

About STEM Operation Success

In 2020, the federal Department of Education awarded a Title V grant to fund STEM Operation Success (SOS) for five years. The program's mission is to provide a seamless pipeline to increase the number of STEM students (including Nursing, Kinesiology, and Health Sciences majors) who will graduate within their discipline at Texas A&M University-Corpus Christi (TAMU-CC).



How SOS Accomplishes its Mission

- The Collegiate STEM Institute (CSI) is a summer bridge program, hosted both virtually and in-person, that prepares students for their first year at TAMU-CC.
- The Community Family Engagement Project uses 1-day mini-boot camps and workshops to provide interactive and engaging lessons in personal financial education via the iGRAD platform.
- The Development and Resources Program facilitates the use of iGrad by professors in their courses and funds upgrades for STEM classrooms, labs, and learning areas.



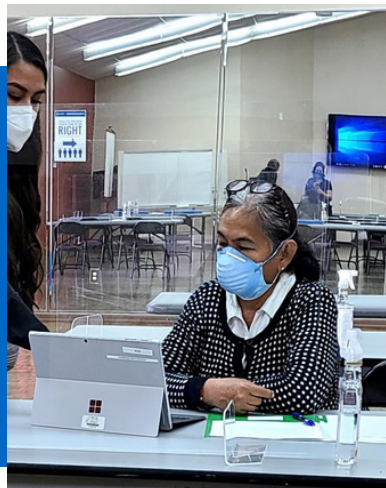
iGrad's personal finance courses provide engaging and user-friendly lessons on budgeting, financial aid, and student loan debt, among other topics.



The Collegiate STEM Institute (CSI) introduces participants to the university using tours, faculty and program presentations, and STEM activities.

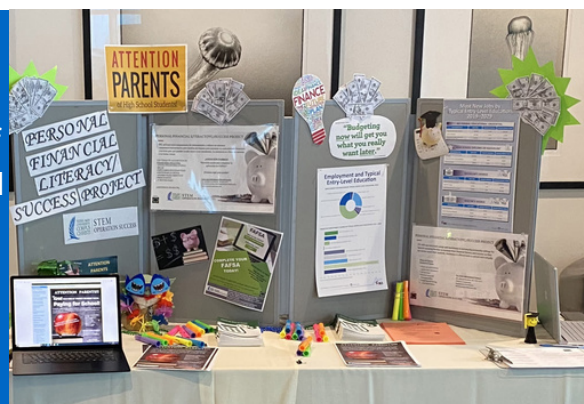
CSI and COVID-19

The COVID-19 pandemic did not stop the Collegiate STEM Institute from happening. Students were able to attend the four-week program safely in person or virtually through Zoom. Thanks to the flexibility of the SOS staff and program participants, the inaugural CSI was a success. All participating students who completed all program requirements received a \$500 stipend in the Fall of 2021.



Family Engagement

STEM Operation Success staff held iGRAD Personal Financial Education workshops for local families as well as CSI and TAMU-CC students.



2021 Facilities Upgrades

Island Hall room 263 was one of the labs that received a technology upgrade. The state-of-the-art computer lab is used by the Nursing department and was also available for use by later CSI groups.

CSI: College 101 Series



SOS Director, Dr. Patricia Spaniol-Mathews, presents lessons in study skills to 2021 CSI participants.



Caring for their Community

While exploring the TAMU-CC Hike and Bike trail, CSI students worked hard to clean up litter found in the habitats along the trail. The generosity of spirit and sense of community exhibited by these future Islanders led to the addition of volunteerism activities to the 2023 and 2024 CSI programs. SOS staff are extremely proud of our students for their eagerness to make their community a better place.



AutoCheck and Save

2022 CSI participants had their vehicle emissions tested with the university's AutoCheck program. Out of the Office of Research and Engagement, AutoCheck workers quickly check vehicle exhaust for pollutants, test gas caps for leakage, and read engine codes when the "Test Engine" light is showing. Some students received a \$600 voucher from Autocheck to have their cars fixed at participating autosshops.



CSI Scholars practice pipetting with Dr. Ioana Pavel and her Chemistry student workers. In this activity, students extracted gold precipitate that formed during a chemical reaction.



Islander Regional Hospital

Led by TAMU-CC nursing students, CSI participants practiced lifesaving techniques at the mock hospital and nursing labs. Nursing is the most popular major among CSI students.

Dr. Robert R. Furgason Engineering Building

CSI Scholars had the opportunity to tour the Robert R. Furgason Engineering Building and work with faculty on engineering projects. They also made use of the full-body scanner.



Snuggle Therapy

The Student Study Area (SSA), located at SOS headquarters in Classroom West, is a designated space where students can relax, study, print (at no cost), and have fun. Students using the area have the opportunity to participate in many activities throughout the entire year, the furriest taking place during spring final exams...bunnies! Snuggling a friendly bunny is a great way to destress and take a break from exams.

