Manager PIE Report



**Manager PIE Report**

Natural Sciences Division Manager

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Division Goals

**Goal Name**

Ongoing/Multi-Year Goal

**Division Goals**

EXPAND AND SUPPORT INSTRUCTION: The Division will use outcome and placement assessment to guide planning, curriculum, design, and pedagogy. The Division will ensure that curricular, articulation, and counseling efforts are aligned to maximize students' successful completion and/ or transfer. The Division will utilize technology to improve operational efficiency and effectiveness and maintain state of the art technology in instructional and support programs. The Division will support undergraduate research activities.

**Goal Status**

Active

**Goal Year**

2021-22

**Mapping**

Strategic Priorities: (X - Highlight Selected)

* Priority 2 - Goal 1: X
* Priority 3 - Goal 1: X
* Priority 3 - Goal 2: X

Updates on Goals

**Date of Analysis**

07/19/2023

**Results/Analysis of Progress**

NSD does an excellent job on parts of this goal but has room for improvement on others. The MCS department has continued implementation of AB 705 and prepares for AB 1705. The MCS department did have some concerns regarding their support courses. A dialogue between the department, the deans, and VPI Kelly Fowler occurred during Spring 2023. It was decided to continue offering support courses along the STEM-track for MATH 150, MATH 180, and MATH 181. However, it was impressed upon the faculty that other avenues of support need to be explored since the success rate of math courses with a support course is either the same or lower than standalone sections. It was recommended to review the implementation of SIs or ETs in classes to improve success, since data show that there is about a 20% increase in success in classes with SIs or ETs.

Several faculty in the MCS department developed study skills modules that were made available to division faculty and then to the entire campus. These modules can be embedded into any Canvas shell for faculty to provide study skills support. These modules are meant as an addition to a class and not intended as actual study skills instruction as part of the COR.

The RVT program is looking for ways to help support students currently in their program. Given the large number of students admitted to the program, there is currently a bottleneck for students seeking to complete the program. Ideas ranging from a selective admissions process to additional sections are being considered.

The STEM Center piloted tutorial services for STEM courses, except for Math, during Summer 2023. The utilization of these tutors is greater than expected. The division will begin to find ways to fund these intersession tutorial services.

**Reporting Year**

2022-23

**% Completed**

50

Updates on Goals

**Date of Analysis**

09/03/2022

**Results/Analysis of Progress**

NSD does an excellent job on parts of this goal but has room for improvement on others. For example, MCS Chair Jimmy Tamayo has been scheduling meeting with counseling and other stakeholders to share the impacts of AB 705, most specifically that the college will no longer offer MATH 71 or below. The impacts of this critical decision will extend college-wide to all areas of planning, curriculum, design, and pedagogy. Rebounding from COVID is another area in progress. Departments are taking a close look at who may have been left behind and through collaboration with the deans and even the office of Instruction, we have been offering courses to help student get back on track. For example, with the help of an immediate needs request for supplies, we offered an additional surgical nursing class in RVT in order to get those students ready to receive their degree. In terms of technology, the division has been working on updating computers in labs and classrooms. Perhaps the most impressive upgrade is the newly remodeled STEM Center with state of the art technology for students. Next, the division continues to go above and beyond when it comes to undergraduate research activities. The division has secured over 3 million dollars in grant money primarily focused on supporting undergraduate research. One example is the "Preparing a Skilled Technical Workforce through Undergraduate Research" The purpose of this project is to help Mt. SAC students prepare for future careers in the STEM technician workforce. Areas for improvement on this goal is the use of outcomes. The division made great progress by inviting data coaches Dr. Tiffany Kuo and Dr. Mica Stewart to share success data. The next step is leveraging that knowledge to improve pedagogy.

**Reporting Year**

2021-22

**% Completed**

50

Updates on Goals

**Date of Analysis**

07/09/2022

**Results/Analysis of Progress**

.

**Reporting Year**

2021-22

**% Completed**

75

Updates on Goals

**Date of Analysis**

07/04/2021

**Results/Analysis of Progress**

OUTCOMES: During the COVID pandemic, outcomes assessment was not a huge focus. However, we are poised to increase participation and excel at not only SLO but PLO usage. We are fortunate to have Loni Nguyen, Co-Chair of the Outcomes Committee from our division. In addition, Carrie Miller was appointed the PLO coordinator for NSD. She has already met with departments chairs this Spring (2021) to give them a blueprint of where we are and where we need to go. STEM counselors continued to provide one-on-one counseling remotely via the STEM Center. NSD is bouncing back in terms of outcomes.

