

1. Assessment Plan - Four Column



PIE - Technology & Health: Aeronautics Unit

Narrative Reporting Year

2018-19

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External Conditions, Trends, or Impacts: 1. FAA Collegiate Training Initiative (AT-CTI Program, FAA air traffic control training)

Mt. SAC's FAA CTI Partnership for air traffic control has continued to be a valuable partnership. The FAA partnerships extend to 30 colleges and universities nationwide with only two in California - Mt. SAC and Sacramento. The FAA Controller Workforce Plan states that the FAA will hire approximately 750 to 950 controllers per year for the next 10 years. This fact benefits our students and it benefits Mt. SAC because of the strong hiring for a long period of time. This fact supports the department's request for an additional full-time faculty, adjunct faculty, and purchase of simulation equipment.

https://www.faa.gov/air_traffic/publications/controller_staffing/

2. Pilot Shortage Reaching Crisis

The Wall Street Journal said recently that "Airlines are boosting salaries... for what is projected to be one of the biggest-ever pilot shortfalls. The dearth of pilots has long been forecast, but it is only now that airlines are being forced to act. Boeing Co. estimates that airlines around the world will need to recruit 635,000 pilots over the next two decades to fly the record number of planes being built".

<https://www.wsj.com/articles/pilot-shortage-spurs-hiring-spree-1533720602>

All of this is good news for Mt. SAC students and for the Department. The jobs are there for our graduates and wages are going up because of the shortage.

The department is experiencing growth in our Commercial Flight program. All of this news supports the department's request for a flight training aircraft, flight simulation, and adjunct faculty.

3. Unmanned Aircraft Systems - UAS, Drones

The FAA said in the FAA Aerospace Forecast that "Given the trend observed in the registrations, information from the survey, review of available industry forecasts, and internal research, together with market/industry research, we project that the non-model fleet by 2023 will likely (i.e., base scenario) be three times larger than the current number of non-model aircraft. The sector will be much larger than what we understood as recently as last year.

https://www.faa.gov/data_research/aviation/aerospace_forecasts/

Mt. SAC will need to take on more financial responsibility for the UAS program once Strong Workforce funding ends - Full-time faculty, full-time support staff, equipment, and replacement supplies and equipment.

Internal Conditions, Trends, or Impacts : 1. Portable Modular Classroom/Office: The program needs a portable modular building at Brackett Airport for instruction, office, and flight simulation. The current facility is inadequate and has no quiet space for FAA flight testing, no clean air-conditioned space for flight simulators, and inadequate office space for one-on-one instruction.

2. Flight Training Aircraft – our Advisory Committee approved the request to purchase 1 new Glass Cockpit Training Aircraft and 1 used Training aircraft. Factory new aircraft are equipped with NextGen technologies that are incorporated into Glass Cockpit Technology similar to that in airliners and corporate jets. This is a great long-term investment for the college because the life of an airplane is counted in decades. District cost is minimal with insurance (\$10,000 annually) and maintenance (\$10,000 annually). Advisory Committee also supports the purchase of a multi-engine aircraft, a pilot rating required for professional pilots, when the program can support its use.

3. Flight Simulator Program: This is on hold until the college provides a modular building at the airport.

Critical Decisions Made by Unit: 1. Faculty and Advisory Committee Members discussed the need to push and keep Mt. SAC on the forefront of technology as it relates to pilot training, air traffic control, aircraft dispatching, and unmanned aircraft piloting.

Notable Achievements for Theme A: To Advance Academic Excellence and Student Achievement: 1) Number of Degrees Awarded

-Aeronautics is ranked three on the number of degrees awarded at Mt. SAC

2) Academic Senate 10+1 Award

-Aeronautics received Senate recognition for their partnership with Arts Division - Photo for the curriculum for Drones.

3) Unmanned Aircraft Systems (Drones, UAS) Courses Approved

Aeronautics taught the first drone classes beginning Fall 2018

4) FAA Aircraft Dispatcher Training Program (ADX)

Aeronautics reported a 100% pass rate on students becoming FAA Certified Aircraft Dispatchers. Many of the graduates are now working in the airlines industry.

