executive Summary Complete

Yes

Data Reflection

Trends observed in program/service area's data.

Enrollment has been declining since before the COVID-19 pandemic, yet has become more stable recently with higher fill rates observed, though the number of course offerings remain reduced. Fall 2020 had 491 sections, an enrollment of 11,132 students, and a fill rate of 69.6% where Spring 2023 had 371 sections, an enrollment of 9,593 students, and a fill rate of 82.2%. Interestingly enrollment was at the highest for Spring 21, with 11,524 students and then decreased in Fall 21 to 9,071 students, with a further drop in 22 (Spring 8,221 and fall 8,615). The myriad of effects to our student population including the pandemic and economy as well as access to learning resources, support services, course modalities, and student community play a large role in this.

An analysis of awards granted within the school has seen a couple changes of note. In the 2018-19 academic year, the top 5 awards within the School were 1. Biology: Allied Health (65), 2. Engineering (35), 3. Biology: Transfer (30), 4. Mathematics for Transfer (24), and 5. Physics (21). In the 2021-22 academic year, Biology: Allied Health remains #1 (75), #2 was Biology: Transfer (63), 3. Liberal Arts & Studies: Mathematics & Pre-engineering (29), and 4. Mathematics for Transfer (21). It is wonderful that there was an increase in the number of Biology awards, yet not so great that the number of Engineering awards went from 35 (and the 2nd highest) to only 9 (and not in the top 5 award categories)- also several of those awards were “replaced” with LAS- Pre-engineering awards. Further, Biology went from the 2nd highest academic plan in the college in 2018-19 *excluding the high amount of undecided/unreported* to #1 in 2021-22, while Engineering remained at #5.

Summary and Reflection

Describe any equity gaps in the data. Are there differences and/or patterns observed by demographics (e.g.race/ethnicity, gender, age, etc.)

There was a reduction in the equity gap for both number of awards given to females (13.9% disproportionate gap in 2018-1 to 2.3% gap in 2021-22) and African American students (3.4% gap to 2.7% gap). It's important to note these gaps still remain. Additionally, there is still a significant equity gap for number of awards granted to Latinx students (5.7% in 2021-22).

Describe the discussion(s) that took place about the unit's learning outcomes assessment data.

N/A

Related Documents for Charts and Graphs

Data Reflection Complete

Yes

Practice Reflection

Describe current practices your program/service area has engaged in that you believe impact the above data trends and equity gaps.

There are multiple initiatives currently in progress that are aimed at decreasing equity gaps, specifically in low-income and LatinX student populations, as well as increasing overall student success. These include:

- HSI E3 grant
- Peer mentoring: This has shown great success in our STEM major courses where students work with peers that have recently completed the course in active group work and discussion.
- Interdisciplinary Curriculum workgroup: Goals include: reducing overall units for students (engineering) and analysis of student "maps" and course sequencing between disciplines (faculty work to discuss what prerequisite material from one course/discipline is needed for subsequent courses/ disciplines and how to create an improved and seamless transition for students)
- Path to STEM success: Fall and Intersession orientation events for both new and current students includes industry panels, access to our STEM counselor, content workshops and refreshers with faculty and helpful campus information; Registration workshops held in mid-May where students could ask questions to faculty and counselors about courses/programs for Summer and Fall; Noche de la Familia: planned Summer orientation event for family members of STEM students to introduce them to STEM "culture" and provide access to resources and information and a space to ask questions.
- NSF grant
- Provides field experiences for students outside the classroom with an aim at increasing students' STEM identity. This includes a field trip in Biol210B Introduction to the Biological Sciences II and a summer 10-day field trip for students interested in geological sciences.
- I3 grant
- Faculty from Biology, Business and English worked together to develop a citizen science project for students; Students from any major were invited to apply and the first cohort started in Spring 2023. Students participated in a 10-week project that utilized multiple skillsets and perspectives as applicable to a "real-world" job scenario. The workshop culminated with student presentations.
- MESA program
- We will be receiving funds to start a MESA (Mathematics, Engineering, Science Achievement) program to support students majoring in calculus-based programs. The funding will support "academic excellence workshops" which are structured almost identical to our current Peer Mentoring program and extra support for mathematics courses due to AB1705. Students will also be placed in cohorts which will aid in increasing a sense of belonging and community as well as group support for their classes. A MESA center will also be an established physical space where students can go- not only for social and academic support, but have access to services like counseling, models and technology. The program will involve several departments across campus, including Student Services, Puente, Counseling, and Institutional Effectiveness.