TECHNOLOGY: Thanks to CARES Act funding, the NSD was able to secure approximately $500,000 to expand services and meet the needs of students remotely. Examples of technology used in this expansion include document cameras for faculty to use a home to aid in labs, nearly 1500 microscopes for students to use in remote labs, and 500 licenses of Padlet to be used not only by NSD, but shared with faculty across campus.

UNDERGRADUATE RESEARCH: Despite being remote, the STEM Center still connected students with undergraduate research opportunities through UCI. Additionally, faculty members in Chemistry, Physics, and Engineering have been with students via grant money totaling over $500,000.

CURRICULUM: Not only did faculty members maintain current courses, many certificates and degrees were approved this year such as the AS degree in Biology and 11+ certificates in Engineering! Even more impressive, due to COVID making distance learning a necessity, all courses that were being taught online submitted a DL amendment form. Kudos to all the faculty who worked so hard to make this transition happen.

**Reporting Year**

2020-21

**% Completed**

75

Division Goals

**Goal Name**

Ongoing/Multi-Year Goal

**Division Goals**

SECURE FUNDING THAT SUPPORTS EXEMPLARY PROGRAMS AND SERVICES: The Division will provide facilities, infrastructure, and funding to support programs while utilizing existing resources to improve operational processes to maximize efficiency and maintain necessary services.

**Goal Status**

Active

**Goal Year**

2021-22

**Mapping**

Strategic Priorities: (X - Highlight Selected)

* Priority 4 - Goal 1: X

Updates on Goals

**Date of Analysis**

07/09/2022

**Results/Analysis of Progress**

The NSD continues to provide facilities, infrastructure to support programs while utilizing existing resources to improve operational processes to maximize efficiency and maintain necessary services. The NSD has secured over $750,000 in HERFF funds in order to meet the needs of students during the COVID pandemic as well as when then transitioned back. . We purchased microscopes, slides, bacteria, rocks, minerals, desktop skeletons, skulls, micropip tips, micropipettes, anatomy software, robotic parts, sound tubes, lasers, lenses, nautical charts, speakers, document cameras, wire kits, glue guns, bridal buddy horse heads, x-ray gowns, mits, x-ray racks, an RVT mixing station, tool boxes, storage boxes, totes, and even some replacement microscopes to ensure courses could continue remotely. When most labs returned to campus, MICR 22 continued to offer a few remote labs to serve students.

GRANTS: The NSD has secured nearly $3.5 million dollars in grants money. See attached summary for details.

STEM Center: The $1.1 million renovation of the STEM Center is complete and students are packing the space to take advantage of the coaching available.

**Reporting Year**

2021-22

**% Completed**

75

Updates on Goals

**Date of Analysis**

07/04/2021

**Results/Analysis of Progress**

CARES ACT: CARES Act money has truly provided a lifeline to the college. The NSD has secured nearly $500,000 in order to meet the needs of students during the COVID pandemic. We purchased microscopes, slides, bacteria, rocks, minerals, desktop skeletons, skulls, micropip tips, micropipettes, anatomy software, robotic parts, sound tubes, lasers, lenses, nautical charts, speakers, document cameras, wire kits, glue guns, bridal buddy horse heads, x-ray gowns, mits, x-ray racks, an RVT mixing station, tool boxes, storage boxes, totes, and even some replacement microscopes to ensure courses could continue remotely.

GRANTS: Faculty members int the Chemistry department received a prestigious $1 million grant from the National Science Foundation (NSF) to engage students majoring in Science, Engineering, Technology and Math (STEM) in either an authentic research experience in Summer at the University of California, Irvine or participate in an industrial internship at a local industry. The program provides financial support coupled with advising and mentoring to the selected cohorts of Mt. SAC STEM students to enhance their academic success.
Faculty members in the Physics and Engineering departments also received and NSF grant entitled "Developing Pathways to Engineering Technology Careers." Finally, the STEM Center is completing its fifth year of Project Raise, a grant to promote the transfer of STEM students to CSUF.

STEM Center: Through Measure RR, the STEM Center is undergoing a 1.1 million dollar renovation. The newly improved center will provide state of the art technology and support for STEM students.

**Reporting Year**

2020-21

**% Completed**

75

Division Goals

**Goal Name**

Ongoing/Multi-Year Goal

**Division Goals**

SUPPORT PROFESSIONAL DEVELOPMENT: The Division will encourage and support participation in professional development to strengthen programs and services.

