1. Assessment Plan - Three Column

PIE - Natural Sciences: Earth Sciences & Astronomy Unit

Unit Goals	*Resources Needed*	*1. Where We Make an Impact: Closing the Loop on Goals and Resources*
ASTR AA degree - Develop Astronomy Associates Degree **Status:** Active **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 09/01/2016	**In Progress -** Create an Astronomy AA degree ***Describe Plans & Activities Supported (Justification of Need):** Need to wait until Astr11 is full approved to start working on this. ***Lead:** Micol Christopher	**Reporting Year:** 2017-18 **% Completed:** 0 Once Astr11 is approved, we can start working on AA Astronomy again. Pending approval of astr11. see analysis for Astr11 course. (05/18/2018)
Geology Degrees - Develop Geoscience Degrees to Meet Student Needs **Status:** Active **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 09/01/2016	**Report directly on Goal**	**Reporting Year:** 2021-22 **% Completed:** 100 The AS-T degree was approved in 2020. (07/27/2022)
	Develop AA Natural Sciences with an emphasis in geology ***Lead:** Dave Mrofka **Planning Unit Priority:** Low	**Reporting Year:** 2018-19 **% Completed:** 0 No progress, but Hilary is working on AA-T (05/17/2019)
	Develop Transfer Degree in Geology ***Describe Plans & Activities Supported (Justification of Need):** Propose Transfer degree in Geology and establish C-ID for all involved courses. ***Lead:** Hilary **Type of Request:** OTHER OPERATING EXPENSES AND SERVICES: Requests for contracted, legal/ audit, personal/ consultant, rent/ leases, repairs/ maintenance, and other misc. services. May also include request for	**Reporting Year:** 2020-21 **% Completed:** 100 The AS-T degree was approved in 2020. (05/25/2022)

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	travel and conference that does not require the assistance of POD. **Planning Unit Priority:** High	
Revise AA in Liberal Arts with and Emphasis in Natural Science - Revise the AA in Liberal Arts with and Emphasis in Earth Science to better meet the needs of our students. **Status:** Active **Goal Year(s):** 2017-18, 2018-19, 2019-20, 2020-21, 2021-22 **Date Goal Entered (Optional):** 06/27/2017	**In Progress -** Get this degree revised and approved. Degree to include a new course for basic mapping skills, required or expected of students transferring to 4YCs as geology majors. **Planning Unit Priority:** High	**Reporting Year:** 2018-19 **% Completed:** 100 This degree has been modified and approved by EDC and the Chancellor (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 75 All the documents have been submitted to EDC, but AA Emphasis in Natural Sciences is currently at stage 5, under review by the curriculum office. The curriculum liaison has commented that the degree needs to be "restructured" to offer clearer pathways for students, but is unsure how that would look. The task force, given the responsibility for revising the degree, is happy with the degree as is, after submitting a number of new courses and withdrawing several others. Information is from https://webcms.mtsac.edu/admin/all_proposals.asp, on
New Courses - Create and teach new courses **Status:** Active **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 09/01/2016	**In Progress -** Create a 1-credit "Basic Science Skills" Class. This course would be designed to give students the tools they will need to be (more) successful when they later take a geoscience course.	**Reporting Year:** 2017-18 **% Completed:** 0 Have not made progress on this class idea. (05/18/2018)
Opportunities - Provide students with opportunities that broaden their interests in Earth and Space Sciences **Status:** Active **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 09/01/2016	**Report directly on Goal**	**Reporting Year:** 2021-22 **% Completed:** 25 Plan: Measure telescope vibrations and propose vibration dampening plan. Update:Work is planned for this summer to test out an AO (adaptive optics) unit that may help mitigate this vibrations as well as install counterweights to help the balance the scope better and minimize resonance.

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	Report directly on Goal	Plan: Create 3-4 new planetarium shows Update: Work on the "Beyond our World" planetarium show is in its final stages. Plan: Planetarium lobby and grounds renovation Update: Heather discussed possible improvements with Gary Gidcumb, who says it may be possible to make some of the changes around the same time the areas south of the planetarium will be renovated in about a year, however no commitments or firm plans have been made. Plan: Create useable rock cutting and polishing room in the basement of building 11 Update: This has not been worked on since 2019 - Covid-19 pandemic and campus shutdown and Hilary's sabbatical leave put it on pause. However, it is still a goal. Plan: Maintenance on both planetarium projection systems Update: The Zeiss projector maintenance was completed in February by a Ziess technician from Germany. The starball misalignments were fixed as well as the planet projectors. The issue behind the lost connection between the Ziess, Bowen and Digistar projectors was solved and the failing main computer was also replaced with an updated new computer which should last a long time. Another maintenance visit is recommended to happen again in at least 2 years to keep the system running well. (07/27/2022)
	In Progress - TV Monitors in hallway of Bldg 60, 1st floor ***Describe Plans & Activities Supported (Justification of Need):** 3 TV monitors. Our efforts to advertise our offerings will be enhanced by the installation of 3 TV monitors in the halls on the first floor of building 60. We intend to present course offerings, open classes, upcoming events including field trips and lectures, and topics of general	**Reporting Year:** 2018-19 **% Completed:** 0 This project was not funded and still on hold. We will continue to leave this item in our PIE to request funding again for 2019-2020 budget year. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 0 Equipment budget request for this item was not approved. This item will continue to be on our goal list. (05/18/2018) **Reporting Year:** 2016-17 **% Completed:** 50
		: Evaluation of the project have taught us that having display

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	interest in our department such as including streaming of NASA programs. We expect more efficient enrollment and increased interest in our offerings. ***Lead:** Julie Bray-Ali **What would success look like and how would you measure it?:** We will have 3 interactive monitors throughout the first floor of building 60 to introduce students to Earth Space science / opportunities, along with sharing student success stories. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 12000	i have contacted Mikaela Klein and came up with the rough skedtch of the project (see below) however hte cost of the project was fairly high (approximately $10,000). as a back up plan, we have discussed the project with IT department and planning to have 2 iMAC in a glass case to loop department information as well as general interest in science program. Dave Mrofka, Hilary Lackey and Julie Bray-Ali will be working on the plan and content development during summer 2017. Karen Long will assist us with the installation of the iMACs. 100% with the back up plan as of the end of Summer 2017. This item will stay on our PIE to hopefully have the actual monitors installed in the hallways in next few years. Tentative plan: Building: 60 Rooms: hallway between 60-1515,1511&1512 and outside of 60-1306 Scope: -Purchase and installation of three (3) Flat Panel Displays (FPD is the generic technical term I use, not sure what Chris uses). -Computers needed? -Software needed? -Run new power, data, and AV infrastructure to support FPDs (this is the construction part that needs to be included in the scope). -Repaint as needed. (06/16/2017)	panel is more expensive than we have originally expected. Our quick fix solution of using iMac in glass display cabinets will be implemented. . In near future, we would like to have the actual monitors installed in the hallways.s. (06/29/2017)
	In Progress - Measure telescope vibrations and propose vibration dampening plan ***Lead:** Heather Jones	**Reporting Year:** 2021-22 **% Completed:** 25 Work is planned for this summer to test out an AO (adaptive optics) unit that may help mitigate this vibrations as well as install counterweights to help the balence the scope better and minimize resonance. (05/25/2022) **Reporting Year:** 2018-19 **% Completed:** 25 We've had discussed the issue with professors from the Physics and Engineering Department. They have recommended some two students who would like to take this on as a special research project. We are communicating	

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		with these students to start the data gathering of this research project soon. (05/17/2019)
		Reporting Year: 2016-17 **% Completed:** 25 Telescope video camera purchased in 2015 to help measue the vibrations turned out to be incompatable with any powered USB extender and is therefore incompatable with our systems. A replacement camera was purchased in 2016 and is currently being tested. During 2017 we also took some exoplanet data to test our equipment's ability to do this kind of research. During a consultation with Dennis M. Conti, a exoplanet research expert it was determined that the vibration effects will prevent exoplanet research. Vibrations need to be measured and a dampinging plan developed. This will likely resort in the deforking and reinstallation of the 16 inch telescope. (06/27/2017)
	Completed - Create 3-4 new planetarium shows. ***Lead:** Heather Jones	**Reporting Year:** 2021-22 **% Completed:** 25 Work on the "Beyond our World" planetarium show is in it's final stages. (05/25/2022)
		Reporting Year: 2020-21 **% Completed:** 75 Two in house productions are in development (06/07/2021)
		Reporting Year: 2018-19 **% Completed:** 75 During summer 2018, the planetarium's system was upgraded to Digistar 6. This upgrade allows us the capability to stream planetarium shows, increasing the number of shows we can offer by 26%. Not all planetarium show titles are available for streaming. We will still will be purchasing shows and renew our existing show licenses as needed, but we estimate savings a of $5,000/year with this new capability. (05/17/2019)
		Reporting Year: 2017-18 **% Completed:** 100 Five new shows were added to the planetarium show library during 2016-2018: Dark Matter Mystery, From Earth to the Universe, Seeing, Totality and Phantoms of the Universe. We are working on upgrading our system to