Contributors to the Report: Robert Rogus

Linda Rogus

<i>Unit Goals</i>	<i>Resources Needed</i>	<i>Where We Make an Impact: Closing the Loop on Goals and Plans</i>
<p>Technology - Staying on the forefront of technology Status: Active Goal Year(s): 2016-17, 2018-19, 2019-20 Date Goal Entered (Optional): 09/01/2016</p>	<p>Request - Full Funding Requested - Unmanned Aircraft Systems (UAS - drones) simulation and aircraft - Aeronautics Describe Plans & Activities Supported (Justification of Need): This request will be needed starting the 2020 fall semester as the Strong Workforce grant is completed. No specific requests at this time.</p>	<p>Reporting Year: 2018-19 % Completed: 25 The new program began in Fall 2018 and more resources have been identified. This is an ongoing request to stay on the forefront of the Unmanned Systems industry. (05/10/2019)</p> <hr/> <p>Reporting Year: 2017-18 % Completed: 50 This project has come under the Strong Workforce Initiative</p>

<i>Unit Goals</i>	<i>Resources Needed</i>	<i>Where We Make an Impact: Closing the Loop on Goals and Plans</i>
	<p>Lead: Robert Rogus</p> <p>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.</p> <p>Planning Unit Priority: Medium</p> <p>Request - Partial Funding Requested - Purchase new glass cockpit flight training aircraft</p> <p>Describe Plans & Activities Supported (Justification of Need): As the Aero department continues to grow with new faculty and students we have a greater demand for pilot training as the pilot shortage continues. We have not been able to meet the student demand for flight training due primarily for lack of aircraft. This purchase would expand opportunities for our students and more can enter the field as a professional pilot with enhanced skills in the new glass cockpit era. The purchase would be an investment for over 40 years and help to relieve some of the pressure off our 1970s aircraft fleet. The Aero department and the flight training account has been saving money to purchase another aircraft sometime in the future. Currently, we have over \$100,000 and would put this toward district funding to make it more affordable.</p>	<p>Program. Some of the equipment has been funded and some has been funded, but not available until July 2018 through June 2019. (05/07/2018)</p> <p>Reporting Year: 2018-19 % Completed: 0 New aircraft with the newest technology is still needed. We continue to turn away students due to lack of aircraft among other issues. (05/10/2019)</p> <hr/> <p>Reporting Year: 2017-18 % Completed: 0 We have not been funded for this new airplane for training. We are still using airplanes from 1975-1978 that were purchased by the school. These airplanes, called legacy airplanes by the FAA, need to be replaced soon so students can learn in a modern industry standard aircraft. We are still turning away students from the flight training program due to lack of airplanes. (05/07/2018)</p>

Unit Goals

Resources Needed

Where We Make an Impact: Closing the Loop on Goals and Plans

Lead: Linda Rogus

What would success look like and

how would you measure it?: The purchase of this aircraft would immediately increase the number of students that can do their flight training and succeed in their classes.

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: High

One-Time Funding Requested (if applicable): 450000

Request - Full Funding Requested - Used aircraft for primary and instrument training to meet student demand.

Describe Plans & Activities

Supported (Justification of Need): The Aero department is growing in all programs (Commercial Flight, Aviation Science, Aircraft Dispatcher and our new program in Unmanned Aircraft during the fall 2018) with new faculty and students. More students enrolling in all programs are deciding they want to learn to fly to get more skills and be more employable so more aircraft are needed. The used aircraft will be built after 1998 to expand our fleet and to slow down the flight hours on the current airplane fleet and therefore, increase the longevity of

Reporting Year: 2018-19

% Completed: 0

The purchase of a used aircraft is still an immediate and critical need. We are continuing to turn away students from the flight training based partly on the lack of airplane availability. (05/10/2019)

Reporting Year: 2017-18

% Completed: 0

This used airplane purchase has not been funded. We are currently turning away 30-60 students per year since the current aircraft are over-utilized. A used airplane is cost effective, has a long life, and could immediately be utilized. (05/07/2018)

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the current fleet. In addition, we have not been able to meet the student demand for flight training due primarily for lack of aircraft. This purchase would expand opportunities for our students and allow more students and veterans to enter the program. The purchase would be an investment for many years. The Aero department and the flight training account has been saving money to purchase another aircraft sometime in the future. Currently, we have over \$100,000 and would put this toward district funding to make it more affordable.