Summary and Reflection

What other factors (internal or external) might also impact the above data trends and equity gaps?

The COVID pandemic, and AB705/1705 have definitely impacted student success and equity.

The pandemic had a great impact on education, as not only were individuals suffering in this scary and unknown time (and many students to a greater effect in regards to job and housing insecurity), but also adjusting to a sudden switch in learning modality. While the faculty in the school provided online/remote classes for students (Mesa being the only college in the region for some lab-based courses) this modality had a disproportionate impact on some students, mainly underrepresented groups have been shown to have lower success rates without an in-person component. Further, in online courses faculty were concerned about academic integrity so may have implemented examination and assignment structures that also had a disproportionate effect on students. While laptops were provided to students, technology and internet access still remained a barrier. Finally, since the return to face-to-face courses, faculty have reported lower levels of preparedness in students – both in mathematics skills and content from an earlier course in a sequential course series (ex. Chem152 to Chem200).

AB705/1705: While the (hopefully) positive effects of this legislature are yet to be seen in mathematics (below transfer-level courses, Math 92 and 96 will no longer be offered starting Summer 2023) in terms of more equitable placement for students, there are many concerns on the impact to students moving forward, especially in the STEM programs. As described above, faculty are noticing lower level of math preparedness in science courses. As intermediate algebra (Math 96) was a prerequisite for biology and chemistry courses, thus faculty have concerns about the impact of the loss of these courses. Additionally, AB1705 will result in the (potential) loss of the transfer-level prerequisite courses, trigonometry and pre-calculus, for calculus courses for both non-STEM (mainly business) and STEM programs. The legislation is focused on questioning whether there is a beneficial impact of these courses on a student's overall success IN calculus, but fails to acknowledge the content in those courses is also necessary for science courses- ironic as the calculus course requirement (which the state is using as their foundational rationale for the legislation) is there for biology, chemistry, physics and engineering majors, not just math majors (and Biology and Engineering are the top majors at Mesa College).

Related Documents for Charts and Graphs

Practice Reflection Complete

Yes

Mid-Cycle Updates

Are there any edits or updates to the Executive Summary above?

Updates: to Challenges (Policies & Expectations and Community)In general, the challenges surrounding these areas has subsided. As leadership has now been consistent due to my presence in the role for 3 semesters, I have reinforced policies and have worked to create an empathetic and compassionate community. I communicate out policies and expectations at School meetings as well as in regular emails. I created a FAQ document that was distributed to all School employees based on the common questions and topics that my office receives. While I still spend a considerate amount of time emailing specific individuals in regards to leaves (either letting me know that they are or will be out, reporting the time using the correct code and/or the correct number of hours, etc) I have found that by asking them to correct the details before I approve, has at least put the responsibility on them in hopes of them doing it correctly the next time. Further, I always follow up with employees when they're out, for example, to ensure everything is OK and if there's any way I can help support. I hope this lets them know that I care and for them to reach out when the need, or if an issue, arises. Additionally, in terms of community, I have instilled monthly meetings with all the School ILTs and semester "check ins" per department (I do the same with Chairs, for reference). This has created space for them to feel valued and heard, for us to clarify processes, and for me to learn and understand the individual needs and challenges unique to each discipline. As a result, worker morale and communication has increased. While there are still isolated cases of concern, the increased communication and trust means I've been made aware of them to which I can now dedicate time and effort to resolving. Finally, overall community within the School has increased. People stop by the office to simply say

Summary and Reflection

hello, we have had multiple School celebrations (“potluck” style events), and there is more collective calmness and ease overall.