**Goal Status**

Active

**Goal Year**

2021-22

**Mapping**

Strategic Priorities: (X - Highlight Selected)

* Priority 1 - Goal 2: X
* Priority 6 - Goal 1: X
* Priority 6 - Goal 2: X

Updates on Goals

**Date of Analysis**

07/09/2022

**Results/Analysis of Progress**

.

**Reporting Year**

2021-22

**% Completed**

75

Updates on Goals

**Date of Analysis**

07/04/2021

**Results/Analysis of Progress**

The NSD continues to support professional development. This past year, due to influences such as COVID and social justice, the types of development were focused in these areas. For example, faculty needed support to become better equipped to teach online, so they participated in FOMAR training, SPOT, or @One. Following the murder of George Floyd, the nation was once again reminded of the need for training in Diversity, Equity, Inclusion, Social Justice, and Anti-Racism. NSD faculty, staff, and mangers were encouraged to participate in CORA training.

**Reporting Year**

2020-21

**% Completed**

75

Division Goals

**Goal Name**

Ongoing/Multi-Year Goal

**Division Goals**

SUSTAIN EFFECTIVE COLLABORATION: The Division will enhance the quality of its partnerships with business and industry, the community, and other education institutions. The Division will improve the effectiveness and consistency of dialogue between and among departments, committees, teams, and employees groups across the campus.

**Goal Status**

Active

**Goal Year**

2021-22

**Mapping**

Strategic Priorities: (X - Highlight Selected)

* Priority 1 - Goal 2: X
* Priority 4 - Goal 2: X
* Priority 6 - Goal 1: X
* Priority 6 - Goal 2: X

Updates on Goals

**Date of Analysis**

07/09/2022

**Results/Analysis of Progress**

.

**Reporting Year**

2021-22

**% Completed**

75

Updates on Goals

**Date of Analysis**

07/04/2021

**Results/Analysis of Progress**

EXTERNAL: The NSD does an outstanding job of enhancing quality collaboration with external entities such as business and industry, community, and other institutions. Our CE Advisory Committees for Animal Science, Horticulture, Registered Vet Tech, and Histotech are strong and active even as they met remotely. They cultivate partnerships with industries such as Disney, Huntington, Kaiser, City of Hope, and local animal hospitals and shelters. Many of the community events held by the NSD such as Debbie Day, Farm Day, the Health Professions Conference, and tours of the Wildlife Sanctuary had to once again be put on pause due to COVID. However, we did host the very first remote Kepler Scholarship event with great success. This year’s Distinguished Kepler Lecturer was Dr. Bruce Banerdt, Principal Investigator of the Mars InSight Mission. We had over 100 participants (even some from out of state) who enjoyed the lecture, participated in a silent auction, and celebrated the success of our Kepler Scholar recipients. Finally, the NSD continues to have strong relationships with both CPP and CSUF via Project Raise.

INTERNAL: The NSD continues to promote strong collaboration across campus. One example is the work of the CE Deans Committee. We come together to discuss the needs of students, the impact of the Strong Workforce Program, and how best to optimize the use of Perkins funding. A Math faculty member, Lisa Morales, secured a mini grant in order to purchase 500 site licenses for Padlet. She is collaborating with IT to coordinate the distribution of these licenses for all those who wish to use them. Associate Dean John Vitullo co-chairs a marketing subgroup that brings together the various Academic Support Centers on campus. This year we held our first virtual Tutoring Fair. Most recently, the NSD provided temporary office space for folks from building 6 who needed a place to work as the HVAC system in that building was upgraded.

**Reporting Year**

2020-21

**% Completed**

75

Division Goals

**Goal Name**

Ongoing/Multi-Year Goal

**Division Goals**

PROMOTE DIVERSITY, EQUITY, INCLUSION, SOCIAL JUSTICE & ANTI-RACISM: The Division is committed and actively working to create a culture that values, celebrates, and empowers all populations. recognizing the value of diversity for both Mt. SAC and for overall American society. This commitment includes celebrating the contributions of faculty, staff, and students in advancing equity, diversity, inclusion, social justice, and anti-racism.

**Goal Status**

Active

**Goal Year**

2021-22

**Mapping**

Strategic Priorities: (X - Highlight Selected)

* Priority 1 - Goal 1: X
* Priority 1 - Goal 2: X
* Priority 1 - Goal 3: X
* Priority 2 - Goal 1: X
* Priority 2 - Goal 2: X
* Priority 4 - Goal 2: X
* Priority 5 - Goal 1: X
* Priority 5 - Goal 2: X
* Priority 6 - Goal 1: X
* Priority 6 - Goal 2: X

Updates on Goals

**Date of Analysis**

07/09/2022

**Results/Analysis of Progress**

.