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		Digistar 6 which will allow us to take advantage of dome streaming services and offer a larger vareity of shows. (05/23/2018)
		Reporting Year: 2016-17 **% Completed:** 100 Four new shows were created during 2016-2017: Dark Matter Mystery, From Earth to the Universe, Seeing, Totality. (06/27/2017)
	In Progress - Planetarium lobby and grounds renovation	**Reporting Year:** 2021-22 **% Completed:** 0 Heather discussed possible improvements with Gary Gidcumb, who says it may be possible to make some of the changes around the same time the areas south of the planetarium will be renovated in about a year, however no commitments or firm plans have been made. (05/25/2022)
		Reporting Year: 2018-19 **% Completed:** 0 A 80% scale model of the Apollo 11 Lunar Lander is being donated to the college with plans on having it displayed near the planetarium. We are working with the building and facilities management department to improve the planned site of this display. (05/17/2019)
		Reporting Year: 2017-18 **% Completed:** 0 The plants that died in the flowerbeds at the planetarium main entrances have been replaced by bushes. Heather Jones met with Patty Leon-Encalade from facilities in May 2018 to discuss possible renovations for the planetarium lobby, grounds, and restrooms. We are waiting to hear back from her. (05/23/2018)
		Reporting Year: 2016-17 **% Completed:** 0 Grounds was contacted and flowers were planted in the flower bed at the planetarium's main entrance. The flowers have since died. (06/27/2017)
	In Progress - Storage room needed adjacent to planetarium for frequently used tables and chairs. ***Describe Plans & Activities**	**Reporting Year:** 2017-18 **% Completed:** 0 Tables and chairs used during weekend planetarium events are currently stored in the foyer and lobby. The need for

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	Supported (Justification of Need): Tables and chairs and used during weekend planetarium events are currently stored in the foyer and lobby. ***Lead:** Heather Jones	additional space was brought to facilities attention and was mentioned in the 2018 Master Plan but not specifically addressed. A solution is still needed. (05/23/2018) **Reporting Year:** 2016-17 **% Completed:** 0 This is an ongoing need at the planetarium, requests for expansion of the planetarium and restrooms have been included in the masterplan proposal. (06/27/2017)
	In Progress - Continue to offer students opportunities to become involved in research in the geosciences. We currently have two students doing research through the Redinger grant, others working with Bob Nelson on a project, and access to the CAMPARE and CalBridge projects through Mike Hood's involvement in both of those grants. ***Describe Plans & Activities Supported (Justification of Need):** Support from the college to continue this important work. The ability for faculty to be paid to work on research experience courses (99 classes).	**Reporting Year:** 2018-19 **% Completed:** 100 RESSG - Brittany Brelle completed her project with Dave. Astr 99 - telescope research class had 4 students in Fall 2018. Math 99 - Travis Navarrette was selected for a SIRI projection Fall 2018. Morgan Palmer and Joel Gutierrez are working with Bob and Mark. This project will continue. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 100 Dave Mrofka worked with Adam Fuentes on ESSRRG. Have completed his research, successfully completed a poster presentation and Adam has since transferred to 4 year institution (UC-Davis). Heather Jones, Jessica Draper and Julie Bray-Ali are continuing to work with Chelsea Adelman on ESSRRG - Education research: Learning gain through demonstrations and activities. Chelsea collected a substantial amount of data and presented at both SCCUR in November 2017 and at the Kepler Scholarship event in 2018. We are still withking with her to add more activities in the exploration center. Christina VIdes participated in CAMPARE 2017. Her research was presented at numerous conferences including SCCUR 2017 and AAS 2018. Chelsea Adelman will participate in CAMPARE during Summer 2018. Nikki Cielo is working on SIRI JPL student intern program on Graphics design and technical visualization project during spring 2018. During fall 2017 semester, we offered Astrophotography course as Astr99 for the first time. We had 3 students enrolled in the course and was a great success! Winter 2018 saw the initiation of Morgan Palmer

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		and Robert Zou as ASTR 99 students working with Bob Nelson. Spring 2018, students Morgan Palmer and Danny Vencek-Martinez started an independent research project correlating sedimentology and stratigraphy of the coast with core samples that Hilary Lackey is procuring from CRC oil consulting firm. Note that we are marking this as 100% complete, though this work will continue on in the future. (05/18/2018)
	Request - Full Funding Requested - Create useable rock cutting and polishing room in the basement of building 11. ***Describe Plans & Activities Supported (Justification of Need):** Create a space for rock cutting and polishing in building 11, and purchase a new tile saw for trimming small rock samples. This will give students in classes the opportunity to prepare specimens. Facilities or custodial services to help with hauling scrap wood and large waste items away from the room. Move junk out of the way and have it removed. 18 gallons of antifreeze for the large saw that is in there already (and bi-annual replacement of this antifreeze).Fill large saw with antifreeze, and set up a bench with a new tile saw. Have trainings for students and staff. This will also benefit the Geotech program by providing equipment to teach lapidary skills, and will be useful for Geo 99 projects. $2000 total for for tile saw, accessories (Model #	**Reporting Year:** 2021-22 **% Completed:** 0 This has not been worked on since 2019 - Covid-19 pandemic and campus shutdown and Hilary's sabbatical leave put it on pause. However, it is still a goal. (05/25/2022)

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	BEAST7PKIT Internet #303674598 Store SO SKU #1002842165 $895.00+ tax and ship) and antifreeze. Will need ongoing costs for maintenance and resupplying antifreeze. The campus shutdown during the pandemic put this on pause. Hilary will take it up again in Fall 2022 the equipment prices have not changed. We will need to investigate access to that room in Building 11, because IT has offices down there now. ***Lead:** Hilary Lackey **What would success look like and how would you measure it?:** Rock sample preparation will be included in class curriculum and students will demonstrate skills. **Type of Request:** INSTRUCTIONAL EQUIPMENT: Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 2000 **On-Going Funding Requested (if applicable):** 200 **Total Funding Requested:** 2200	
	Request - Full Funding Requested - Maintenance on both planetarium projection systems ***Describe Plans & Activities Supported (Justification of Need):** Our planetarium uses two planetarium projection systems.	**Reporting Year:** 2021-22 **% Completed:** 100 The Zeiss projector was maintenanced in February by a Ziess technician from Germany. The starball misalignments were fixed as well as the planet projectors. The issue behind the lost connection between the Ziess, Bowen and Digistar projectors was solved and the failing main computer was

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	Both need to be maintained on a regular basis. We maintain our Digistar projector with an annual maintenance agreement with Evans and Sutherland (Digistar's manufacturer) to support the software and hardware of the system. The Zeiss Skymaster ZKP 4 requires biannual maintenance from a certified technician which cost ~$15,000 per visit (subject to exchange rates). ***Lead:** Heather Jones **What would success look like and how would you measure it?:** We would continue to maintain both planetarium projection systems, to ensure that the planetarium is usable for students and the community. **Type of Request:** OTHER OPERATING EXPENSES AND SERVICES: Requests for contracted, legal/ audit, personal/ consultant, rent/ leases, repairs/ maintenance, and other misc. services. May also include request for travel and conference that does not require the assistance of POD. **Planning Unit Priority:** High **On-Going Funding Requested (if applicable):** 15000 **Total Funding Requested:** 15,000 **Request - Full Funding Requested -** We need to purchase a set of high-quality (i.e., 4-season, lightweight, streamlined, and made of durable material), 2 and/or 3-person tents for geology field trips. Examples of the types of tents to purchase: 3 person ($150) 3 of each	also replaced with an updated new computer which should last a long time. Another maintenance visit is reccomended to happen again in at least 2 years to keep the system running well. (05/25/2022) **Reporting Year:** 2020-21 **% Completed:** 50 Digistar annual maintenance agreement with Evans and Sutherland is funded in the annual department budget. Zeiss maintenance is unfortunately not yet funded. I reccomend a zeiss technician "tune-up" the projector every two years. (06/01/2021)

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	style. https://www.rei.com/product/200115/mountain-summit-gear-campside-3-person-dome-tent 2 person ($275) https://www.rei.com/product/213703/mountainsmith-morrison-evo-2-tent-with-footprint ***Describe Plans & Activities Supported (Justification of Need):** Our robust geology field program involves overnight and multi-day field trips with tent camping. Most of our tents are from Walmart or Target and they get destroyed in windy conditions. Rather than frequently replace cheap tents, we propose investing in higher quality tents. Also, we find that 5+ person tents are difficult to put up and maintain, so we'd like more 2 and 3 person tents. Many of our field sites are located (a) in areas frequently subject to high winds and/or (b) at high elevations and/or (c) in areas that require a hike in to the camping area. In addition, social distancing protocols in the face of the pandemic make it undesirable to fill tents to capacity. Our existing collection of tents in the department are primarily 3-season, bulky, large (6-10 person) tents and have proved to be less than ideal for the past 2 semesters on field trips because of	

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	equipment failure and inadequate space for large tents. Acquiring a set of higher quality, 2-3 person tents for geology field trips will improve students' comfort and safety on field trips and allow us to have a configuration of tents on field trips that promotes social distancing and that will fit into our allotted camping space. ***Lead:** Hilary Lackey, Becca Walker, and Dave Mrofka **What would success look like and how would you measure it?:** Success would be having this higher-quality camping equipment available for students to use on field trips. This will allow students better access to the learning that can be done in the field. **Type of Request:** INSTRUCTIONAL EQUIPMENT: Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 2500 **Total Funding Requested:** 2500	
Student success - Apply outcomes research to teaching methods and curricular planning in an effort to help our students achieve academic success. **Status:** Active **Goal Year(s):** 2016-17, 2017-18,	**Report directly on Goal**	**Reporting Year:** 2021-22 **% Completed:** 25 The subject of tutoring has come up in department meetings. Getting tutors or coaches (like in Biology) is still a goal. However, on-campus tutoring shut down over the pandemic.