New challenges:
Over the last year, I'd also state that some consistent challenges have become more visible. These would be lab support staffing and acquiring resources. As for staffing, our labs are run by ILTs and supplemented in some cases by NANC employees. It has been difficult to find individuals to fill the NANCe positions and there is also high turnover. This is mainly due to the type of work and skill necessary coupled with the pay- as a result the individuals filling these positions tend to be students. This then results in more time to train them, working around their class schedules, and needing to find replacements when they graduate or transfer. This Fall in the Biology department two ILT employees went out on FMLA leave consecutively (and also overlapping dates). The reorganization of class preps amongst the ILTs in order to cover all courses led to some employees feeling overworked. While the department did hire two NANC employees, the time it takes to find someone interested in the position and the time to clear the HR process made it very difficult to meet the needs of the classes with the number of employees. I have been proactive in requesting “extra” Board approved NANCe positions to ensure when the need arises the departments can have support. Case in point, one of our Chemistry ILTs recently informed me of his retirement at the end of January- so we will now use that NANCe position to provide some extra support until a replacement is hired.

Further, it has not been easy to obtain replacement classroom supplies and equipment and employee office needs in a timely or effective manner. We experienced several fridges and freezes breaking in the microbiology department over the course of a month earlier this year, as well as routine supplies that wear out over time. As many scientific tools are over $200, and thus count as “equipment”, it has been a struggle to obtain resources within the purchasing processes, and funding options, that exist. In addition, things like computers, chairs, and related tech for employees are not always provided in a timely manner once the employee begins work or when needs come up throughout the semester. As stated previously, the Block Grant and HEERF funds have been immensely helpful in acquiring new resources (and some replacements or upgrades necessary) they are not a sustainable revenue source at the College nor do all items needed qualify under the grant’s criteria. It has also been a learning experience in understanding the different steps of the purchasing process and all the way to delivery and maintenance. While there has been progress in communication, we still have large specialized equipment that remains unusable due to oversights in the process. I will continue to work with ILTs and faculty to mitigate hurdles in the future.

Are there any edits or updates to the Data Reflection above?

No updates

Are there any edits or updates to the Practice Reflection above?

Updates to MESA program:
The MESA Director, Robert Monroy, has been hired and has started as of December 8, 2023. The location for the MESA Center has been determined and furniture renovations are underway. There are plans to participate in Welcome Week and Intersession's Path to STEM Success events to recruit students.

Summary and Reflection

"Human-First" Culture

Unit Goal: To provide a consistent, inclusive and safe "human-first" culture and environment that prioritizes (and reestablishes) community and team work.
Goal Status: Active
Beginning Year: 2022 - 2023
Projected Completion Year: 2025 - 2026
Mapping
Mesa College Strategic Plan: Roadmap to Mesa2030: (X - Highlight the X to Align)

- Community - Objective 3: X
- Community - Objective 4: X
- Scholarship - Objective 2: X

Action Plans	Action Plan Update
Action Plan Status: Active **Action Plan:** Goal 1 Action List 1. I will continue to provide empathetic, consistent and effective communication. This includes updates to School, College and District policies and procedures, support for faculty in terms of academic and student service resources, professional learning opportunities, and events. 2. I will continue to offer a welcoming and inclusive environment, both conceptually and physically – that centers a "team" approach. This has been initiated so far in my position with social events for the School, acknowledgement of "Team Wins", and having meetings where employees can discuss ideas and concerns openly. **Action Plan Cycle:** 2022 - 2023, 2023 - 2024, 2024 - 2025, 2025 - 2026	**Submission Date**: 12/04/2023 **Action Plan Update**: In regards to #1: I have continued to lead a human-first community environment. I strive to ensure employees understand any personal or family needs "come first". For example, if an ILT informs me they are out sick, I contact their colleagues and department Chairs to first let them know and second to ensure the needs of the class can be met and if not I help make accommodations. Additionally, I forward important College emails on to all School employees- regarding items such as book requisitions, student opportunities and campus events. I usually include Toni Parsons and Brian Mackus in my communications as I consider the HSI grant an extension of the School and thus our collaboration and team work is essential. While there are still some areas that aren't as smooth as I'd have hoped -like the communication when a faculty member is out (this is mainly having faculty let me know when they're out and if applicable, the sub) things have vastly improved and are more consistent. I believe employees appreciate and value the communication. **Update Year**: 2023 - 2024 **Action Plan Progress**: On Track **Submission Date**: 12/04/2023

