



Administrative Leadership Unit Review (ALUR) Template for FY 2021-22

Date: 4/28/2021

Division: STEM

Division Dean/VP: Grandy

Program(s) within your division: STEM Disciplines, Allied Health Disciplines, STEM Center, Sustainability

1) List the programs that fall within your Division.

Allied Health	Mathematics
Anesthesia Technology	Network Engineering
Biology	Natural Science
Biotechnology	Physics
Central Services Technology	Respiratory Care (Associates + Bachelors)
Chemistry	Surgical Technology
Computer Science	STEM Center
Earth Sciences (Geology/Environmental Science/Oceanography)	Fabrication Lab
Emergency Medical Technology	Learning Communities: Engineering Tech Scholars, Biology Chemistry Scholars, Data Science Pathway, First Year Experience
Engineering	
Electronics Technology	Sustainability – Energize Colleges/Blitz/Sustainability Pathways
Health Science	

2) Briefly describe any major changes to the Division or Programs' purview and functions during the past year.

- Tutoring and embedded support for STEM programs have been implemented increasingly within the STEM Center and all of these programs have had to move online in the past year due to the pandemic.
- Due to the Pandemic, Allied Health have been limited by availability of clinical placement sites so have had to increase use of the simulation lab and students have been delayed in completing their programs.
- Loss of short-term temporary job classification has limited the services that we are able to provide student, especially in Allied Health and higher-level STEM classes.

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- As of 2020-2021 we have lost MESA Funding so are unable to have a full-time MESA Director, but are still working to ensure that we maintain the components of a MESA program with the STEM Center.
- As we move through the funding cycles of the various grants held in the Division, goals and objectives changes so we are working to ensure that we are consistently meeting those.
- Physics faculty were awarded the Department of Energy (DOE) Grant: *Pathways to Improved Representation in Advanced Nuclear Science* that will formalize a partnership with Stanford University and SLAC National Accelerator Laboratory Groups and provide traineeships to Skyline College Students.

3) Briefly describe the major challenges and achievements for your Division over the past year.

Challenges in the STEM Division:

- The STEM Division has relied on short term temporary positions for many years to provide tutoring, embedded support, lab coordination, and tutoring for the various programs within the STEM Division – particularly those where a current Skyline College student will not be able to provide support, such as specialized Allied Health programs and higher-level STEM Classes. These positions are usually filled by recent graduates or graduate students who are only available to work for a few hours per week. Beginning this year, CSEA has denied these positions as being not short term so we have not been able to provide the same level of tutoring and support in many of the lab classes and within the STEM Center. This is particularly problematic at this time when students are struggling with remote learning.
- Transfer of STEM Center activities to online environment has been challenging. One of the main benefits of the STEM Center is the sense of community that the physical space and proximity to faculty and staff provides and it has been difficult to recreate that in the virtual world. The STEM Center Team have done a great job of transferring academic support as well as community building opportunities online, but they are looking forward to returning to campus and the STEM Center space.
- Science in Action Lecture series has continued throughout the semester and brought close to 30 local area scientists to Skyline College to introduce students to various routes within STEM that they can take. Forty to Fifty students attend Science, Faculty, and Staff attend Science in Action each week.
- Due to the pandemic, many hospitals cancelled or postponed clinical placements for students and did not allow instructors into hospitals to assess student competencies. This affected: Respiratory Care, Surgical Technology, Emergency Medical Care, and Anesthesia Technology. At this point most hospitals and programs have resumed clinical placements, but some at reduced capacity, which has created a backlog of students who have not been able to complete their clinicals and thus their degree or certificate requirements.
- Science labs are notoriously hard to convert to distance education and prior to Spring, 2020, faculty did not consider it possible to convert many of the labs that we offer. Most labs have now been converted to online, some with lab kits and some with simulations



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or common household supplies. Additionally, some labs that were considered essential were able to continue on campus, but with a reduced capacity.