Lead: Linda Rogus
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: High
One-Time Funding Requested (if applicable): 200000

Request - Full Funding Requested - Unmanned Aircraft (UAS) Netted Facility

Describe Plans & Activities Supported (Justification of Need):
 The college is located inside Brackett Airport's airspace. The location within 5 miles severely restricts drone flights at the college. Using a netted facility would allow unrestricted training and safe flying

Reporting Year: 2018-19
% Completed: 0
 This remains a critical need of the department since currently we are having to spend a lot of money each year to rent and off-site space to fly. (05/10/2019)

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of drone technologies.

The netted facility would be utilized by several departments that utilize drones (UAS) as part of their curriculum. Skilled craft-persons would also benefit by having a safe area to train employees. STEM programs would benefit when using the area for special projects and hosting high-school partners.

This facility protects the college and minimizes risk in several ways: 1) FAA flight rules are moot inside a netted facility allowing day and night instruction; 2) Risk of damage to persons or property are minimized; 3) Risk of "fly-away" drones is eliminated

The facility should be a 300' by 120' drone cage (golf course height - 85') with a black net that would enclose the space. Two trailers would be located on the site to serve as office/meeting space. ADA compliant sidewalks, ramps, and lighting, will be installed.

Lead: Robert Rogus
Type of Request: FACILITIES: This section includes minor building improvement projects and alterations to specific rooms or operational areas.
Planning Unit Priority: High
One-Time Funding Requested (if applicable): 450000

<i>Unit Goals</i>	<i>Resources Needed</i>	<i>Where We Make an Impact: Closing the Loop on Goals and Plans</i>
<p>access to department programs and services</p> <p>Status: Active</p> <p>Goal Year(s): 2016-17, 2018-19, 2019-20</p> <p>Date Goal Entered (Optional): 09/01/2016</p>	<p>Support for student tutors and simulator lab assistants - Aeronautics</p> <p>Describe Plans & Activities Supported (Justification of Need): This request is on hold due to the fact that funding was secured for the 2019-2020 school year. However, the department must look for and request funding every year to multiple areas to find funding. We do not always receive funding and this is difficult to plan. Also, students are heavily and critically impacted when funding is not found.</p> <p>Lead: Linda Rogus</p> <p>Type of Request: STAFFING: Requests for permanent employee positions or temporary/hourly employees.</p> <p>Planning Unit Priority: Medium</p> <p>One-Time Funding Requested (if applicable): 0</p> <p>Request - Full Funding Requested - Classroom Flight Simulator for student and faculty demonstrations and enhance the student engagement in the classroom.</p> <p>Describe Plans & Activities Supported (Justification of Need): This basic flight simulator would be added into the classroom in 28B-103. This would enable the faculty in all AERO courses to demonstrate lecture topics and critical understanding of the material. It will engage the students more by hands on demonstrations and be presented in more ways students can learn the material. This should lead to more</p>	<p>% Completed: 25</p> <p>The support for student tutors and simulator lab assistants has not been consistent. Each year the department has to apply to many different grants and areas that funding may be available. The department needs consistent funding each year to assure student success and faculty can rely on funding to make class content decisions. (05/10/2019)</p> <hr/> <p>Reporting Year: 2017-18</p> <p>% Completed: 0</p> <p>This is an urgent need. We have been funded through the Perkins grant for tutors for the last several years. We have lost our funding beginning fall 2018. We are the largest users of the Tech Ed. Resource Center (TERC) and have four days of coverage and about 30 hours per week during the primary semesters of fall and spring. We need the funding assured through the college since it is necessary for student success and getting our students through the aviation programs. (05/07/2018)</p>

Unit Goals

Resources Needed

Where We Make an Impact: Closing the Loop on Goals and Plans

student completions and student success rates.

Lead: Linda Rogus

What would success look like and

how would you measure it?: The installation of a small simulator in the classroom will enhance the lecture material and have another method of learning for the students. The use of the simulator should increase student engagement, retention, and completion rates in the AERO courses.