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2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 09/01/2016	**Report directly on Goal**	Plan: Lab space that can be used by all Earth Science disciplines Update: None. A lack of space continues to be a problem for our department Plan: Create "Instructional Toolkit Boxes" for adjunct faculty members. Update for 2020-21: Kits for some topics have been put together but there are more that we plan to complete. COVID stopped the process. Once we return to campus, the oceanography faculty team can plan what else we would like to add. Additionally, Hilary will be returning from her sabbatical, which will open the option of additional kits - focus on fossils. Update for 2021-22: Tania put many of these together already. We would like to make more, with new activities as need and inspiration arises. (07/27/2022)
	In Progress - Purchase and Install a Modern Weather Station ***Describe Plans & Activities Supported (Justification of Need):** Purchase a modern weather station. ***Lead:** Craig Webb **One-Time Funding Requested (if applicable):** 5500	**Reporting Year:** 2018-19 **% Completed:** 75 Weather station has been purchased and delivered, but has not yet been installed or utilized. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 75 Weather station equipment was purchased during spring 2018 semester, though it has not been delivered yet. We are planning to install the weather station and start using the unit in meteorology lecture and lab courses starting fall 2018. We need add new goal to develop activities using the new weather station for 2018-2019 PIE (05/18/2018) **Reporting Year:** 2016-17 **% Completed:** 25 Not yet purchased. We have a plan for a new weather station, however, funding is needed to complete this project. (06/25/2017)
	In Progress - Actively recruit and hire student tutors for our General Education courses. We serve almost 2000 students per year in ASTR 5,	**Reporting Year:** 2021-22 **% Completed:** 0 The subject of tutoring has come up in department meetings. Getting tutors or coaches (like in Biology) is still a

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	GEOL 8, METO 3, and OCEA 10. There is tutoring on campus for Math and English, but tutoring resources have not been made available in our area. For 2017-2018 academic year, we are submitting SI request for Astr5, Astr8, Ocea10 and Geol 1. ***Describe Plans & Activities Supported (Justification of Need):** Funding to pay student tutors. Support from the tutoring center or STEM center. ***Lead:** Faculty, STEM-center	goal. However, on-campus tutoring shut down over the pandemic. (05/25/2022) **Reporting Year:** 2020-21 **% Completed:** 25 We had some student resources available at the STEM center (textbooks, planisphere, etc) Once the newly renovated STEM center opens, Julie will follow up to update our resources (06/07/2021) **Reporting Year:** 2018-19 **% Completed:** 0 Have attempted to get an SI for Physical Geology the last two semesters, but denied funding. (05/17/2019) **Reporting Year:** 2016-17 **% Completed:** 50 Currently we have regular weekly tutoring sessions fro Astronomy 8. we have looked into adding Oceanography tutoring sessions, but we were not able to establish a schedule. We need to start Oceanography tutoring session from first week of the semester in Fall 2017. (06/25/2017)	**:** We need to establish a schedule from the beginning of the semester. Tutoring sessions are more likely to become part of the student's regular weekly schedule if started early in the semester. We will establish both astronomy and oceanography tutoring session schedules by the end of week 1 during fall 2017. (06/25/2017)
	In Progress - Lab space that can be used by all Earth Science disciplines ***Describe Plans & Activities Supported (Justification of Need):** Design a workspace for students of Earth Sciences that would: -be accessible to all at times when campus is open (7:00am-10:00pm) -be able to safely house research equipment -provide spaces for various research projects (equipment for sediment/rock analyses, large tables for map projects, microscopes, computers including GIS, projector/screen or 4K monitor,	**Reporting Year:** 2021-22 **% Completed:** 0 None. A lack of space continues to be a problem for our department (05/25/2022) **Reporting Year:** 2018-19 **% Completed:** 0 There have been zero meetings of the Building Committee since its formation about 2 years ago. (05/17/2019) **Reporting Year:** 2016-17 **% Completed:** 0 There have been no opportunities for us to increase lab space or offerings. (06/25/2017)	

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	whiteboard space, etc.) ***Lead:** Mark Boryta **What would success look like and how would you measure it?:** Success would look like a small classroom dedicated to Earth Sciences & Astronomy Research projects; other uses would be discouraged. There would be large tables, binocular and petrographic microscopes, a GIS computer, a projector, and a large-format (>23") printer. Success would be measured by the quality of student presentations at area/national conferences (SCCUR, GSA, etc.) **Type of Request:** FACILITIES: This section includes minor building improvement projects and alterations to specific rooms or operational areas. **Planning Unit Priority:** Medium **Total Funding Requested:** 0	
	In Progress - Equity in learning in all intro astronomy courses ***Describe Plans & Activities Supported (Justification of Need):** The ability for faculty to be paid to work on research experience courses (99 classes). ***Lead:** Mike Hood and Julie Bray-Ali **Planning Unit Priority:** High	**Reporting Year:** 2017-18 **% Completed:** 75 We are continuing to implement the 2 activities developed. We are no longer collecting pre-test and post data as we already have ample amount of data to analyze before moving forward to the next step. (05/18/2018) **Reporting Year:** 2016-17 **% Completed:** 100 We received funding though the FIG projects to assess student learning in our astronomy courses. Pre- and post-tests were given to astronomy students in every section. The FIG funding allowed us to hire a student to help score tests and analyze the score results. We used this data to find concepts that students were struggling to understand, and designed activities to help students learn this material. We presented one full year worth of our data to other faculty members inside and outside of our department.
		: We were able to show how the activities we created helped improve student learning, and continue to use this assessment data to pinpoint areas where we can improve student learning. We also used the data we collected to as a part of our SLO assessment for the year, which helped inform the changes we made to Astr5 in

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		(05/24/2017)	the process of our 4-year course review. (05/24/2017)
	In Progress - Create "Instructional Toolkit Boxes" for adjunct faculty members. To ensure quality instruction by all faculty for Oceanography, full-time Oceanography faculty plan on putting together “instructional tool-kit boxes” for all adjunct faculty. These boxes will include material for hands-on activities for lecture courses. Adjunct faculty members often only come to our campus to teach one or two classes. It is instrumental for these faculty members to know that they have a space where they can store their own material that they can count on being there and ready for use. ***Describe Plans & Activities Supported (Justification of Need):** Have locks installed on all cabinets in 60-1511 to allow adjunct faculty to have somewhere to store their materials. Personal spaces as well as well maintained joint equipment, will encourage adjunct faculty to do more hands on activities and to feel welcomed at Mt. SAC. Purchase and outfit toolkit boxes with the necessary materials for each adjunct faculty member. - $3000 Funding for adjunct faculty to be paid to attend a flex-day activity for introduction of the use of the boxes. - $500	**Reporting Year:** 2021-22 **% Completed:** 100 Tania put many of these together already. We would like to make more, with new activities as need and inspiration arises. (05/25/2022) **Reporting Year:** 2020-21 **% Completed:** 50 Kits for some topics have been put together but there are more that we plan to complete. COVID stopped the process. Once we return to campus, the oceanography faculty team can plan what else we would like to add. Additionally, Hilary will be returning from her sabbatical, which will open the option of additional kits - focus on fossils. (06/07/2021) **Reporting Year:** 2018-19 **% Completed:** 75 Most of the material needed for the newly developed activities has been purchased and is already being used. Faculty need to come together to put more boxes together. For this purpose more boxes need to be purchased. It is important to complete this soon to keep material in order. Goal is for faculty to be able to rely on material being available when they need it and in designated locations. More material needs to be purchased to maintain and expand the collection. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 25 The Oceanography faculty have met and discussed which materials would be beneficial to have to compliment the lecture courses. Order requests were submitted to lab technician in early April, 2018, and some materials arrived. Once material arrives, boxes will be put together to be completed by the start of Fall 2018. (05/18/2018)	

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	***Lead:** Tania Anders **What would success look like and how would you measure it?:** Have tool kits available for adjunct faculty members ready and available to use in their classrooms. **Type of Request:** INSTRUCTIONAL EQUIPMENT: Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 2000 **Total Funding Requested:** 2000	
	Request - Full Funding Requested - Student worker budget to pay student to work on data entry and analysis. ***Describe Plans & Activities Supported (Justification of Need):** Intro astronomy student learning research is still continuing. Results have already lead to iprovements in our teaching in introductory astronomy courses. We will use the data we have already collected to inform our work on developing additional in-class activities to resolve difficult topics. ***Lead:** Mike Hood and Julie Bray-Ali **What would success look like and how would you measure it?:** Continue to work on analysis of the data we collected. This data consists of pre- and post test in all intro astronomy courses to assess most difficult topics in intro astronomy	**Reporting Year:** 2018-19 **% Completed:** 0 This budget increase has not been funded. (05/17/2019)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	courses and develop additional activities / demos. **Planning Unit Priority:** Medium **One-Time Funding Requested (if applicable):** 300	
	Upgrade equipment, demos, and posters in room 11-2115 to give students in that classroom the same learning opportunities as students in other classrooms. **Planning Unit Priority:** High	**Reporting Year:** 2020-21 **% Completed:** 50 Jessica and Julie have added telescopes, celestial spheres, posters and other items in the classroom. Post pandemic, we will be reassesing the condition of the room and be updating the room prior to the start of Fall 2022 (06/07/2021) **Reporting Year:** 2018-19 **% Completed:** 75 11-2115 now has many more demos and posters to help with student learning. (05/17/2019)
Cutting Edge Technology to Support Student Learning - We will continue to strive to give our students access to cutting edge technology to allow us to help increase student success. **Status:** Active **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 06/27/2017	**Report directly on Goal**	**Reporting Year:** 2021-22 **% Completed:** 25 Plan: Replace Aging Digital Projectors in the Planetarium Update: Permission to open a planetarium store to help with fundraising efforts for projector replacement has been approved. The box office will be providing the planetarium with a credit card reader and store stock will be supplied through donation funds already made to the planetarium and purchased by the Foundation. Some of the store stock has been ordered and the store is expected to open in the Fall. Plan: Create an Outdoor Whiteboard/Chalkboard, Tables with attached benches Update: Continues to be a highly desired purchase. In particular, with the return to campus after the pandemic, many faculty and students will appreciate outdoor educational spaces to engage in. Additionally, we are hoping to create more inviting spaces for our students to meet with their professors. Many students avoid office hours. This is an opportunity to study the effects an environment has on student anxiety to meet with their