Summary and Reflection

Action Plans	Action Plan Update
	Action Plan Update: In regards to #2: I am on track with this goal, and believe it is one of the most important shifts that has occurred in our School since the pandemic. Our School office is a place where people "stop by" either with questions, or to say "Hello". This open communication is essential as while it's enjoyable in the happy and good moments it also fosters trust so that people bring forth questions or concerns. And people have let me know of the issues. I consider that a "win" from my perspective- as now I can help guide employees if there are interpersonal relationship conflicts, address student and/or safety concerns, and also ease concerns and questions over larger District or State initiatives. Another goal or plan of mine is to bring the work our faculty and staff are doing across campus into the "fold" of the School. It is important to help the School become more involved and informed in our instructional and student support areas and for our representatives to help understand our needs as well. For example, the School has two tutoring liaisons, Paige Hu in Biology and Gisue Kharrati in Math. They have great communication within their departments but I have not had any conversations with them regarding their role nor have they reached out to me. Thus, I invited both of them to one of our School Chairs meeting- for them to share updates and progress and for us to share questions and concerns. I think leading these conversations are important and I will be asking them to attend a meeting once a semester I plan to do this with more of our School liaisons, like our WBL and MOST representatives. Celebrating and finding community with each other is also important. At each semester's School FLEX meeting I introduce all the new hires and acknowledge those that have moved on. Additionally, we had a School potluck/lunch to celebrate Halloween. During the last School Meeting in Spring 2023 I celebrated Don Barrie's retirement and did the same this semester with Rob Fremland and Sandy Belew. It was a great way to not only spend a Friday afternoon in December but really allowed us to laugh and find joy in why we are all here. **Update Year**: 2023 - 2024 **Action Plan Progress**: On Track

Student Success & Equity

Unit Goal: To center student success & equity through interdisciplinary projects, professional learning, and opportunities with both internal and external partners.
Goal Status: Active
Beginning Year: 2022 - 2023
Projected Completion Year: 2023 - 2024, 2024 - 2025, 2025 - 2026

Summary and Reflection

Mapping

Mesa College Strategic Plan: Roadmap to Mesa2030: (X - Highlight the X to Align)

- Completion - Objective 1: X
- Completion - Objective 3: X

Action Plans	Action Plan Update
Action Plan Status: Active **Action Plan:** Goal 2 Action List: 1. I will provide encouragement to faculty for participating in professional learning opportunities and space for them to share with the rest of the School. By recognizing achievement and faculty hearing from their peers the importance and effect to their discipline I hope more individuals will participate themselves. 2. I will start to discuss equity data – and our obligation and expectation to decrease equity gaps and increase overall student success. As scientists and mathematicians, faculty and staff are comfortable looking at data, so I will take that approach. 3. I will continue to help lead and facilitate the multiple initiatives discussed above including AB1705, MESA, and multiple grants. **Action Plan Cycle:** 2022 - 2023, 2023 - 2024, 2024 - 2025, 2025 - 2026	**Submission Date**: 12/04/2023 **Action Plan Update**: In regards to #2: I have not begun this- and will reflect over winter session break on how to start doing this. One thought I have had for a bit now, has been to send a monthly newsletter to the School (of course I also acknowledge the amount of work that would entail in keeping up with a monthly frequency). Such a newsletter would actually address several of my goals (not just this equity one) and experiences in the position over the last year – like having commonly asked questions that would help save me time repeating similar messages to employees, a "did you know" section to share new (or perhaps not as familiar or “forgotten”) initiatives or opportunities on campus, and a “equity data point” of the month. The same sentiment on equity could be achieved by presenting one specific data point at the initial School FLEX meeting each semester to set a goal for the semester or academic year. Further, sharing data on some of our grant initiatives would be beneficial for the entire School. **Update Year**: 2023 - 2024 **Action Plan Progress**: On Track
	Submission Date: 12/04/2023