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: High

One-Time Funding Requested (if applicable): 19000

Request - Full Funding Requested -

Marketing Materials:

Brochures and handouts

Canopy

Banners

Static Models

Multimedia display

Describe Plans & Activities

Supported (Justification of Need):

Aeronautics has two new certificate and degree programs plus existing programs that are in need of marketing materials for advertising and educational outreach. Our

Unit Goals

Resources Needed

Where We Make an Impact: Closing the Loop on Goals and Plans

Aviation Ambassadors participated in over 25 events the past two semesters.

Lead: Linda Rogus

What would success look like and how would you measure it?:

Marketing materials equivalent to High School Outreach type materials

Type of Request: MARKETING:

Requests for services in the areas of graphic design, news, and photography, posting information, communication and social media.

Planning Unit Priority: High

One-Time Funding Requested (if applicable): 5000

Request - Full Funding Requested -

35mm Slide Conversion to Digital Images

Describe Plans & Activities

Supported (Justification of Need):

Create an electronic archive of the 10 year history of the Mt. SAC Classroom in the Sky - a 1960's and 1970's campus wide educational project using United Airlines jet aircraft and Mt. SAC faculty to combine aviation with other STEM subjects. Mt. SAC students and faculty flew "Around the World" the last year of Classroom in the Sky. This program received local and national attention including Channel 5 Hal Fishman, who flew around the world with the college. This is an important historical event that needs to be preserved digitally since the 35mm slides are archived but deteriorating.

Lead: Robert

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What would success look like and how would you measure it?:
 Conversion by professional company such as Costco or other specialty company.

Type of Request: MARKETING:
 Requests for services in the areas of graphic design, news, and photography, posting information, communication and social media.

Planning Unit Priority: High

One-Time Funding Requested (if applicable): 500

<p>Flight Training Facility - Facility improvements that maximize student learning</p> <p>Status: Active</p> <p>Goal Year(s): 2016-17, 2018-19, 2019-20</p> <p>Date Goal Entered (Optional): 09/01/2016</p>	<p>Request - Full Funding Requested - Modular Building for College Aviation for additional classroom space, quiet space for one-on-one instruction, and a climate controlled room for flight simulators.</p> <p>Describe Plans & Activities Supported (Justification of Need): The current facility has no quiet space for instruction, nor does it have a dust-free climate controlled space to install flight simulators. The facility as it is today is a single room plus one office and a bathroom. This single room is shared by 6 instructors, plus students, and is also a reception area. The instructors are using the single storage closet as a quiet space for one-on-one instruction. This project was previously approved; then, cancelled because the lease ran only until year 2025. We are in the process of getting the lease extended to 2035. This is a temporary solution as a new facility should be built at Brackett</p>	<p>Reporting Year: 2018-19</p> <p>% Completed: 0</p> <p>This request is of high importance and critical to our flight training facility and instruction. The department is working on negotiating a longer lease with Brackett Airport and Los Angeles County. (05/10/2019)</p> <hr/> <p>Reporting Year: 2017-18</p> <p>% Completed: 0</p> <p>This project is outdated and closed- after analysis by facilities the project was not viable inside the existing hangar. (05/07/2018)</p>
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Unit Goals

Resources Needed

Where We Make an Impact: Closing the Loop on Goals and Plans

Airport to sustain the programs.

Lead: Linda Rogus

What would success look like and

how would you measure it?: The facility would allow more students access to the flight training center and would allow us to offer classroom instruction to help with the campus classroom restrictions.

Type of Request: FACILITIES: This section includes minor building improvement projects and alterations to specific rooms or operational areas.

Planning Unit Priority: High

One-Time Funding Requested (if applicable): 200000

Request - Full Funding Requested -

Angle of Attack Indicators - the Federal Aviation Administration (FAA) has taken important steps to help improve safety in small aircraft by simplifying design approval requirements for a cockpit instrument called an angle of attack (AOA) indicator. AOA devices, common on military and large civil aircraft, can be added to small planes to supplement airspeed indicators and stall warning systems, alerting pilots of a low airspeed condition before a dangerous aerodynamic stall occurs, especially during takeoff and landing.

