

MAKING STUDY ABROAD MORE ACCESSIBLE FOR STEM

“In the STEM fields there is a clear realization that to be successful in the 21st century job market, graduates will have to have an understanding of the global dimensions of their field.”

*Jim Galvin,
Director of Opportunities Abroad and Faculty Led Programs,
University of California, San Diego*



TERRADOTTA

There is a lingering misperception among some students in the science, math, engineering and technology (STEM) fields that studying abroad doesn't mix with their major—at least if they want to graduate “on time.”

Institutions that want to increase study abroad participation in the STEM fields need to find programs that offer students coursework that will fit within their major. They need to actively promote those opportunities around campus. And, most importantly, if they really want to increase opportunities and change perceptions they need to do what the best scientists and engineers build careers on: **Innovation.**

INNOVATION IN MOTION

With close to 50% of their 25,000 students studying STEM fields, the University of California, San Diego has proven that STEM and study abroad **do** mix. They've done it through a combination of innovative programs developed by their own faculty and partnerships with a wide range of institutions and programs around the world. They have also made a concentrated effort to demonstrate to students how they can study abroad and still graduate on time.

“If you boil it down, one of the reasons we are successful in sending so many students abroad is that we give them maximum choice,” said Jim Galvin, Director of Opportunities Abroad and Faculty Led Programs, University of California, San Diego.



Battling Misperceptions:

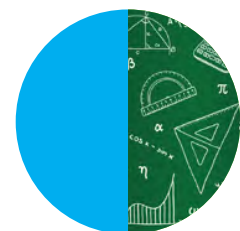
- Keep an open dialogue with faculty.
- Host study abroad training sessions for academic advisors.
- Get returning students involved as study abroad ambassadors.
- Clearly communicate scholarship options.

Meet students “where they are.”

- Study abroad panels.
- Present information sessions in residence halls.
- Host break out sessions at student conferences.

Map and publish paths to graduation.

- Include study abroad options in four year graduation plans.
- Create lists of study abroad transfer courses.



50% STUDYING STEM FIELDS
AT UC SAN DIEGO

A MYRIAD OF OPPORTUNITY

Maximum choice means providing students with myriad ways to go abroad—from study abroad, to research opportunities, to service learning opportunities, and more.



Here are just some of the many ways UC San Diego STEM students are able to blend global experiences into their four-year education.



Research

One of the more unique opportunities UCSD offers its STEM students is its homegrown Pacific Rim Experiences for Undergraduates (PRIME) program, which was founded by some of UC San Diego's leading faculty in 2004. The program provides opportunities for science and engineering students to immerse themselves in a project-based, hands-on international research internship program. Students do intense, graduate level research at various locations within the Pacific Rim including Australia, Taiwan, Japan, China, and Thailand during a nine-week summer program.

"PRIME is a great opportunity for students to gain a true understanding of the global dimensions of science and engineering," said Galvin.

"All of the students who have participated in PRIME have graduated and most have gone on to professional or graduate programs... We are really achieving what we had hoped to do, which is to create the leaders of tomorrow." Additional information can be found at prime.ucsd.edu.



Project-Based Humanitarian Engineering Outreach

Another UC San Diego founded program is their Global TIES program run by the Jacobs School of Engineering. The TIES program combines coursework and project-based research on the home campus with a foray into the field to practice what they have learned while helping those in need. Projects include things like clean water filtration, developing solar powered streetlights, or using sustainable engineering practices to build a much-needed schoolhouse. Additional information can be found at globalties.ucsd.edu.



Internships

In an increasingly global society, it is becoming more and more important for today's scientists and engineers to be able to think and act globally, and understand the nuances with communicating and working with people from other cultures. International internships present a unique opportunity for students to obtain real world experience. UC San Diego offers a number of different opportunities for its STEM students. Here are a few examples:

- **UC EAP Program** – The UC EAP Program offers STEM courses and choice of credit or non-credit bearing internships for UC students only. Additional information can be found at eap.ucop.edu.
- **DAAD Rise** – The DAAD Rise is a German academic exchange/ summer internship program for students in the fields of biology, chemistry, physics, earth sciences and engineering. Students can intern at universities and top research institutions across Germany. Additional information can be found at <https://www.daad.de/rise/en/>
- **IAESTE Internship Placement Program** – The decades old IAESTE Internship Placement Program matches U.S. university students STEM majors with paid internships abroad. Additional information can be found at <http://www.iaesteunitedstates.org>.





