CSU Monterey Bay’s HSI STEM & Articulation Program

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CSU Monterey Bay's program under the U.S. Department of Education's HSI STEM and Articulation grant capitalizes on CSUMB's new and rapidly growing STEM majors and minors. Within the scope of the grant the university has launched a new B.S. degree in Marine Science, developed new minors in Chemistry and Statistics, fortified young majors in Biology and Computer Science, and restructured its Environmental Science, Technology & Policy B.S. degree.

Undergraduate research: The high impact practice of undergraduate research is a cornerstone of the program and is housed in CSUMB’s newly formed undergraduate Research Opportunities Center (UROC). UROC’s mission is to build students’ educational ownership, intellectual vibrancy, and scholarly identity. UROC achieves this through mentored undergraduate research, rigorous, authentic, and calibrated scholarly activities. UROC began with a lean staff that was primarily grant funded and now has eight staff members, five of whom are funded by the university. The campus also provides permanent office and classroom space in the university’s library, which is the student hub of campus. We have grown the matching endowment element of our grant to $1.5 million with a $2 million goal by the end of the grant, and a $10 million ultimate goal.

Student Achievements, Creating Practices with Impact

Student Achievements

- UROC scholars in a series of high-stakes events throughout their time as scholars. Each scholar undertakes two summer research experiences.
- 132 students have presented their work at conferences ranging from SACNAS, to the National Conference on Undergraduate Research (NCUR), the Emerging Researchers National (ERN) conference in STEM underrepresented disciplines, and more.
- This year, scholars took home awards at SACNAS, the Mathematical Association of America (MAA), and the annual Biomedical Literature Conference for Diversity in STEM Research (AMCDSB) and the Association for the Sciences of Limnology and Oceanography (ASLO). Many scholars co-presented, authored, or participated in panels at these conferences.
- Including the NSF Graduate Research Fellowship Program (GRFP), the Barry Goldwater Fellowship, the EnvironCle RISE Fellowship, and the CSIT Professional Program.
- UROC students have published 20 articles in peer-reviewed journals.

Mentor Training

Each spring, along with our partners at the University of California, Santa Cruz (UCSC), we host a Mentor Training workshop for graduate students interested in having their mentoring skills in academic teaching, advising and undergraduate research. The workshop is offered to students at UCSC, CSUMB, Moss Landing Marine Laboratories, Stanford Hopkins Marine Station and the Monterey Institute of International Studies, who serve as mentors to CSUMB students interested in Marine Conservation Research. This year, scholars took home awards at SACNAS, the Mathematical Association of America (MAA), and the annual Biomedical Literature Conference for Diversity in STEM Research (AMCDSB) and the Association for the Sciences of Limnology and Oceanography (ASLO). Many scholars co-presented, authored, or participated in panels at these conferences.

Future Directions and program staff

- Establish a campus STEM student success center to support the recruitment, retention and graduation of STEM majors.
- Expand and share Mentor training materials based on UROC workshops and best practices.
- Expand our peer-to-peer mentoring program to target students in courses with high fall failure rates and provide early engagement with research and scholarship.
- Engage students in the research dialogue early in partnership with the First Year Seminar program.
- Partner with CSUMB’s nationally recognized Service Learning program to link Research and Service Learning experiences both inside and outside the classroom.

The Undergraduate Research Opportunities Center has been able to institutionalize many of the program described here, and they succeed through the hard work of our staff:
- Megan Racicot, Outreach Coordinator
- Bridgette Clarkson, Ph.D., Curriculum Associate
- Carla Pressey, Ph.D., Research Associate
- Heather Haeger, Ph.D., Assessment and Educational Research Associate
- Bridgette Clarkson, Writing and Professional Communication Associate
- Bobby Quinonez, Administrative Support Coordinator