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	Report directly on Goal	professors. Plan: Replacement computers for two laptop carts Update: 60-1515 and 11-2123 - replaced 8/2016 HP Elitebook 850 G1. Needs to be replaced ASAP. 60-1306 - Replaced 2/2019, HP Elitebook 850 G5. As of spring 2023, these will be 4 years. It will be nice to replace, but maybe we can wait for one more year. Plan: Zeiss star projector maintenance and computer replacement Update: Complete! The Zeiss projector was maintenanced in February by a Ziess technician from Germany. The starball misalignments were fixed as well as the planet projectors. The issue behind the lost connection between the Ziess, Bowen and Digistar projectors was solved and the failing main computer was also replaced with an updated new computer which should last a long time. Another maintenance visit is recommended to happen again in at least 2 years to keep the system running well. Plan: Purchase and install Dome Pro2-d controller and Boltwood cloud sensor, to allow for remote observing at the observatory Update: The Dome Pro2-d controller was installed in May 2022 and is still undergoing testing. The cloud sensor is on back order, but expected to arrive in early July. (07/27/2022)
	In Progress - Maintain chemical and physical sampling equipment for use in classes and for student research. The Department has purchased a set of Vernier geochemical sampling devices for use in oceanography and geology labs. We have also purchased sedimentary coring devices. This equipment requires	**Reporting Year:** 2018-19 **% Completed:** 25 Maintenance of Vernier equipment designated as a responsibility of lab technician. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 25 Lab technician has been instructed to regularly (at least once a month) check probes that require storage in

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	proper care and storage - for instance, some probes need to sit in a wet chemical solution during storage. Sediment cores need to be stored at proper temperature and humidity levels. ***Describe Plans & Activities Supported (Justification of Need):** It is important that the space, budget and employee hours (those of Mark Koestel, our technician, or student hourly assistants) be available for upkeep. ***Lead:** Tania Anders, geology faculty	solution, as well as to maintain other probes. Faculty are not monitoring if lab technician is completing this task regularly but are trusting that task is being done. Some Lab Quest 2 units are not functioning properly. Lab technician should follow up with Vernier. We currently have no storage space for sediment cores (requires refrigeration). (05/18/2018)
	In Progress - Replace Aging Digital Projectors in the Planetarium ***Describe Plans & Activities Supported (Justification of Need):** Replace Aging Digital Planetarium Projectors - The planetarium's digital projectors are heavily used and have not kept up well with current technology. The current 2K resolution limitation causes some pixelation, especially when looking at planet orbits, and the stars do not look like stars but instead fuzzy dots. Upgrading to a 4K projection system will significantly increase the resolution with crisper point like stars and smoother image renders. Installation would close the planetarium for one week and would need to be done by a professional. This is a significant and expensive upgrade. ***Lead:** Heather Jones **What would success look like and how would you measure it?:**	**Reporting Year:** 2021-22 **% Completed:** 0 Permission to open a planetarium store to help with fundraising efforts for projector replacement has been approved. The box office will be providing the planetarium with a credit card reader and store stock will be supplied through donation funds already made to the planetarium and purchased by the Foundation. Some of the store stock has been ordered and the store is expected to open in the Fall. (05/25/2022) **Reporting Year:** 2018-19 **% Completed:** 0 During our Digistar 6 upgrade (summer 2018) we replace the color wheels and did general maintenance on our digital projectors. This should extend the life of these aging projectors another 5 years. Projector replacement is still recommended for the future. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 25 The planetarium saves some of it's revenue each year in anticipation of this cost. As of May 23, 2018 we have saved up $100,000.00 to put towards this cost. (05/23/2018) **Reporting Year:** 2017-18 **% Completed:** 0 This will be the most expensive upgrade to the planetarium

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	Purchase and install new digital projector system for use in the planetarium **Type of Request:** INSTRUCTIONAL EQUIPMENT: Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 500000 **Total Funding Requested:** 500000	since it reopened. We are saving planetarium revenue to help with the cost. (05/18/2018)
	Request - Full Funding Requested - Augmented reality sandbox ***Describe Plans & Activities Supported (Justification of Need):** 1. In alignment with External Condition 1 (see relevant section in this PIE document), our department may face a higher need for offering some of our lectures online. An augmented reality (AR) sandbox offers the opportunity to produce high quality visual instructional material for our students. 2. Many of our students struggle with the transfer of 3 dimensional information into a 2 dimensional view. "Using an AR sandbox allows users to create topography models by shaping real sand, which is then augmented in real time by an elevation color map, topographic contour lines, and simulated water. The system teaches geographic, geologic, and hydrologic concepts	**Reporting Year:** 2018-19 **% Completed:** 0 Department needs to vote if it would like to pursue this purchase. (05/17/2019)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	such as how to read a topography map, the meaning of contour lines, watersheds, catchment areas, levees, etc." (UC Davis). A majority of our Earth Science courses include these concepts in our Student Learning Outcomes/Course Measurable Objectives, so an AR sandbox will help us teach these concepts that so many of our students struggle with.3. The AR sandbox can be used for community outreach events. ***Lead:** Tania Anders **What would success look like and how would you measure it?:** Purchase and install the augmented reality sandbox. Develop activities to be used with the equipment for use both in the classroom and for outreach events. **Planning Unit Priority:** Low **One-Time Funding Requested (if applicable):** 10000	
	Request - Full Funding Requested - Meteorite display for the planetarium. Request includes design of the display as well as purchase of the samples for the display. ***Describe Plans & Activities Supported (Justification of Need):** We would like to hire Dustin Dickens, a noted and well-qualified meteorite specialist to design and obtain samples for a meteorite display. This display will highlight the concepts behind planet differentiation and accretion theory	**Reporting Year:** 2018-19 **% Completed:** 25 Waiting for updated quote from the vendor. (05/17/2019)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	and show how this theory explains the different types of meteorites found. This display will also honor the late Ron Hartman, a meteorite expert, who served as Mt. SAC's Planetarium Director for over 40 years by featuring some of his original collection. ***Lead:** Heather Jones **What would success look like and how would you measure it?:** Use of the display for astronomy and geology classes to promote student learning, as well as interest from Mt. SAC visitors **Planning Unit Priority:** Low **One-Time Funding Requested (if applicable):** 15040	
	ARC-GIS Facility ***Describe Plans & Activities Supported (Justification of Need):** Update computing facilities to include ARC-GIS capabilities and other systems for use with our technical equipment. ***Lead:** Tania Anders, Dave Mrofka **Planning Unit Priority:** Low	**Reporting Year:** 2018-19 **% Completed:** 0 Department should consider reaching out to the geography faculty on our campus and plan a joint GIS lab space. This would be a great opportunity for collaboration. GIS will become more important for department with the Geotech program. (05/17/2019)
	Request - Full Funding Requested - Outdoor Whiteboard/Chalkboard, Tables with attached benches ***Describe Plans & Activities Supported (Justification of Need):** Students often hesitate to visit faculty in their offices. In an effort to reach our students in a setting in which they feel more comfortable, that is more inviting and informal, an outdoor study/teaching space along the wall of the steps to building 11 is proposed. This could be a pilot	**Reporting Year:** 2020-21 **% Completed:** 0 Continues to be a highly desired purchase. In particular, with the return to campus after the pandemic, many faculty and students will appreciate outdoor educational spaces to engage in. Additionally, we are hoping to create more inviting spaces for our students to meet with their professors. Many students avoid office hours. This is an opportunity to study the effects an environment has on student anxiety to meet with their professors. (06/07/2021)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	project for the campus. If successful more outdoor study/teaching spaces could follow. Approx. $25,000 includes outdoor metal furniture and chalkboard ***Lead:** Tania Anders **What would success look like and how would you measure it?:** An outdoor instructional space would be created for students and faculty to use. **Type of Request:** INSTRUCTIONAL EQUIPMENT: Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 25000 **Total Funding Requested:** 25000	
	Request - Full Funding Requested - Replacement computers for two laptop carts ***Describe Plans & Activities Supported (Justification of Need):** This will replace our oldest two sets of laptops that are predominately used in the Earth Science classrooms and labs. This is for a total of 40 computers, 20 for each laptop cart. The computers we currently use in these carts were purchased in 2015, so are now very slow and difficult to use in the classroom. ***Lead:** Julie Bray-Ali **What would success look like and how would you measure it?:** Make	**Reporting Year:** 2021-22 **% Completed:** 25 60-1515 and 11-2123 - replaced 8/2016 HP Elitebook 850 G1. Needs to be replaced ASAP. 60-1306 - Replaced 2/2019, HP Elitebook 850 G5. As of spring 2023, these will be 4 years. It will be nice to replace, but maybe we can wait for one more year. (05/25/2022) **Reporting Year:** 2020-21 **% Completed:** 75 The carts for 60-1306 and 11-2324 has been updated with 18 new laptops in each carts during 2019-2020. There is one more cart to be updated. Student laptops for the observatory (6 laptops) have been updated in 2020-2021. (06/07/2021)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	computers available for students to use in Earth Science classroom settings. **Type of Request:** INSTRUCTIONAL EQUIPMENT: Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 46120 **Total Funding Requested:** 46120	
	Request - Full Funding Requested - Zeiss star projector maintenance and computer replacement ***Describe Plans & Activities Supported (Justification of Need):** The Zeiss star projector is squeaking bady and the hard drives on the main computer are failing. A computer replacement and system maintenance is necessary. This maintenance was funded and scheduled for Spring 2020 but was cancelled due to COVID-19 concerns. As of Spring 2021, the Zeiss projector has now gotten to a bad enough condition that it is unusable. This is now an urgent need, and we would like to have this maintenance performed as soon as the technicians are able to travel from Germany to complete it. ***Lead:** Heather Jones **What would success look like and how would you measure it?:**	**Reporting Year:** 2021-22 **% Completed:** 100 Complete! The Zeiss projector was maintenanced in February by a Ziess technician from Germany. The starball misalignments were fixed as well as the planet projectors. The issue behind the lost connection between the Ziess, Bowen and Digistar projectors was solved and the failing main computer was also replaced with an updated new computer which should last a long time. Another maintenance visit is reccomended to happen again in at least 2 years to keep the system running well. (05/25/2022) **Reporting Year:** 2020-21 **% Completed:** 0 We got PIE funding in 2019 for Zeiss maintenance funding and to replace the 10 year old main computer. Unfortunatly the maintanence scheduled for summer 2020 had to be cancelled due to COVID. Requests for a renewal of this funding last year didn't go anywhere. We would again ask for a renewal of this funding. A Zeiss technician will be in the United States this coming September which will be the best time for such maintance as we will not need to pay for the technician to fly out from Germany. (06/07/2021)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	Complete maintenance and computer replacement. **Type of Request:** INSTRUCTIONAL EQUIPMENT: Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** Urgent **One-Time Funding Requested (if applicable):** 18380 **Total Funding Requested:** 18380	
	Request - Full Funding Requested - Dome Pro2-d controller and Boltwood cloud sensor installation ***Describe Plans & Activities Supported (Justification of Need):** This hardware/software upgrade will allow the observatory dome to track with the telescope and will enable the observatory to run remotely throughout the night on it's own. This will expand the capabilities of the observatory by enable us to use it in the AM hours. This will be especially useful for projects that require long continuous observing throughout the night like exoplanet transits. https://docs.google.com/document/d/1B1xa3auyp3The51WEr1I3V8RkD-G0bk99Amep5sWyM4/edit ***Lead:** Heather Jones **What would success look like and how would you measure it?:** Automated opening of the dome, focusing, finding and tracking targets	**Reporting Year:** 2021-22 **% Completed:** 75 The Dome Pro2-d controller was installed in May 2022 and is still undergoing testing. The cloud sensor is on back order, but expected to arrive in early July. (05/25/2022)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	from student created observing plans, and closing up and shutting down the telescope as well as early shutdown of the dome in case of inclemate weather. **Type of Request:** INSTRUCTIONAL EQUIPMENT: Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 18000 **Total Funding Requested:** 18000 **Request - Full Funding Requested -** Schmidt hammers ***Describe Plans & Activities Supported (Justification of Need):** Schmidt hammers are concrete testing hammers but also have broad geoscience field applications in measuring the surface hardness and penetration resistance of rocks. The department currently owns one Schmidt hammer that was purchased with Strong Workforce Program funding for the Geotechnician Certificate program, but we have been utilizing the Schmidt hammer recently for glacial moraine relative age dating projects in our field geology and historical geology classes. A second Schmidt hammer in the department would allow for larger sample sizes and more efficient data collection in the field, greater student exposure to the use of analytical equipment in	