Achievements in the STEM Division:

- Transfer Sciences have adapted to being in virtual environment by developing lab kits and prioritizing skills that must be taught in person. Faculty and lab coordinators worked collaboratively (and tirelessly) to adapt their classes to be taught at home. Lab kits were developed for many classes and provided to approximately 1000 students per semester. The lab kits allowed students to engage in hands-on learning at home rather than relying on simulations and videos. In some disciplines we have seen that this can be a good alternative to face-to-face labs and will allow us to provide additional lab science classes in an online format in the future, providing additional flexibility and accessibility for students.
- As hospitals have limited the number of students in clinical placements, the Allied Health Programs have increased the use of our Simulation Lab on campus. This has been a great utilization of our resources and has also renewed the urgency for a full-time Laboratory Coordinator for the Simulation Lab.
- Physics Faculty were awarded a new Department of Energy Grant which will create New partnerships with SLAC and Stanford University in addition to providing 12 paid traineeships for students to work in our Fabrication Lab and then train at Stanford and SLAC facilities.
- BABEC Grant has continued throughout the pandemic with grant partners and biotechnology students creating biotechnology supplies for local K-12 institutions that would not otherwise be able to engage in hands-on labs.
- The STEM Division has strengthened our partnership with Strategic Partnerships and Workforce Development Division through the development of several certificates (Artificial Intelligence, Data Science, Electronics) and pathways to respond to industry needs as well as enhanced Dual Enrollment offerings with local high school partners.
- Creation of new Electronics Lab (paid through a combination of grant funds and capital improvement funds) and Electronics Technology Pathway in partnership with Strategic Partnership and Workforce Development Division in an effort to strengthen both dual enrollment offerings and pathway to Skyline College for local area high school students.
- Successful implementation of PHYS, CHEM, and MATH Jams for each semester and MATH and CHEM for Summer Session as a 1-week intensive preparation for students entering MATH, Chemistry, or Physics series to build confidence and fundamental skills necessary to succeed in class.
- Sustainability initiatives expanded through 5 additional internships, 15+ additional sustainability focused lessons developed across campus, and 6 additional classes across the college contextualized to the theme of sustainability as part of the GE thematic pathway in Sustainability.
- STEM Peer Mentors implemented through STEM Center and through PIF grant to provide individualized support for students and professional development for students.
- STEM Pals program implemented through PIF funding and in collaboration with SPWD to bring STEM college mentors to middle school age girls in the local community at the age



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when girls tend to lose confidence in their math and science abilities in an effort to introduce them to role model female science students.

4) List and describe the major goals for your Division – What will the Division focus on achieving over the next 1-3 years? How do your Division goals align with the College’s [M-V-V](#) and [Education Master Plan](#)?

1. Fully implement the STEM Center Model and Student Success Team Model within the STEM Center, including institutionalizing STEM Center roles and academic support opportunities within the STEM Center. (Values: Campus Climate, Open Access, Student Success and Equity, Academic Excellence, Community Partnerships | Ed Master Plan: Strategic Goals 1, 2, 3).
2. Refine Math placement procedures and Math course offerings to become fully compliant with AB705 and ensure equitable outcomes for all students completing their Math course at Skyline College. (Values: Social Justice, Open Access, Student Success and Equity, Academic Excellence | Ed Master Plan: Strategic Goals 1, 2).
3. Continue to recruit and offer high quality Allied Health Programs that lead students immediately into living wage careers within the Bay Area and work closely with hospitals to ensure that students are gaining the skills necessary to be successful health care professionals. (Values: Student Success and Equity, Academic Excellence, Community Partnerships | Ed Master Plan: Strategic Goals 2, 3, 5, 6).
4. Fully implement the grant goals for grants currently held within STEM Division and continue to seek additional grant funding to support student success and engagement in STEM in an effort to meet workforce demand in the Bay Area and create opportunities for students to gain work experience, thereby opening opportunities for them. (Values: Social Justice, Student Success and Equity, Academic Excellence | Ed Master Plan: Strategic Goals 1, 2).
5. Update lab equipment to continue to offer high-quality, state of the art lab experiences with modern lab equipment and curriculum for all students in transfer and Allied Health related STEM lab classes. (Values: Student Success and Equity, Academic Excellence | Ed Master Plan: Strategic Goals 2, 3).
6. Institutionalize and connect the sustainability work, such as Energize Colleges, Blitz, campus as a living lab, Sustainability GE Pathway, etc. and build additional community partnerships and sustainability pathway to high schools. (Values: Social Justice, Student Success and Equity, Academic Excellence, Community Partnerships, Sustainability | Ed Master Plan: Strategic Goals 1, 2, 3, 5).