**Reporting Year**

2021-22

**% Completed**

75

Updates on Goals

**Date of Analysis**

07/04/2021

**Results/Analysis of Progress**

As the entire College embarks upon furthering the principles of DEISA , the NSD has started its work realizing there is still much to do. Professional development training such as CORA has been encouraged. Managers, staff, and faculty have attended Equity Summits provided by the College. Faculty, staff and managers have attended book groups such as the one for the book White Fragility.

SEAP PLANS: Both the MARCS and STEM Center have worked closely with RIE to develop comprehensive SEAP Plans. In these plans, each center has identified targeted groups of students who are disproportionately impacted in terms of success and completion. We will continue to measure success with collaboration and support from RIE. Centers will made conscientious efforts to attract and support students who are in most need of their services.

DEANS: The deans began visiting department meetings, starting with Biological Sciences, to discuss the importance have have diverse hiring committees. Through open dialogue, tough topics were discussed and a free flow of ideas was shared. These types of conversations are essential to begin to move the needle on all issues of DEISA.

**Reporting Year**

2020-21

**% Completed**

25

Division Goals

**Goal Name**

Ongoing/Multi-Year Goal

**Division Goals**

ENSURE ACCESS, SUCCESS, & COMPLETION: The Division will increase access for students by strengthening recruitment and accurate placement into courses. The Division will prepare students for success through the development and support of exemplary programs. The Division will ensure students entering credit programs of study will be ready for college level academic achievement including improvement of career educational opportunities to help students maintain professional currency and achieve individual goals.

**Goal Status**

Active

**Goal Year**

2021-22

**Mapping**

Strategic Priorities: (X - Highlight Selected)

* Priority 1 - Goal 1: X
* Priority 1 - Goal 2: X
* Priority 1 - Goal 3: X
* Priority 2 - Goal 1: X
* Priority 2 - Goal 2: X
* Priority 3 - Goal 2: X
* Priority 4 - Goal 1: X
* Priority 6 - Goal 1: X
* Priority 6 - Goal 2: X

Updates on Goals

**Date of Analysis**

07/19/2023

**Results/Analysis of Progress**

ENROLLMENT:
Analyzing enrollment trends through the pandemic has been interesting. We have included numbers from 2018-19. 19-20, 2021 as reported in Power BI.

ENROLLMENT:
2017-18: 49,278
2018-19: 49,352 (+74)
2019-20: 50,795 (+1,443)
2020-21: 50,169 (-626)
2021-22: 41,812 (-8,357)
2022-23: 41,509 (-303) according to SSR0037-G reports

The sizable drop in enrollment in NSD classes from 2020-21 to 2021-22 can be attributed to several factors. All departments experienced a drop in enrollment from 2020-21 to 2021-22 related to COVID. However, MCS experienced the sharpest drop in enrollment in math classes between the two academic years where enrollment dropped from 22,277 to 17,263, a net loss of 5,014. These numbers division-wide correlate to the COVID pandemic and that fact that several departments were not able to offer certain courses due to face-to-face instruction being limited. Division-wide, enrollment leveled out from 2021-22 to 2022-23. According to the data in SSR0037-G, enrollment in math classes dropped further to 16,689 for 2022-23, an additional net loss of 574. Other departments had positive enrollment changes between 2021-22 and 2022-23 to compensate for this loss. Positive gains in enrollment by departments, such as Biology and ESA, is due to the increased number of online sections when compared pre-pandemic.

The significant drop in math enrollment can be attributed to several factors. First, the implementation of AB 705 and the removal of all pre-transfer level math courses reduced the number of offered sections significantly. During the last academic year that MATH 50, MATH 51, and MATH 71 were offered (2020-21), 16 sections of MATH 50, 29 sections of MATH 51, and 86 sections of MATH 71 were scheduled. This is a loss of 4,716 available seats from 2020-21 to 2021-22. During 2022-23, several sections of math had to be canceled due to low enrollment. As such, it may be some time until math offerings settle at the correct number offered. However, pre-AB 705 implementation enrollment numbers will probably not be reached again in math.

Other departments in the division worked tirelessly to develop lab kits for remote labs during the pandemic. Thanks to this development, several departments can continue to offer online labs to accommodate for the lack of lab space and to increase FTES. An issue that needs to be addressed is the very low return rate of lab kits by students. The division is looking into placing holds on a student’s record. Lab kits have helped keep enrollment up in those courses.