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	the field, and the ability to run Geotech and geology field trips on the same day via Schmidt hammer sharing. ***Lead:** Becca Walker **What would success look like and how would you measure it?:** Purchase a second Schmidt hammer to be available for field work. **Type of Request:** INSTRUCTIONAL EQUIPMENT: Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 1100 **Total Funding Requested:** 1100 **Request - Full Funding Requested -** Replacement projectors for classrooms ***Describe Plans & Activities Supported (Justification of Need):** We have a number of classrooms with projectors that are not functioning as well as they should be. The projectors are relatively dim, and a number have a permanent Mt. SAC logo burnt in. ***Lead:** Julie Bray-Ali and Mike Hood **What would success look like and how would you measure it?:** Have a high-quality projector in every classroom, to ensure that all students can see the images projected on the screen. **Type of Request:** IT SUPPORT: Requests for projects related to the	

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	implementation, integration, application, delivery, and support of information and instructional technologies. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 50000 **Total Funding Requested:** 50000	
Cutting-edge science - Update and augment our Earth Science program to reflect cutting edge science and pedagogy. Special emphasis placed on oceanography and field studies. **Status:** Active **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 09/01/2016	**In Progress -** Instructors will have access to subject-specific professional development opportunities that will assist in designing student research and inquiry-based activities (particular focus on improving the oceanography laboratory materials and curriculum) ***Lead:** Faculty, Deans, **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 5000	**Reporting Year:** 2020-21 **% Completed:** 0 Hilary Lackey spent 2020-21 school year on a sabbatical, and at least part of this time was spent developing new activites for students, with a focus on paleontology, including marine invertebrates. (06/07/2021)
Community outreach - Continue to reach out to the community to encourage their participation in activities related to the Randall Planetarium, the Observatory, and other events on or off campus. **Status:** Active **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 09/01/2016	**In Progress -** Work with faculty at La Fetra Elementary School in Glendora, CA in implementing the school's Science Night activities and provide assistance in developing their earth science curriculum. ***Lead:** Craig Webb	**Reporting Year:** 2016-17 **% Completed:** 100 Craig Webb helped organize the Science Night at La Fetra elementary school in Glendora, CA. He continued to be the defacto "geologist" to assist faculty at the school with the earth science curriculum. This is an ongoing plan for future school years as well. (06/27/2017)
	In Progress - Park Benches in Front of Planetarium ***Describe Plans & Activities Supported (Justification of Need):** Local schools frequently visit the planetarium for field trips. Part of their field trip experience is a rocket building and launching activity. Rocket are launched next to the	**Reporting Year:** 2018-19 **% Completed:** 0 Met with Patty Encalade at the planetarium about this project on 3/19/2019. She will be soon generating a quote soon. (05/17/2019)
		Reporting Year: 2017-18 **% Completed:** 0 Email was sent to Mika Klein about improving the outdoor spaces around the planetarium as part of the master plan.

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	planetarium on the 26 East grass next to the the energy building. Frequently adults with the group look for places to sit while watching their students launch the rockets and end up sitting on the planetarium back stairs instead. These stairs are not comfortable, block an exit and don't have enough room for everyone who wants a seat. Adding park benches nearby would relieve this problem and provide additional seating for Mt. SAC students. The best location for these park benches would be on the north side of the large tree in front of the planetarium's main entrance parallel to the sidewalk (not on the grass). ***Lead:** Heather Jones + Facilities **Planning Unit Priority:** Medium	(05/18/2018)
	In Progress - Planetarium Expansion ***Describe Plans & Activities Supported (Justification of Need):** The planetarium is frequently visited by local schools for field trips. It is not unusual to have 150 students here at a time. During that time space is very limited in the planetarium lobby, as students take up all of the available floorspace. There is literally no room expand our programs or displays. Additional display space and project areas would ease the congestion, and allow us to offer more programs to the hungry public as well as Mt. SAC students. Additionally the planetarium is in desperate need of	**Reporting Year:** 2018-19 **% Completed:** 0 No progress (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 0 Email was sent to Matthew Judd requesting expansions to the planetarium for the master plan. As of 4/9/2018 none of these requests made it into the final draft of the master plan (05/18/2018)

Unit Goals	*Resources Needed*	*1. Where We Make an Impact: Closing the Loop on Goals and Resources*	
	storage space and expanded restrooms to accommodate our growing attendance. The planetarium can be added to by expanding into the hillside on the southeast side of the building ***Lead:** Heather Jones + Facilities **Planning Unit Priority:** Medium		
Student access - Make efforts to increase student access to faculty members and facilities. We encourage use of the Earth Science Resource Room, Redinger Exploration Center, Mt. SAC Randall Planetarium and the observatory, in addition to the classroom and the faculty offices to ensure student access. **Status:** Active **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 09/01/2016	**Report directly on Goal**	**Reporting Year:** 2021-22 **% Completed:** 0 Plan: Staffing, supplies, and repairs for the Exploration Center Update: Some updates are being made at the Exploration center, but still need funds for Staff, regular supply budget and repairs. (07/27/2022)	
	In Progress - Department retreat for curriculum and SLO planning. We need to put the information gained from SLO and GEO data to use in the classroom in a meaningful way. We have lagged behind on this. ***Lead:** Faculty **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 1000	**Reporting Year:** 2018-19 **% Completed:** 75 The department does now have a central repository for SLO data for all of our classes. Faculty is trying to enter data there every time it's collected. We have decided as a department to collect SLO data the semester before any course is resubmitted to curriculum. (05/17/2019)	
		Reporting Year: 2016-17 **% Completed:** 50 Our department has completed a full SLO cycle, icluding use of results, for all of our courses. However, there was no department retreat to work on outcomes or traning sessions were planned or funded. , (06/27/2017)	**:** SLO data collection were successfully done. Our department conduct SLO data collecting in the same year as when 4 year review for the courses are due. As of now, vast majority of our courses are due at the same time. this create huge amount of work of completing SLOs and curriculum review once every 4 years. Our department will look into reviewing the curriculum in 2 years for about half of our courses, that way not all courses comes up for the 4 year review in a same year.

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources

(06/29/2017)

In Progress - Staffing, supplies, and repairs for the Exploration Center.
***Describe Plans & Activities Supported (Justification of Need):** Exploration center upkeep: Exploration center updates and staffing.

Exploration center first opened in 2014. It is a wonderful space, but we have not had adequate staff or budget to properly update and introduce new exhibit. Requesting $64,400 for 1/2 time museum tech and $3,000 per year for supplies and repairs.

During the 2019-2020 academic year, we will be working on : looking into reorganizing, rotating exhibits, new VR exhibit and more. Create training materials for student employees. Develop more tours and activities.
***Lead:** Julie Bray-Ali
What would success look like and how would you measure it?: Exploration center will have regular scheduled open hours with knowledgeable staff members to help all guests. Exhibits will be updated to make better use of technology and to better explain current scientific ideas.
Type of Request: STAFFING: Requests for permanent employee positions or temporary/hourly employees.
Planning Unit Priority: High
One-Time Funding Requested (if applicable): 5000

Reporting Year: 2020-21
% Completed: 0
Some updates are being made at the Exploration center, but still need funds for Staff, regular supply budget and repairs. (06/07/2021)

Reporting Year: 2018-19
% Completed: 0
Staff - We are continuing to struggle to find good students to keep the exploration center open as the only option we have for student workers is from the work-study / SEED program, and those students are not necessarily science majors.

