



2020 Initiatives Proposal Form

Thank you for your interest in submitting a proposal to the 2020 Initiatives process.

Please complete this form, save it to your hard drive, and then email a copy to: 2020@stockton.edu. Please copy your Dean/Director on the email. You will then be contacted by the appropriate 2020 Initiative Team representative/LEGS facilitators.

Proposals will be evaluated based on general criteria including the following:

- University-wide impact
- Clearly addressing one of the four LEGS themes from the 2020 strategic plan
- Specific budget details provided
- Realistic outcomes identified
- Assessment measures specified

Please consider the following questions as helpful prompts:

University-wide Objective(s)

- Does your proposal clearly address an issue relevant to your selected “primary strategic (LEGS) theme”?
- What specifically do you wish to accomplish with your project?
- How will Stockton, as a whole, benefit?

Expected Results

- How will you know if your project is a success?
- What are your anticipated outcomes and specific measurements for success?
- Does your proposal clearly indicate the person(s) or department(s) that will assume responsibility for the various work tasks?
- What is your project's "finish line"?

General Application Information	
Your Name	
Your Email	
Title of Project	
Project Leader	
LEGS Initiative Team Coach	
Project Partner(s)	
Duration / Time Frame of Project	

Proposal Category (choose one: one-time or ongoing)			
One-Time Event or Activity		Ongoing Event or Activity	
(A) \$5,000 or less		(C) \$5,000 or less	
(B) More than \$5,000		(D) More than \$5,000	

Strategic Theme (choose one)	
	Learning
	Engagement
	Global Perspectives
	Sustainability

Strategic Objectives: choose one primary (P) in main theme and up to three secondary (S) In any themes

Learning	
Deliver high value-added learning experiences and promote scholarly activity (S1)	Reward scholarly applications (ER2)
Promote liberal arts ideal to develop lifelong learners (S2)	Establish additional revenue sources (RS1-L)
Strengthen internal processes to support learning (IP1-L)	Reduce expenses (RS2-L)
Develop faculty and staff skills to support learning (ER1-L)	Align resources to support strategic plan (RS3-L)

Engagement	
Establish Stockton as an integral part of the identity of students, faculty, staff, alumni, and community members (S3)	Foster an interactive environment among students, faculty, staff, and community (ER3)
Prepare students for active citizenship role (S4)	Increase opportunities for interactions between internal and external communities (ER4)
Create mutually reinforcing intellectual and co-curricular experiences (S5)	Establish additional revenue sources (RS1-E)
Strengthen internal processes to support engagement (IP1-E)	Reduce expenses (RS2-E)
Develop faculty and staff skills to support engagement (ER1-E)	Align resources to support the strategic plan (RS3-E)

Global Perspectives	
Develop a globally diverse Stockton community (S6)	Strengthen opportunities for global interaction among members of the Stockton community (ER5)
Enhance capacity to participate globally (S7)	Establish additional revenue sources (RS1-G)
Strengthen internal processes to support global education (IP1-G)	Reduce expenses (RS2-G)
Integrate global program efforts among multiple units of the university (IP2)	Align resources to support the strategic plan (RS3-G)
Develop faculty and staff skills to support global education (ER1-G)	

Sustainability	
Increase sustainable infrastructure (S8)	Develop and implement sustainability programs (IP5)
Enhance sustainability education and research (S9)	Develop faculty and staff skills to support sustainability (ER1-S)
Increase recognition as a model of sustainability (S10)	Reward sustainable practices (ER6)
Partner to promote global sustainability (S11)	Establish additional revenue sources (RS1-S)
Strengthen internal process to support sustainability (IP1-S)	Reduce expenses (RS2-S)
Prioritize sustainability in plan operations and residential life (IP3)	Align resources to support the strategic plan (RS3-S)
Promote sustainability across the curriculum (IP4)	Seek efficiencies through sustainable practices (RS4)

The tables below allow for summaries of about 350 words. Additional information can be included as an attachment.

Narrative Summary of Project

Assessment Plan: What are your anticipated outcomes and specific measurements for success?