Describe Plans & Activities

Supported (Justification of Need):

AOA indicators may help prevent loss of control in small aircraft

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because they provide a more reliable indication of airflow over the wing. Although they have been available for some time, the effort and cost associated with gaining installation approval has limited their use in general aviation. The streamlined requirements are expected to lead to greater use of the devices and increased safety in general aviation.

http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgPolicy.nsf/0/EBOFAC0C1641509586257C76005E6274?OpenDocument

Lead: Robert Rogus
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: High
Documentation Attached?: No
One-Time Funding Requested (if applicable): 18000

Faculty and Support Staff - Increase the effectiveness of department learning objectives and program initiatives
Status: Active
Goal Year(s): 2016-17, 2017-18, 2018-19, 2019-20, 2020-21
Date Goal Entered (Optional): 05/31/2019

Request - Full Funding Requested - Part-time Administrative Assistant. Amount of funding requested is an estimate.
Describe Plans & Activities Supported (Justification of Need): The Aeronautics department is growing significantly with new full-time faculty, adjunct faculty, Aero

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Lab technician, and new programs. The budget and management of the budget has significantly increased as well as several student workers in many capacities and the off-site flight training facility at Brackett Airport. We have grown to four student groups within the department and are adding more classes and participating in more grants that need attention. The amount of student inquiries has significantly increased which is ongoing throughout the school year and into the summer. The department had a part-time dedicated administrative assistant two years ago and she also assisted the aircraft maintenance department, but with the many changes within the division the assistant was absorbed into the division office. We have some division support, but that support is based on availability only.

Lead: Linda Rogus
What would success look like and how would you measure it?: The department is growing in students, faculty, classes, and programs. The department co-chairs cannot keep up with all the student inquiries and requests and keep up all the other department needs, demands and requirements. The budget has and will increase starting Fall 2019 and more assistance is needed. We are also participating in more grants and that needs more support.
Type of Request: STAFFING: Requests

<i>Unit Goals</i>	<i>Resources Needed</i>	<i>Where We Make an Impact: Closing the Loop on Goals and Plans</i>
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for permanent employee positions or temporary/hourly employees.
Planning Unit Priority: High
On-Going Funding Requested (if applicable): 25000

<p>Partnerships - Explore partnership opportunities Status: Active Goal Year(s): 2016-17, 2018-19, 2019-20 Date Goal Entered (Optional): 09/01/2016</p>	<p>Request - Full Funding Requested - Travel funding - FAA AT-CTI Program Describe Plans & Activities Supported (Justification of Need): The FAA renewed the AT-CTI Program January 2018 and participation in the yearly best-practices conference is a requirement of the program. We are requesting on-going funding for two faculty to attend the conference yearly. Lead: Robert Rogus What would success look like and how would you measure it?: This is an annual requirement for our partnership with the Federal Aviation Administration to train Air Traffic Controllers. We continue to be the only college or University in the social area and only two in the entire state. 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): 4000</p>	<p>Reporting Year: 2018-19 % Completed: 0 The travel request to the FAA AT-CTI program is still needed each year. The department requests an on-going fund to assure participation of faculty in this important partnership to train Air Traffic Controllers. We are only one of two colleges or Universities in the state of California that has this partnership. (05/10/2019)</p>
	<p>Request - No Funding Requested - Mt. SAC Foundation - Foundation</p>	<p>Reporting Year: 2018-19 % Completed: 0</p>

<i>Unit Goals</i>	<i>Resources Needed</i>	<i>Where We Make an Impact: Closing the Loop on Goals and Plans</i>
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Employee dedicated to serving Technology & Health Division

Describe Plans & Activities Supported (Justification of Need):
 Aeronautics department supports the Mt. SAC Foundation initiative of hiring a dedicated employee to serve the Technology and Health Division in support of fundraising and alumni initiatives. The Foundation asked for our department to include the request in our PIE to show program support of the Foundation initiative.

Lead: Linda Rogus

Planning Unit Priority: High

This initiative is still requested. With thousands of Mt. SAC AERO/AIRT graduates in the aviation industry, we need to connect with our graduates. We need assistance from the Mt. SAC Foundation to move forward in our connection with alumni. (05/10/2019)