Supplies and repairs - There is no designated budget for the exploration center. We will continue to ask for designated funding to request student worker, 50% museum tech position and supply and repair budget. . (05/17/2019)

Reporting Year: 2017-18
% Completed: 25
Julie Bray-Ali has met with Matt Judd and Mark Cooper to discuss the direction of the Exploration Center and Meek. We all agree we need substantial student worker and a museum tech, as well as regular supply and repair budget. Matt has brought this up to the instruction office and we hope to see more progress on this topic in early summer 2018. Larry Redinger and I have met the representative from ViewSonic at the exploration center and we are in discussion on modernizing the Exploration Center with digital wallpaper (instead of having student research posters, we will have rotating digital files of student posters), as well as an information kiosk. We will continue to work on this project during summer 2018 and during the academic year of 2018 & 2019 (05/18/2018)

Reporting Year: 2016-17
% Completed: 50
Bard Moormon from Omni Globe,ARC Science Simulations has send us software update and additional content (i.e. updated image of Pluto). Software update is not a

: Omni globe has been an important part of the Exploration center exhibit. Guests to the exploration center enjoy exploring earth and other solar system

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources	
	On-Going Funding Requested (if applicable): 69400 **Total Funding Requested:** 74400	requirement, but as it has been 4 years since the unit was purchased, we will be working with IT department to install new software and contet during summer 2017. (06/14/2017)	bodies on their own. Our geology and astronomy classes take advantage of this resource as well. With new update and additional content, we can expand out use of the Onmi Globe. (06/14/2017)
	In Progress - An increase in student worker budget. We have been able to take advantage of work study students to keep resource room and exploration center open. It would be ideal for the exploration center to have Geology or astronomy student to work there as a museum guide. We can not find students with the qualification from work study students. ***Describe Plans & Activities Supported (Justification of Need):** Increase in student worker budget. We requested an increase in student employee budget in the 2017-18 school year, but it was not granted. Our student worker budget has not changed since since the minimum wage was only $8 / hour, even though the minimum wage has now increased to $11 / hour. Plus, the minimum wage is scheduled to increase to $15 / hour in 2025. We would like to request increase in student employee budget to at least match the increase in COLA / minimum wage. For the $11/hour, we need our budget to be increased by 37.5% to return to the same number of student worker hours that we used to have. In January 2019, we also request an additional increase by 8.3%, which results in a	**Reporting Year:** 2020-21 **% Completed:** 0 We will re-evaluate this at the end of Fall 2021. If needed, we will request adjustmant to this category for 22-23 academic year. (06/07/2021) **Reporting Year:** 2018-19 **% Completed:** 0 We did not receive additional funding in 2018-2019 academic year. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 0 Increase in student employee budget was discussed. We were not granted budget increase this year. Our student worker budget has not changed since when the minimum wage was $8 / hour. Minimum wage has increased since and now is at $11 / hour. Minimum wage is scheduled to increase to $15 / hour in 2025. We would like to request increase in student employee budget at least to match the increase in COLA / minimum wage. We will continue to request increase in student worker budget. (05/18/2018)	

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources	
	total increase of 50% to current budget. https://www.dir.ca.gov/dlse/faq_mi ***Lead:** Julie Bray-Ali and Mike Hood **What would success look like and how would you measure it?:** Much of our student worker budget is used for lab assistants. Having greater numbers of lab assistants is great for students enrolled in the lab classes as well as for those lab assistants to gain experience in learning more and teaching the subject. **Planning Unit Priority:** High		
	In Progress - Professional Development Opportunities ***Describe Plans & Activities Supported (Justification of Need):** Instructors will have access to subject-specific professional development opportunities that will assist in designing student research and inquiry-based activities (particular focus on improving the oceanography laboratory materials and curriculum)	**Reporting Year:** 2016-17 **% Completed:** 50 Several faculty members(Mark Boryta, Tania Anders, Julie Bray-Ali) and Geol99 student (Seiji Ueda) have attended 4-hour workshops hosted by Vernier at locations around the southland, helping make us more comfortable with the equipment. (06/27/2017)	**:** Attending the workshop was informative. We also have learned that it would be beneficial to have Logger pro software rather than the free software to run the equipment . Additional software will allow our studnets to conduct complex analysis of data. (06/29/2017)
	In Progress - Review classroom setup and layout to create optimal learning space. Some of our classroom does not have appropriate classroom set up conducive for effective collaborative learning - large maps, charts, posters, models, samples, demos and appropriate furniture. ***Describe Plans & Activities Supported (Justification of Need):** Funds to buy additional classroom models, replacement furnitures, posters / charts / maps, globes,		

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	demos and more. Exact request value will be determined soon. (project quote has been submitted for the furniture component.) **Planning Unit Priority:** High	
	Request - Full Funding Requested - Exploration center computer displays and electronic kiosk stations. ***Describe Plans & Activities Supported (Justification of Need):** We will install computer displays and kiosks that will allow us to do a better job of teaching visitors about science and technology. ***Lead:** Julie Bray-Ali and Mike Hood **What would success look like and how would you measure it?:** Our exploration center will be updated and equipped with cutting edge technology to help increase the interest in our science departments. **Type of Request:** INSTRUCTIONAL SUPPORT PROGRAM FUNDING (INSTRUCTIONAL EQUIPMENT): Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** Medium **One-Time Funding Requested (if applicable):** 15000	**Reporting Year:** 2020-21 **% Completed:** 0 This item is on hold until we fully return to campus. (06/07/2021)
	Request - Full Funding Requested - Supplies, exhibit furniture and carts to allow for rotating exhibits at the Exploration Center. Secure storage for exhibit items that are not on display.	**Reporting Year:** 2020-21 **% Completed:** 0 This item is on hold until we fully return to campus. (06/07/2021)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	***Describe Plans & Activities Supported (Justification of Need):** The building 61 Cube includes the Exploration Center for physical sciences and the Meek Museum for biological science. Currently, the physical science side is predominantly made up of geology and astronomy displays. We will design and build rotating exhibits for the central area of the Exploration Center to also feature chemistry, physics and engineering. Mike and Julie will work with the other departments to design and build the exhibits, which will be changed out every semester. We will also work with Mark Cooper to bring in exhibits that display the connections between biological sciences and physical sciences. For example, Mark Cooper has recently added some dinosaur displays, which would be a perfect bridge between biological science and geology. in the future, we can have exhibits bridging the gaps between Oceanography and Marine biology, or Engineering and anatomy.. ***Lead:** Julie Bray-Ali and Mike Hood. Working with Mark Cooper from Biology and Larry Redinger. **Planning Unit Priority:** High	
	Animation/Planetarium Partnership ***Describe Plans & Activities Supported (Justification of Need):** The animation and planetarium program would like to develop a relationship where students get valuable work experience and	**Reporting Year:** 2018-19 **% Completed:** 50 In Fall 2018 we initiated a planetarium/animation project to convert a classic planetarium show that had used slides, to a digital animated format. This project is still ongoing and expected to be completed in Spring 2019. We hope to do many more project in the future with animation students.

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	opportunity to create visuals campus produced planetarium shows. ***Lead:** Heather Jones, Animation Department **Planning Unit Priority:** Medium	(05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 25 There was a meeting of Art and Natural Science Deans and professors on March 12, 2018. Everyone was supportive of the idea. More follow up work needs to be done to solidify these relationships and implement these ideas. Heather Jones will be attending the Astroviz Conference in Pasadena in June to learn more about innovations in astronomy visualizations and how they can be transferred to the planetarium. (05/23/2018)
	NEW: Develop training material for the resource room and exploration center student workers. ***Describe Plans & Activities Supported (Justification of Need):** Develop training course for our student employees to be familiar with the resource room (11-2310) and the exploration center. Training will include brief introductions on solar system, use of astronomical tools, scale of the universe, use of geoscience tools, rocks and minerals identifications, and how to use textbook. Platform of the instruction will be in person, and online - canvas. ***Lead:** whole department - Julie Bray-Ali will serve as a coordinator **Type of Request:** PROFESSIONAL & ORGANIZATION DEVELOPMENT (POD): Requests that provide professional learning opportunities for Mt. SAC employees. **Planning Unit Priority:** High	**Reporting Year:** 2020-21 **% Completed:** 0 This item is on hold until we fully return to campus. (06/07/2021)
	Request - Full Funding Requested - Replace carpeting in presentation area of the Exploration Center	

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	***Describe Plans & Activities Supported (Justification of Need):** The carpet in the presentation area of the Exploration Center is worn and needs to be replaced. This is an area that is used for instruction for classes that come to use the exhibits available in the center. ***Lead:** Julie Bray-Ali, Mark Cooper **What would success look like and how would you measure it?:** Have new carpet installed **Type of Request:** OTHER OPERATING EXPENSES AND SERVICES: Requests for contracted, legal/ audit, personal/ consultant, rent/ leases, repairs/ maintenance, and other misc. services. May also include request for travel and conference that does not require the assistance of POD. **Planning Unit Priority:** High **Total Funding Requested:** 10000	
Department Promotion - Design and implement opportunities to publicize our department's offerings, including outreach ("Debbie Day") and attending and presenting at scientific meetings and workshops (NAGT, GSA, AGU, IAU, SAGE) **Status:** Active **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 09/01/2016	**In Progress -** Improve Department Website - We will work with IT specialists to improve the department website to highlight opportunities for students and showcase faculty, staff and student accomplishments. ***Describe Plans & Activities Supported (Justification of Need):** Website maintenance ***Lead:** Dave Mrofka **What would success look like and how would you measure it?:** Have a more usable website to highlight student opportunities and accomplishments. **Type of Request:** IT SUPPORT:	**Reporting Year:** 2018-19 **% Completed:** 25 The changeover to the new Web design undid much of the work Hilary did on adding photos and new pages, including an updated directory, to the website. Hillary will require additional training in OmiUpdate in order to proceed. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 0 Little progress has been made. Now that the college website overhaul is complete and the images and files don't keep getting removed with each iteration, we can make improvements to our website. (05/18/2018) **Reporting Year:** 2016-17 **% Completed:** 50 Hilary Lackey has been working with IT to continue to