Budget Summary					
	Item	FY2017 July 1, 2016 – June 30, 2017	FY2018 July 1, 2017 – June 30, 2018	FY2019 July 1, 2018 – June 30, 2019	Notes/Comments (stipends, supplies, hospitality, etc.)
1.					
2.					
3.					
4.					
5.					
6.					
7.					
	Total				

First-Year Funding Questions		
Will you need funds for <u>immediate</u> use to begin your project?	Yes	No
If so, how much?		
Date when funds will be needed		

CC: Dean/Director

Student Spaceflight Experiments Program Learning Community

Jason Shulman, Pamela Cohn, Tara Harmer Luke, Norma Boakes, Melissa Zwick and Peter Straub

Stockton has been accepted as a community member for the Mission 11 of the Student Spaceflight Experiments Program (SSEP)¹ which is sponsored by the National Center for Earth and Space Science Education (NCESSSE).² NCESSSE is a non-profit that works in the K-16 education community to provide authentic research opportunities to do microgravity (weightlessness) research on the International Space Station (ISS). The intent of this proposed work is to support and assess an example of high impact practices in general education within the General Studies curriculum at Stockton University (GNM 2800: Spaceflight Experiments Program) as well as engage Stockton and the surrounding communities in discussions on science by exploiting the excitement generated by space travel. “High-Impact Practices (HIPs) are techniques and designs for teaching and learning that have proven to be beneficial for student engagement and successful learning among students from many backgrounds.”³ Among the HIPs that are recommended, this project involves, a learning community, a common intellectual experience, undergraduate research, collaborative assignments and projects and writing intensive course.⁴ The SSEP learning community uses an exciting, authentic research project to teach students critical thinking, proposal writing and how the peer review system operates to develop the best possible scientific ideas. The Stockton Essential Learning Objectives (ELOs) for this course are: Creativity and innovation, Critical thinking, Information literacy and research skills, and Teamwork and collaboration.⁵ These ELOs are related to the Stockton University Strategic Theme of Learning under primary objective S1 (Deliver high value-added learning experiences and promote scholarly activity) and secondary objectives IPL-1 (Strengthen internal processes to support learning) and ER1-L (Develop faculty and staff skills to support learning). A second objective of the project is to promote scientific literacy through an accessible space program on campus and in the surrounding K-12 community by outreach activities of the students involved including a mission patch art competition which supports the Strategic Theme of Engagement under secondary objective ER3 (Foster an interactive environment among students, faculty, staff, and community).

Within the SSEP learning community, students and faculty mentors collaborate in groups to design microgravity experiments. Students involved in the project are enrolled in GNM 2800 Spaceflight Experimentation for fall 2016 for the competition phase. Formation of the Learning Community began in Fall 2016 with 26 students enrolled. Dr. Jason Shulman (PHYS), Dr. Pamela Cohn (CHEM) and Dr. Tara Harmer Luke (BIOL) as well as Dr. Peter Straub (dean) are mentoring the student experiments. Dr. Norma Boakes (EDUC), Ms. Patricia Weeks (SRI/ETTC) and Dr. Tara Harmer Luke will oversee K-12 community outreach. Dr. Melissa

¹ <http://ssep.ncesse.org/>

² <http://ssep.ncesse.org/>

³ <http://leap.aacu.org/toolkit/high-impact-practices>

⁴ Kuh, G. D. (2008) High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter. American Association of Colleges and Universities. Washington, DC 37 pp. ISBN 978-0-9796181-4-7

⁵ https://intraweb.stockton.edu/eyos/office_of_academic_affairs/content/docs/ELO_Web_page_docs/2015_ELOutcomes_NewBrand.pdf

Zwick will oversee assessment. Additional learning community activities will keep the students together on the project throughout the year including opportunities for additional credit in GNM or their major for experimental analysis. Student experimental proposals are reviewed at the local and the national level before one experiment from our community is chosen to fly to the ISS. Activities for the community include development of ideas, proposing experiments, writing proposals, learning about peer review and after the experiment is chosen, optimization of the experimental design. Once the experimental design is chosen, it becomes the learning community's project and will be tested here at Stockton and prepared for launch, transferred to the ISS and returned for analysis. Besides the experimental design phase, students in the community are invited to events such as the visit of Dr. Jeff Goldstein, Director of the NCESSSE who spoke in the Stockton PAC October 18th and then had lunch and discussions with the SSEP community students and faculty. An additional SSEP learning community goal is to engage the Stockton and local K-12 communities through a mission patch art competition. We are running two art competitions, one for Stockton students (ARHU design classes are participating) and one for the K-12 community (~8 schools are participating so far) with targets of >100 Stockton and >200 K-12 participants. Selected designs will actually fly to the ISS with the chosen experiments - and be made into patches for distribution to the community (see attached mission patch competition flyer). Upon return, the designs will be framed, and the community design will be given to the winning school. The Stockton design will be displayed in the Unified Science Center to memorialize the project. Stockton SSEP students will visit the participating K-12 schools to report on their activities. A spring forum event on campus is being planned to invite a speaker or speakers on space travel technologies with the intent to have a lecture open to the Stockton Community as well as inviting local schools. The SSEP community will also work with the Stockton STEM Collaborative to engage the local K-12 community in this area.