A majority of sections offered by the division during Summer 2023 are online. On campus sections did not fill as quickly or as solidly as online sections. This will be something to keep in mind for future summer sessions.

RETENTION:
The NSD tends to have very good retention rates. We are pleased to see that retention rates are hovering in the 82-85% range. The retention rates of the division are slightly lower than the overall college's retention rate.

RETENTION:
2017-18: 84.5%
2018-19: 84.6%
2019-20: 88.7%
2020-21: 100%
2021-22: 83.0%
2022-23: 82.8%

SUCCESS:
The NSD tends to trend lower than the college average in terms of success. Quite simply, Science and Math courses are tough for students. Success rates did rise due to the pandemic. However, now with a return to normal, we see success rates return to their pre-pandemic numbers. Continued efforts in increasing awareness of equity, diversity, and inclusion issues are needed to address inequities.

SUCCESS:
2017-18: 63.2%
2018-19: 63.1%
2019-20: 69.9%
2020-21: 84.4%
2021-22: 63.1%
2022-23: 62.8%

AWARDS:
As noted in previous PIE reports, awards did drop during COVID. However, now that we are recovering from the pandemic, the number of awards has returned to pre-pandemic levels. This is largely due to degrees and certificates that require hands on demonstration of competency. Many of the certificates and degrees offered through Ag have passed pre-pandemic numbers. This, along with new awards offered in the division, have helped improve the total number of awards given to students. We anticipate that this will continue to trend upward.

AWARDS:
2017-18: 270
2018-19: 443
2019-20: 266
2020-21: 391
2021-22: 424

**Reporting Year**

2022-23

**% Completed**

75

Updates on Goals

**Date of Analysis**

07/09/2022

**Results/Analysis of Progress**

.

**Reporting Year**

2021-22

**% Completed**

75

Updates on Goals

**Date of Analysis**

07/04/2021

**Results/Analysis of Progress**

ENROLLMENT:
Analyzing enrollment trends through the pandemic has been interesting. We have included numbers from 2018-19. 19-20, 2021 as reported in Power BI.

ENROLLMENT:
2018-19: 49,353
2019-20: 50,793
2020-21: 50,120

CAUTION: We believe the numbers from 20-21 may not be accurate. For example, Power Bi shows that we have 100% retention for that year. While we tend to trend high on retention, that number cannot be accurate. Next, as emphasized in the Enrollment Management Academy (7/12-7/15 2021) we should NOT use the data from the COVID period as predictive of future trends. For example, many units experienced a drop in enrollment during COVID. However, the NSD experienced a bump. The explanation is two-fold. First, during “normal” on campus scheduling, we are bound by lab space. As the chair of the Biological Sciences tells us, “we could offer an infinite number of Anatomy, Physiology, and Microbiology classes if we just had space.” Second, through the hard work and ingenuity of our amazing faculty and staff, we were able to create remote labs during the pandemic. Throughout the PIE document, you find references to this herculean effort. As such, we were able to add more labs since we were not bound by space.

RETENTION:
The NSD tends to have very good retention rates. We are pleased to see that we are trending upward. However, as mentioned before, we believe the 20-21 number to be to good to be true.

RETENTION:
2018-19: 84.6%
2019-20: 88.7%
2020-21: 100%

SUCCESS:
The NSD tends to trend lower than the college average in terms of success. Quite simply, Science and Math courses are tough for students. However, with an increase in awareness of equity and diversity issues coupled with targeted efforts by faculty members (such as the Community of Practice) we are experiencing an upward trend in success rates. Worth noting is that both Latinx and Black/African American students who are enrolled in STEM courses and have visited the STEM Center 4 or more times have 15.3% higher success rates than those who have not.

SUCCESS:
2018-19: 63.1%
2019-20: 69.9%
2020-21: 84.4%

AWARDS:
In terms of awards, there was quite a dip during COVID. Analysis here indicates that although more basic lab courses were offered, many capstone courses for degrees and certificates were not offered as they required hands on demonstrations of competency. A good example is AVMA requirements in the AG area where many of our certificates reside. In collaboration with IT and the Business Division, the Instructional Leaders Team was provided with the names of students who were within 90% of finishing their degrees or certificates. The NSD Deans provided this data to department chairs who then began to contact students directly to let them know that they were very close to finishing and that courses were available for them. This was a conscious, targeted effort to personally reach out to those students who so close to completion. We anticipate a bump in awards as we return to campus.

AWARDS:
2018-19: 443
2019-20: 266
2020-21: 341

**Reporting Year**

2020-21

**% Completed**

75