Bilateral Student Exchanges

UC San Diego students also benefit from multiple exchange programs. The University of California Education Abroad Program serves the entire UC system, and has offered exchanges for over 50 years. This includes excellent opportunities in STEM fields.

They are currently looking at expanding these programs to specifically identify additional bilateral exchanges between UC San Diego and other Universities abroad where UC San Diego faculty are already conducting research.

“We would be building on existing connections between our faculty and the international faculty abroad,” said Galvin. “We are still negotiating and working to develop these options.”

Since these are more extended programs, typically lasting for a full semester to a year, students can become fully immersed in the culture of the host country. They can also be significantly less expensive than their traditional study abroad program counterparts.



Embedded Programs

Dr. Kirk Simmons, the Dean of the International Center at UC San Diego, is launching several new initiatives to internationalize the campus. Embedded programs are one part of this strategy. These programs will combine a course on campus during winter or spring quarter, followed by a faculty-led abroad experience that incorporates education excursions into the syllabus.

“What this will do is allow both students and faculty who don’t have time to go for a summer or a full semester the ability to participate in a global learning or teaching experience. It is much more difficult for the faculty in the STEM fields to get away because they are often tethered to their labs,” said Galvin.



Hybrid Programs

Another example of a way to attract more STEM students to study abroad is hybrid programs that combine overseas coursework with either a research learning or internship experience. Although the language coursework may fall outside the requirements of the major, the hands-on field experience is invaluable and will help differentiate students who participate from others during the highly competitive medical school application process. A classic example of this would be a public health program in Latin America, where a pre-med student could take a medical Spanish language course, take public health courses, and get hands-on experience doing a service-learning program at a public health clinic.

Another example is UC San Diego’s faculty-led summer Global Seminar in Amman Jordan, where undergraduate students conduct field research in UN refugee health clinics while studying public health and epidemiology from a UC San Diego medical school professor.

UC San Diego students have options that include programs they sponsor themselves as well as a number of third party international education organizations accessible through the Opportunities Abroad Program. Examples include MSID in Ecuador, AIFS, API & ISA in Costa Rica, and IES in Chile.



MAPPING A COURSE FOR THE FUTURE

Some of the programs listed above came about after years of planning. Others are the result of finding the right partners. UC San Diego's rich STEM background and long tradition of promoting study abroad on campus make it a good model to follow.

Asked if he had any advice for schools that want to expand their study abroad participation among STEM students, Galvin stressed the importance of collaboration:

“We are fortunate in that we have a long tradition of promoting study abroad on our campus. We have partnered with many organizations for 25 to 50 years. My best advice for a university just starting out is to join the Forum on Education Abroad and NAFSA to learn about standards and best practices in the field.

Having conversations between the study abroad office, the faculty, academic departments, colleges, and the study abroad organization will allow you to create a list of good programs that can be integrated into the curriculum. Some schools create an approved list. Others will be more broadly open. However it is the collaborative series of discussions with the faculty, senior university leadership, the international center team, and campus partners like academic advisers, career counselors, and residential life staff that really builds the essential support for STEM students who want to study abroad.”



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ABOUT TERRA DOTTA

Terra Dotta is committed to effective process automation and the secure management of data. The flexibility and robust features have made our software essential to all types of organizations. Terra Dotta's international education roots and innovative software capabilities serve the complex needs of many educational and business offices.

Terra Dotta software simplifies your everyday processes from the way you access information to the way you gather data and create reports. Risk management capabilities are an integral aspect of the software, providing the ability to locate and communicate with your applicants and travelers worldwide. Simply put, Terra Dotta software allows you to realize the full potential of your data and use the software your way at your institution.