Unit Goals	*Resources Needed*	*1. Where We Make an Impact: Closing the Loop on Goals and Resources*
	Requests for projects related to the implementation, integration, application, delivery, and support of information and instructional technologies. **Planning Unit Priority:** High **Total Funding Requested:** 0	improve our website. We will continue to improve this, to highlight course offerings and especially our diverse field trip programs. (06/27/2017)
Geoscience Roadmap - Develop a geoscience course roadmap with courses necessary for transfer in the geosciences. To be printed on brochure for the ESA department **Status:** Archive **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21 **Date Goal Entered (Optional):** 09/01/2016		
Faculty and Staff Hiring - Hire more adjunct and full-time faculty members in each area. **Status:** Active **Goal Year(s):** 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 05/09/2017	**Report directly on Goal**	**Reporting Year:** 2021-22 **% Completed:** 25 Plan: Hire full-time astronomy professor Update: We were approved to hire a new full-time astronomy in the 2021-22 school year. As of May 2022, we are finishing up the interview process, and expect to have a new full-time astronomy faculty member starting with us in Fall 2022. Plan: Hire more adjunct faculty members Update: This item is currently on hold. Our program (along with the rest of the college) is experiencing reduction in enrollment, so we will resume this once we start to increase enrollments. Plan: Reclassification funding for Jessica Draper from Lab Tech I to Lab Tech II Update: Progress!! There has been some recent movement on this item in May 2022. HR has offered to cover Jessica's

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	Report directly on Goal	back pay with the presidents support. Heather is hopeful that this will be finalized very soon. (07/27/2022)
	In Progress - Hire full time astronomy professor ***Describe Plans & Activities Supported (Justification of Need):** During 2016-2017, only 57% of the classes were taught by full time faculty members as part of their regular load. We would like to increase astronomy sections, especially now that we will have Astr 11 and are looking into creating an Astronomy AA degree. Also, the number of astronomy sections we can offer is currently limited by the number of instructors we have to teach the classes. We have tried to hire more part-time instructors, but finding quality adjunct instructors has been very difficult. As it is nearly impossible to find new adjunct (we conducted 6 adjunct interviews in last 2 years and hired one), we need to hire a full time faculty member to be able to grow our department. ***Lead:** Mike Hood and Julie Bray-Ali **What would success look like and how would you measure it?:** Hire a new full time astronomy faculty member to better serve our students. **Planning Unit Priority:** High **On-Going Funding Requested (if applicable):** 100000	**Reporting Year:** 2021-22 **% Completed:** 75 We were approved to hire a new full-time astronomy in the 2021-22 school year. As of May 2022, we are finishing up the interview process, and expect to have a new full-time astronomy faculty member starting with us in Fall 2022. (05/25/2022) **Reporting Year:** 2020-21 **% Completed:** 0 We wish we had an update on this item. We will continue to request a much-needed full time astronomer. (06/07/2021) **Reporting Year:** 2018-19 **% Completed:** 0 This position was not funded during 2018-2019 academic year. The college initially committed to hiring 40 faculty, and this position was ranked 43. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 0 We applied to hire a new astronomy position, but were not close to being highly ranked enough to get to hire someone for this position. (04/05/2018)
	In Progress - Hire one or more geoscience faculty member ***Describe Plans & Activities Supported (Justification of Need):**	**Reporting Year:** 2018-19 **% Completed:** 0 This position was not funded during 2018-2019 academic year. The college initially committed to hiring 40 faculty, and this position was ranked 48. (05/17/2019)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	During 2016-2017, only 41% of the classes were taught by full time faculty members as part of their load. When there are too many sections taught by adjunct, it is possible for the quality of instructions to start to slip. We need to hire one or two full time faculty members to accommodate for the recent increase in number of sections offered in GeoScience. This is especially important as we are in process of developing geotech program. ***Lead:** Mike Hood and Julie Bray-Ali **What would success look like and how would you measure it?:** Hire full time faculty member to better serve our geoscience students. This is especially important as we are in process of developing geotech program. **Type of Request:** STAFFING: Requests for permanent employee positions or temporary/hourly employees. **Planning Unit Priority:** High **On-Going Funding Requested (if applicable):** 100000 **Total Funding Requested:** 100000	**Reporting Year:** 2017-18 **% Completed:** 0 We were not ranked high enough in our division or the college as a whole in order to hire this position. We will continue to work toward this goal, especially as we move closer to offering a geotech degree. (04/05/2018)
	In Progress - Hire more adjunct faculty members. ***Describe Plans & Activities Supported (Justification of Need):** We have been advertising our adjunct pool though our HR department, but we are not receiving many applications. We need to look into different publications to advertise and	**Reporting Year:** 2021-22 **% Completed:** 0 This item is currently on hold. Our program (along with the rest of the college) is experiencing reduction in enrollment, so we will resume this once we start to increase enrollments. (05/25/2022)
		Reporting Year: 2020-21 **% Completed:** 100 This year we hired Christina Manzano-King and Peter Halverson in Astronomy, Clint Schmidt in Meteorology, and Amanda Ketting-Olivier in Geology. (06/07/2021)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	perhaps attend job fairs to recruit. ***Lead:** Mike Hood and Julie Bray-Ali **What would success look like and how would you measure it?:** Hire more adjunct professors in geoscience and astronomy. **Planning Unit Priority:** High	**Reporting Year:** 2018-19 **% Completed:** 50 We hired 3 new geoscience adjunct faculty members. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 50 We continue to work to add more adjunct faculty members to our department. We hired three new part-time faculty members to the Earth Science side of the department; one started in Summer 2017, one started in Fall 2017, and one started in Winter 2018. Despite our repeated attempts to add more faculty members on the astronomy side, we have been unable to find any new people to hire to our department. Julie Bray-Ali and Mike Hood attended a community college job fair in the winter term, but did not find any new astronomy faculty members through this job fair either. Starting Fall 2018, one new adjunct faculty in astronomy will teach one section per semester. We are able to confirm one of our adjunct faculty on extended leave to return starting Fall 2018. We will continue to work toward adding new adjunct faculty members to both the Earth Science and Astronomy sides of the department. (04/05/2018)
	Request - Full Funding Requested - Hire tutors - ***Describe Plans & Activities Supported (Justification of Need):** We will recruit excellent students to work as tutors in our program. It would be great to have tutors at earth science resource room on regular schedule. ***Lead:** Julie Bray-Ali and all other faculty **What would success look like and**	**Reporting Year:** 2020-21 **% Completed:** 100 Yes. Jennifer Castaneda for Astronomy and Sarah Bisgaard for Geology (06/07/2021) **Reporting Year:** 2018-19 **% Completed:** 50 We have one regular astronomy tutor and one regular geoscience tutor available at the resource room. (05/17/2019)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	how would you measure it?: Hire tutors to have wide availability of tutoring scheduled in various subject matter. This will give our students more chances to learn the material in class, improving student success. **Planning Unit Priority:** High	
	Request - Full Funding Requested - Full time lab tech in geology ***Describe Plans & Activities Supported (Justification of Need):** Hire a geology science lab tech. With implementation of more demonstrations, activities, technology and field trips, it is extremely difficult to have all needed tasks done by a 50% tech in the geology area. We need either an additional geology tech position to fill these roles. The ESA department would benefit from an additional full-time tech in a variety of important areas. The current geology tech is unable to fulfill many of the duties the department asks of him, in part because of time limitations. We would like to focus the current tech's attention on the Oceanography part of our department and on overseeing operation of the Earth Science Resource Room, as well as continuing to support the department clerically (POs, quotes, etc.) in that location. This would allow the department to use student workers to work in the Discovery Center, which we hope to continue to use more for Mt. SAC students	**Reporting Year:** 2018-19 **% Completed:** 0 This position was not funded during 2018-2019 academic year. (05/17/2019)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	and the general public. Our new tech would have three main priorities: -Support the geology lab and lecture rooms. This mostly involves maintaining extensive collections of student and classroom samples, overseeing resupply of experiment supplies, setting up classroom experiments and general organization. -Support the extensive investment the department has in proper and safe running of field trips. The tech will make sure that items students use regularly are clean and safe to use, that the field supplies are inventoried and ready for future trips, and that our collection of filed equipment is maintained. -Support the operation of the Discovery Center. Organizing and coming up with new displays and activities has fallen on different people in the department without a lead person to go to if something needs to be fixed or repaired. The tech would train student workers, come up with ideas for displays, help run some activities and generally maintain the samples and displays in that area. ***Lead:** Mike Hood and Julie Bray-Ali **What would success look like and how would you measure it?:** Hire a new geoscience lab tech. **Planning Unit Priority:** High	