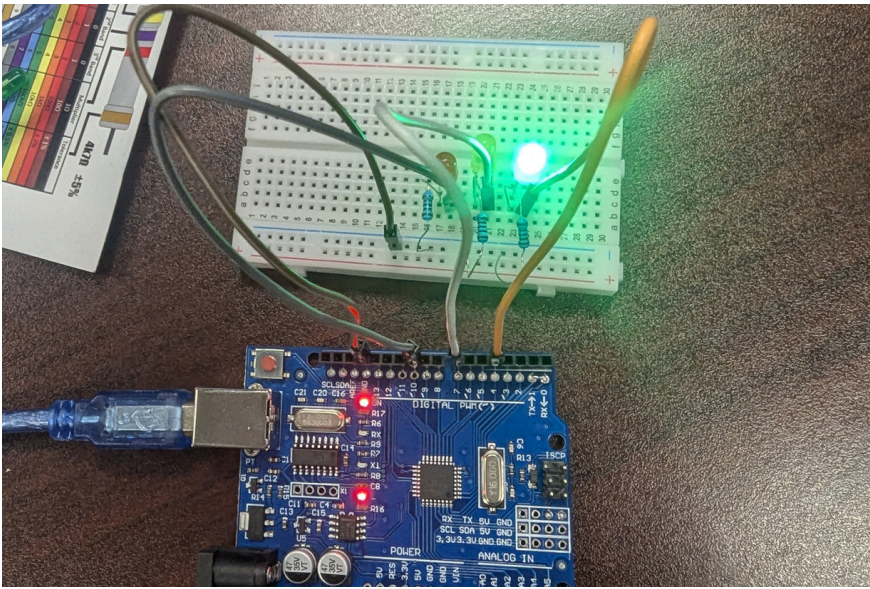
Year-Round Activities for CSI Scholars



In the Fall of 2023, CSI students got to attend the Texas Floating Classroom aboard the Archimedes.



CSI scholars learned about marine biology at the famed Harte Research Institute.



CSI participants practiced their engineering and coding skills with an Arduino kit as part of their Box of Science.

All-Virtual CSI

To serve as many students as possible, the 2024 Collegiate STEM Institute became entirely virtual. The participants were divided into two cohorts: one for Nursing, Health Sciences, and Kinesiology, and one for all other STEM majors. The virtual format did not stop the STEM activities from happening, as participants received a “Box of Science” in order to complete engaging STEM activities.



Surf's Up!

Just because CSI students met on Zoom didn't mean they didn't have meaningful, personal interactions. In September, they had surfing lessons with instructors from Recreational Sports.



SOS funds were used to purchase force plates and the Thea Markerless motion capture system for Dr. Applequist's research in the Kinesiology department.



CSI- The Final Year

The final year of the STEM Operation Success grant concluded with virtual CSI sessions, which enabled SOS staff to reach 90 students during the program. The CSI still focused on campus resources, Personal Financial Education, and career planning, as it had in previous years. The major change was that it was repeated on two different weeks, allowing participants more flexibility. Reaching students with respect to their schedules allowed us to include a greater number of students.



CSI Student Spotlight: Jared Vieyra

Jared Vieyra '25 (2021 CSI) began his TAMU-CC education with the CSI program and continued to utilize STEM programs throughout his academic journey, culminating in a BS in Mechanical Engineering. As a TRIO McNair scholar, Jared completed a research project in which he designed an electronically operated greenhouse. He plans to attend graduate school, where he will design and 3D print fully functional prosthetics.



CSI Student Spotlight: Aleena Roy

Aleena Roy '26 (2023 CSI) is an honors Biomedical Sciences major pursuing a certificate in nonprofit writing. She currently leads a project on fluid shifts in space, developing a technical garment to address this challenge. Her proposal earned institutional funding through a competitive research competition, and she plans to pursue an MD alongside a master's in Biomedical Engineering.



- While most of the CSI participants came from Texas, many also came from all over the country to enroll in TAMU-CC.
- Because of our virtual program, they did not need to be on campus.
- Several students came from other states, such as Oklahoma, Ohio, and Illinois.
- Some students attended while traveling to Hawaii and even Sweden.



Former CSI student, Videl Obenhin '25, relaxes during final exams with furry quests.



Christin Yoro (center) brought in so many of her friends to the Study Area they became honorary CSI students.

STEM Operation Success and the Collegiate STEM Institute were made possible by Dr. Patricia Spaniol-Mathews and the SOS staff, including:
Cynthia Lopez, Tony Phan, Marissa Scanlon,
Christopher “Kitt” Wilson, Gerardo Hinojosa, Alberto Hernandez, Amanda Rose,
Sebastian Garcia, and student workers Samantha Gutierrez and Stephen Escochea.

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Disclaimer: The contents of this newsletter were developed under a grant from the Department of Education. However, those contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government.