Dissemination of the work done by Stockton SSEP students will involve linkages to K-12 community partners that have begun with the mission patch competition. Four districts, encompassing thirty-five schools have agreed to partner with the project. Student teams will visit the participating schools (subject to their agreement and schedule) and deliver an overview of the Student Spaceflight Experiments Program and Stockton's participation including information on the study of microgravity and the role of the International Space Station in America and the world's space programs. A program overview PowerPoint will be developed with the SSEP students and faculty to present an appropriate introduction for the K-12 audience. Individual students will also share their personal experience. Additionally, we will use a webinar format to reach schools that may be unable to find time for a "live" visit. The webinars will allow us to share what we are doing and our STEM facilities at Stockton with the K-12 community. Links to basic STEM labs that will tie in to our space program will also be made available to teachers. K-12 participants will be given information on the launch dates and Mission 11 launch activities (frequently broadcast on NASA TV) to keep them engaged. A report on the activities and findings from the SSEP flight and analysis and the SSEP conference will be given to the schools for dissemination (in school newsletters or web-sites) as these activities will occur over the summer and into the next school year. SSEP students will also use Stockton venues such as the proposed Space Technology Forum and the Stockton Day of Scholarship and the NAMS Poster Day to provide the same overview information to the Stockton community. A student intern will be sought from the COMM Program who would

assist with dissemination of the SSEP message across social media platforms and to assist with publicizing events.

Participating districts and schools include:

Hamilton Township School District (2): William Davies Middle School, George Hess Elementary Complex.

Toms River Regional School District (18): High School East, High School North, High School South, Intermediate East, Intermediate North, Intermediate South, Beachwood Elementary, Cedar Grove Elementary, Citta Elementary, East Dover Elementary, Hooper Ave Elementary, North Dover Elementary, Pine Beach Elementary, Silver Bay Elementary, South Toms River Elementary, Walnut Street Elementary, Washington Street Elementary, West Dover Elementary.

Greater Egg Harbor Regional High School District (3): Oakcrest High School, Absegami High School, Cedar Creek High School.

Atlantic City School District (11): Atlantic City High School, Brighton Ave School, Chelsea Heights School, Dr. Martin Luther King Jr. School, New York Ave School, Pennsylvania Ave School, Richmond Ave. School, Sovereign Ave. School, Texas Ave. School, Uptown School Complex, Venice Park School

In addition to the scientific competition and as part of the learning community activities, we would like to send a team to the launch of their experiment at Cape Canaveral in Florida in June 2017 (presently scheduled for 6/15/17) and to the NASA museum at the Kennedy Space Center, Cape Canaveral, FL. At the museum and the Cape Launch site we intend to produce short podcasts featuring the SSEP students and their involvement in research to be distributed by social media to Stockton and the participating K-12 community. The launch team will consist of 6-10 students and 3 faculty depending on available funds. Students will be selected based on their participation in the project giving precedence for the selected proposal group and a commitment to a balanced and diverse team. We would also like to include at least three places on the launch trip to represent the Stockton and/or K-12 Partner students who participated in the STEAM mission patch competition, the COMM intern and an observer nominated by the Stockton Student Senate. Given that some Stockton students and in particular the K-12 winner may be minors we will follow all regulations for the protection of minors for this experience. Funds are requested for approximately ½ the cost of the student launch travel costs (\$3000 request) with the other half being fundraised through a Stockton “Elevate” platform and the NAMS website. A promotional video is currently being produced to assist with this effort. The most convenient travel would be to fly on Spirit Airlines from Atlantic City to Orlando and then drive the 43 miles to the Cape. As the launch is weather dependent, a window of four days and three nights would generally cover any delays (which would require some flexibility in travel). There are activities that can be used to effectively fill the schedule including the NASA museum at the Kennedy Space Center, the Merritt Island National Wildlife Refuge at Cape Canaveral and the Space Coast, all of which contribute to the launch activity. The School of Natural Sciences & Mathematics (NAMS) will contribute the faculty travel (~\$3000). After the experiment returns from the ISS, students will work on the analysis over summer 2017 and prepare oral and poster presentations for the national SSEP conference at the Smithsonian Air and Space museum in Washington, D.C in fall 2017. Participation in the SSEP National conference will involve overnight travel to D.C. for approximately 6-8 students and funds are requested for ~1/2 the costs (\$1000 request) with the other half to be requested through the Stockton Student Travel Fund (STF) for the presenters. Students will be selected based on participation in the analysis

and as a balanced representation of the diversity of the community (to be selected as above for launch trip). Again, NAMS will be responsible for faculty travel. Finally, funds are requested to cover ¼ of the cost of the actual flight program. Sending experiments to space is a commercial venture and the total cost of the program for Stockton is \$24,000. NAMS has committed \$18,000 of funds raised for undergraduate research by the school. A commitment by Stockton University to cost share for the remaining \$6000 would go a long way to reduce the fundraising burden by NAMS to cover additional student and faculty travel and activities.