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	On-Going Funding Requested (if applicable): 80000 **Request - Full Funding Requested -** Part-time or full-time planetarium show presenter ***Describe Plans & Activities Supported (Justification of Need):** Part time planetarium show presenter- Community outreach is a large part of the planetarium's mission. We offer field trip experiences for local schools, scout groups and families during the week and on the weekends. The planetarium has grown in popularity enough that we regularly sell out our available time slots during the week. To keep up with demand we have doubled the planetarium student staff to help with lobby activities, however our show presenting staff is still only two people: Heather Jones and Jessica Draper. Increasingly, Heather and Jessica's time has become dominated by the day-to-day needs of running these outreach activities instead of other projects. Unfortunately it has gotten to the point where they cannot take on new projects or expand on any programs at the planetarium or telescope observatory. Additional staff is desperately needed to avoid cutbacks in the outreach program. ***Lead:** Heather Jones **What would success look like and how would you measure it?:** Hire a part-time presenter for the planetarium. **Type of Request:** STAFFING: Requests	**Reporting Year:** 2018-19 **% Completed:** 25 We have hired a part time student worker with a lot of experience in astronomy and a strong interest in teaching to help out. After an entire semester he is now fully trained, but is transferring at the end of the Spring 2019 semester. Because of their impermanence, training student workers is not a good long term solution for our staffing problems. We need a short-term hourly worker who will stay with the planetarium for years instead. (05/17/2019) **Reporting Year:** 2017-18 **% Completed:** 0 We are researching a few options to find funding for this position. In addition to the investment the college could make toward fullfilling this need, the money for this postion could come in part from donations from the Randalls, work experience funding, grant funding, or other sources. We are hopeful for a solution. (05/23/2018)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	for permanent employee positions or temporary/hourly employees. **Planning Unit Priority:** Medium **On-Going Funding Requested (if applicable):** 50000 **Total Funding Requested:** 50000	
	Request - Full Funding Requested - Reclassification funding for Jessica Draper from Lab Tech I to Lab Tech II ***Describe Plans & Activities Supported (Justification of Need):** Jessica Draper has been working in the ESA department for just over 8 years. She helps Astronomy by maintaining lab rooms, purchasing needed supplies and equipment, operating equipment, and outreach activities at the planetarium. The Lab Tech I position states that she is assisting other higher-level employees. However, for the past several years, she has been the one solely responsible for many of these activities. While Jessica has a supervisor, that supervisor does not need to be present for Jessica to perform her duties of purchases, planetarium shows, and telescope lab nights. She is no longer "assisting" the supervisor. This request is for funding to reclassify Jessica to a Lab Tech II position, which does not require that a supervisor be present for Jessica's activities. According to the 2020 salary schedule for CSEA 262, the different between Lab Tech 1 step 6 and Lab Tech II step 6 is $4933.08 per year.	**Reporting Year:** 2021-22 **% Completed:** 50 Progress!! There has been some recent movement on this item in May 2022. HR has offered to cover Jessica's back pay with the presidents support. Heather is hopeful that this will be finalized very soon. (05/25/2022)

Unit Goals	*Resources Needed*	*1. Where We Make an Impact: Closing the Loop on Goals and Resources*
	But based on email from Christine Lam from fiscal, the different is $6601 per year because of benefits. ***Lead:** Heather Jones **What would success look like and how would you measure it?:** Reclassification for Jessica Draper funded and completed **Type of Request:** STAFFING: Requests for permanent employee positions or temporary/hourly employees. **Planning Unit Priority:** Urgent **On-Going Funding Requested (if applicable):** 9000 **Total Funding Requested:** 9000	
Develop Landers Site - Develop the site in Landers, CA to allow Earth Science and Astronomy students to make use this valuable resource. This site is in a remote, dark location, making it an ideal place for our students in courses and our students doing research. **Status:** Active **Goal Year(s):** 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 06/30/2017	**Report directly on Goal**	**Reporting Year:** 2017-18 **% Completed:** 0 Outline of items needed and estimate cost was sent to Matthew Judd. Faculty and staff visited the site on 5/12/18 to assess the physical conditions of the property (weather conditions, local light pollution etc...). We found that this site would be ideal for astronomical observing, and look forward to being able to use this site in the future. Contacts have been made with the Riverside Astronomical Society who have extensive experience building observatories in Landers, CA which is where their main observing site is located. (05/18/2018)
	In Progress - Develop basic infrastructure for Landers site. ***Describe Plans & Activities Supported (Justification of Need):** Internet access, including wifi, firewall, USB extender, etc. - $20,000 Facilities construction - Cement, shelter walls, furniture, etc. - $30,000 ***Lead:** Heather Jones and Facilities **Type of Request:** INSTRUCTIONAL	

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	SUPPORT PROGRAM FUNDING (INSTRUCTIONAL EQUIPMENT): Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** Low **One-Time Funding Requested (if applicable):** 50000 **In Progress -** Purchase, build, and install telescope infrastructure. ***Describe Plans & Activities Supported (Justification of Need):** Telescope Mount - $21,000 Telescope Pier - $1,000 Clamshell Dome - $30,000 ***Lead:** Heather Jones, Facilities **Type of Request:** INSTRUCTIONAL SUPPORT PROGRAM FUNDING (INSTRUCTIONAL EQUIPMENT): Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** Low **One-Time Funding Requested (if applicable):** 52000	
	In Progress - Purchase Telescope for Landers remote observing site. ***Describe Plans & Activities Supported (Justification of Need):** Plane wave 20" telescope - $50,000 ***Lead:** Heather Jones **Type of Request:** INSTRUCTIONAL SUPPORT PROGRAM FUNDING (INSTRUCTIONAL EQUIPMENT):	

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** Low **One-Time Funding Requested (if applicable):** 50000 **In Progress -** Purchase CCD camera, filter wheel, and software necessary to make remote astronomical observations at the Landers site. ***Describe Plans & Activities Supported (Justification of Need):** Finger Lakes CCD - $14,000 filter wheel - $2,000 MaxIm DL - $675 SkyX Pro w/ Camera add on - $675 ACP with service Agreement - $2,800 Starlight Xpress Lodestar X2 - $700 ***Lead:** Heather Jones **Type of Request:** INSTRUCTIONAL SUPPORT PROGRAM FUNDING (INSTRUCTIONAL EQUIPMENT): Equipment, library material, or technology for classroom instruction, student instruction or demonstration, or in preparation of learning materials in an instructional program, equal or over $500. **Planning Unit Priority:** Low **One-Time Funding Requested (if applicable):** 20850	
	In Progress - Purchase and install all-sky camera and weather station to allow for remote astronomical observing at the Landers site. ***Describe Plans & Activities Supported (Justification of Need):**	

Unit Goals	*Resources Needed*	*1. Where We Make an Impact: Closing the Loop on Goals and Resources*
	All Sky Camera and weather Station - $2750 from SBIG ***Lead:** Heather Jones **One-Time Funding Requested (if applicable):** 2750	
Increased Collaboration - Increase collaboration with other departments across campus to help with overall student success rates **Status:** Active **Goal Year(s):** 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 **Date Goal Entered (Optional):** 05/21/2018	**Report directly on Goal**	**Reporting Year:** 2021-22 **% Completed:** 0 Plan: Oceanography Study Abroad Update: On hold due to COVID. Will be revisited in future years Plan: Departmental Retreat funding Update: Tania has volunteered to take over as the lead person for this request. (07/27/2022)
	Learning Community ***Describe Plans & Activities Supported (Justification of Need):** Create a learning community, which would include Oceanography, a first year seminar and one to two other courses (such as English or Political Sciences) **What would success look like and how would you measure it?:** Higher student success rates, measured by percentage of students passing courses. **Planning Unit Priority:** High	
	Oceanography Study Abroad ***Describe Plans & Activities Supported (Justification of Need):** Involve Ocean Sciences in a Study Abroad Program ***Lead:** Tania Anders **What would success look like and how would you measure it?:** Increased visibility of our department across campus; increased enrollment	**Reporting Year:** 2020-21 **% Completed:** 0 On hold due to COVID. Will be revisited (06/07/2021) **Reporting Year:** 2018-19 **% Completed:** 50 One department member is currently participating in a Study abroad program and offering one oceanography section. This program is run through Citrus College. (05/17/2019)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	in our courses. **Planning Unit Priority:** Medium **Request - Full Funding Requested -** Departmental Retreat funding ***Describe Plans & Activities Supported (Justification of Need):** The department is seeking funds to support a retreat for its faculty (both full and parttime) with the following goals: 1) Reconnect after long campus closure due to COVID. Newer department members don't know everyone in department yet and with more worktime from home while COVID is still impacting our campus faculty are overlapping at work less to plan and discuss department related issues. 2) Department training on how to use data to make informed decisions. 3) Develop strategic joint plan to address enrollment numbers in department. 4) Share-outs (e.g. sabbatical, Leaf courses, new teaching material developed etc.) 5) Subgroup meetings to develop joint assessment strategies ***Lead:** Tania Anders **What would success look like and how would you measure it?:** Higher student success rates, measured by percentage of students passing courses. **Type of Request:** PROFESSIONAL & ORGANIZATION DEVELOPMENT (POD): Requests that provide	**Reporting Year:** 2021-22 **% Completed:** 0 Tania has volunteered to take over as the lead person for this request. (05/25/2022) **Reporting Year:** 2020-21 **% Completed:** 0 Department should discuss and consider applying for Guided Pathways funds. (06/07/2021)

Unit Goals	Resources Needed	1. Where We Make an Impact: Closing the Loop on Goals and Resources
	professional learning opportunities for Mt. SAC employees. **Planning Unit Priority:** High **One-Time Funding Requested (if applicable):** 4000 **Total Funding Requested:** 4000	
CTE Geotechnical Careers - Develop a CTE for students wishing to pursue careers in geotechnical, engineering geology, environmental geology fields after two years of college work **Status:** Archive **Goal Year(s):** 2016-17 **Date Goal Entered (Optional):** 09/01/2016 **Date Goal Archived/Inactivated (Optional):** 06/27/2017		
Geology Bachelor's degree - Begin review of plausibility for Bachelor's degree program in Geological Sciences **Status:** Archive **Goal Year(s):** 2016-17 **Date Goal Entered (Optional):** 09/01/2016	**In Progress -** Apply to one-time state pilot program to offer a B.A./B.S. degree related to Geology **What would success look like and how would you measure it?:** BA / BS degree in Geology to be established.	**Reporting Year:** 2016-17 **% Completed:** 100 MtSAC committee considered but did not put our proposal forward, partly due to staffing issues and partly due to our not having certain core courses ready to go. Perhaps looking into Geotech certificate or AA program would be more beneficial for studnets and achievable. (06/25/2017)
Professional Development - We will work to provide professional development opportunities for full-time faculty, part-time faculty, and staff to help us all improve our ability to help our department be successful. **Status:** Active **Goal Year(s):** 2021-22, 2022-23		