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5) Using the boxes below, list the resource requests that the Division is moving forward for consideration. Please note that the resource requests should be in declining order of priority, as indicated in the upper left corner of each box. For each resource request, describe how it connects with your Division goals, and the potential consequences of not securing the requested resource. In sum, please explain why filling this request should be a priority for the College.

Order of Priority	Resource Request Title	Type	Program(s) Impacted	Amount \$
1	STEM Center Instructional Aide II	Classified Professional FTE	STEM Center, STEM + Allied Health Disciplines	\$94,604
Describe how this request impacts program/division operations, and how it will further completion of the Division goals stated above.				
This request supports the division to meet grant goals for HSI STEM Grant, allows us to provide high level support for AB705 implementation, and ensures that we are fully implementing the STEM Center model and Student Success Team. (Goals 1, 2, 5)				

Order of Priority	Resource Request Title	Type	Program(s) Impacted	Amount \$
2	STEM Center Retention Specialist	Classified Professional FTE	STEM Center, STEM + Allied Health Disciplines	\$94,604
Describe how this request impacts program/division operations, and how it will further completion of the Division goals stated above.				
This request supports the division to meet grant goals for HSI STEM Grant, allows us to provide high level support for AB705 implementation, and ensures that we are fully implementing the STEM Center model and Student Success Team. (Goals 1, 2, 5)				



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3	STEM Center Counselor	Faculty/ Adjunct FTE	STEM Center, STEM + Allied Health Disciplines	\$106,725
<p>Describe how this request impacts program/division operations, and how it will further completion of the Division goals stated above.</p> <p>This request supports the division to meet grant goals for HSI STEM Grant, allows us to provide high level support for AB705 implementation, and ensures that we are fully implementing the STEM Center model and Student Success Team. Additionally, the STEM Center Counselor supports many of the Allied Health Programs ensuring that they are meeting their requirements to be able to graduate and begin their careers in health care. (Goals 1, 2, 3, 5)</p>				

Order of Priority	Resource Request Title	Type	Program(s) Impacted	Amount \$
4	Simulation Lab Coordinator	Classified Professional FTE	Allied Health Programs	\$94,604
<p>Describe how this request impacts program/division operations, and how it will further completion of the Division goals stated above.</p> <p>This request ensures that we are meeting the needs of Allied Health students by having a trained person to ensure they have the skills needed to be successful in hospital setting, especially when clinical placements are limited. Additionally, this role ensures that the equipment that we have is maintained and kept up to date so that we are offering high quality lab experiences. (Goals 3,5)</p>				



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5	BIOL/CHEM Lab Equipment Upgrade	Equipment	CHEM BIOL GEOL OCEN ENVS	\$160,000
<p>Describe how this request impacts program/division operations, and how it will further completion of the Division goals stated above.</p> <p>As much of the lab equipment has aged, we are not able to offer the high-quality lab experience that students need to be successful when they transfer or move into the workforce. Updating equipment would ensure that they are working on modern equipment and learning modern techniques. (Goal 4. 5)</p>				

Order of Priority	Resource Request Title	Type	Program(s) Impacted	Amount \$
6	Sustainability Coordinator	Faculty/ Adjunct FTE	Interdisciplinary – STEM + other transfer areas, SESP, SPWD, etc.	\$94,604
<p>Describe how this request impacts program/division operations, and how it will further completion of the Division goals stated above.</p> <p>A permanent sustainability coordinator would allow the long-term connection of all of the sustainability work on campus. It would also allow expansion of some of our efforts which would allow more real-world experiences for students in the growing field of sustainability. (Goal 6)</p>				

If you have additional resource requests, please copy and paste new boxes below, and be sure to update the priority ranking.