Assessment Plan

Assessment of the SSEP learning community will be based on the specific ELOs enumerated above. Dr. Melissa Zwick has developed survey instruments to assess participants in GNM 2800 at several points during the process including a pre-survey, post-proposal submission and after the final proposal acceptance as well as during the pre-flight and post-flight period. The surveys are designed to address progress on our objectives of: Creativity and innovation, Critical thinking, Information literacy and research skills, and Teamwork and collaboration. Students will be assessed on writing by their mentors based on the final proposal and a journal of experiences. Campus wide assessment will involve surveys of participants in planned awareness events run by student participants to familiarize the campus and K-12 partners with the work (such as the mission patch competition and campus space technology forum) and to assess the engagement goals. Expected outcomes include student participant's better understanding of the scientific process (a general education goal) and better understanding campus-wide of the necessity to undertake space research. An additional activity will be to develop a general assessment survey to use at public dissemination activities including the K-12 visits, the space technology forum and the Stockton events to gauge public perceptions of the space program, space flight experiments and the scientific process.

Faculty attitudes will also be surveyed on progress toward objectives, particularly related to the role of authentic research in the General Education (GNM) curriculum. Faculty outcomes to be assessed from the strategic objectives include did the program strengthen the processes and skills in support of learning and the whether the project delivered a high value learning experience while engaging the community.

Information collected on the assessment of this project will be shared with the campus community through the Day of Scholarship and we anticipate through publication in an educational journal such as Wiley's *Science Education*. Venues for sharing the assessment of the project may also include national/international presentation such as the International STEM Association (www.isea-stem.org) or the National Science Teachers Association (NSTA) STEM Forum & Expo and/or national conference.



Stockton University-Student Spaceflight Experiments Program, Mission 11 Student Mission Patch Competition

To support the Stockton University Student Spaceflight Experiments Program (SSEP), Mission 11, a patch design competition will be held at two levels. One will be at the University level and the second at the K-12 level in the local school district.

Mission patches have been an essential cultural element of human spaceflight since the inception of the Mercury program by NASA in the 1960s (http://history.nasa.gov/mission_patches.html). The mission patch in the US space program has its roots in the patches that soldiers, sailors, marines and air force personnel developed (and drew themselves) to promote pride and esprit de corps in their units (http://bluejacket.com/usn_avi_insig_history.htm). These in turn are believed to have been influenced by heraldic badges worn during the days of knights in armor. In keeping with this tradition the SSEP (<http://ssep.ncesse.org/>) has invited each new onboarding community to hold a competition to design and fly their own mission patch which reflects the unique characteristics of that community. Mission patches for the previous SSEP mission can be see here: <http://ssep.ncesse.org/communities/mission-patches/> and below. The mission patch designs selected, one from each level, will also be flown to the International Space Station (ISS: http://www.nasa.gov/mission_pages/station/main/index.html) on the SpaceX Dragon capsule/Falcon 9 rocket (<http://www.spacex.com/>) along with the student experiments of Mission 11 and returned with the experiments upon completion of the flight operations. These flight patch designs will be mounted and displayed at the home institutions. The winning mission patch designs will be fabricated into embroidered patches to commemorate participation in the project.

Competition opens September 30th 2016.

Competition closes December, 23rd, 2016

Winners will be announced in January 2017

Mission 11 is expected to fly to the ISS from Cape Canaveral, FL in mid-June, 2017 and return 6-8 weeks later.

Requirements:

1. A Mission Patch must be a piece of paper **NO LARGER** than 3.5-inch x 3.5-inch, and its design should reflect pride in your community, and your participation in the SSEP.
2. There is no restriction on the type of paper or the inks to be used. **But to fly, it must be paper not card stock or cardboard. Patches submitted on card stock or cardboard will be (and have been) rejected.**
3. A Mission Patch can be black & white or full color.

4. A Mission Patch can only be composed of a single sheet of 3.5-inch x 3.5-inch paper and the ink on the paper.
5. A Mission Patch cannot include multiple layers of paper glued or taped on top of one another.
6. Please include your full contact information including e-mail, school, and class or grade.
7. Patch designs should be submitted to:

SSEP Program Patch Design

C/o School of Natural Sciences and Mathematics

USC-240

101 Vera King Farris Dr.

Stockton University

Galloway, NJ 08205-9441



Representative SSEP mission patches.