Summary and Reflection

Action Plans	Action Plan Update
	Action Plan Update: In regards to #3: The initiatives related to the School of Mathematics & Natural Sciences, like AB1705, MESA, our NSF grant and HSI STEM Equity Excellence and Exito grant, take up a significant portion of my time. AB1705 involves not only the Mathematics department but the science disciplines that have math courses as prerequisites, like Biology, Chemistry, Physics, and Engineering. This Fall semester I hosted two School focusing solely on AB1705 information and facilitated faculty questions and discussions and in addition I sent multiple email updates. I have also attended weekly or monthly District Discipline meetings led by Shelly Hess- most of these were math discipline meetings but I also initiated and led a joint Business and Math Discipline meeting. The focus of the latter was on how to address the Math 116 prerequisite to Math 121 for Business majors as the verification for non-STEM majors was due in September to the State Chancellor's office. Further, I have attended some of the HSI STEM Equity, Excellence, and Exito Curriculum workgroup meetings, to update faculty and facilitate questions and discussion. Finally, I am finalizing the details of the AB1705 funding plan, prioritizing professional learning, student tutors, and "X" classes, as well as larger campus processes including Institutional Data analysis and student communication. My plan is to lead a discussion with the Math department initially on their role in AB1705 implementation and to ensure they're prepared and supported. We have hired a MESA program director, Robert Monroy, who will begin on December 8th. I have submitted the position justification form to hire an administrative assistant. The MESA center will be in MS120 with MS118 serving as an adjacent room for peer mentoring and other event space for the program. I will work with Robert over the next couple months to develop a plan for student recruitment, furnishing of the MESA center, and initial steps for the Program. We will be working closely with Toni Parsons and Amanda Fusco on the overlap of program goals with the HSI STEM grant. I have kept the School updated throughout this process and will have a more definitive plan to announce during the Spring School FLEX meeting. **Update Year**: 2023 - 2024 **Action Plan Progress**: On Track
	Submission Date: 11/30/2023

Summary and Reflection

Action Plans	Action Plan Update
	Action Plan Update: In regards to #1 "encouragement to faculty": I have initiated School Mathematics & Natural Sciences Equity MVP awards. I purchased small trophies with a little STEM spinning star to physically hand out I awarded the first one to Amanda Fusco of Chemistry during the Fall 2023 FLEX School meeting for her work on the free online Homework system as part of the Title III HSI STEM Equity Excellence and Exito Grant. I made a call for nominations this semester for my next one (that I had planned to distribute mid-semester), but received no responses. Perhaps I will develop a form for anonymous submissions next semester. I have decided to give the second award out in January's School FLEX meeting to Synthia Chang for her work on initiating the Chemistry Club and integrating Work-based learning speakers and field trips into her class. While I highlight faculty doing various professional learning and grant initiatives at School meetings, as well as share opportunities that are emailed to me, I will reflect on what else I can do to effectively encourage MORE (mainly different faculty) to start participating. I do think the action of having faculty sharing their experiences is helpful as I know after Bulent Bas and Christina Huynh discussed their experience with Humanizing Online STEM Academy during a School meeting in Spring 2023, there were a few faculty that signed up for the next cohort. Thus, my conclusion is this is an effective strategy and I should continue to do what I'm doing and not be so hard on myself. Finally, with Mesa College having received funding for AB1705 funding, my plan includes the prioritization of professional learning. Thus, this will be an additional way for faculty that are teaching our calculus classes (and related science courses) to participate in a professional learning opportunity to continue to grow and develop more equitable practices to support our underserved student populations. This is another way I can demonstrate the importance of professional learning and equitable teaching strategies is to reserve funding for such opportunities. **Update Year**: 2023 - 2024 **Action Plan Progress**: On Track