

# Investing in the future of STEM in Baja California



**The Center for U.S.-Mexican Studies partners with leaders from higher education institutions and the private sector to build the STEM talent pipeline in Tijuana**

By GPS Communications | GPS News



With the growth in advanced manufacturing and software development in Baja California, there is an increased need for a highly skilled STEM workforce.

Over the last 18 months, the [Center for U.S.-Mexican Studies \(USMEX\)](#) at the UC San Diego School of Global Policy and Strategy (GPS) has worked with partners

from the private sector and education institutions in Mexico to jumpstart the talent pipeline. Efforts take a holistic approach to workforce development, identifying opportunities to support students in middle school, high school and college.

Pilot projects with K-12 students have focused on motivating and preparing youth for careers in STEM. For example, The STEM Dream Team works to raise the profile of careers in software development for young people in Tijuana by visiting local schools to share age-appropriate activities. UC San Diego researchers collaborated with top employers in software development in Tijuana to design these STEM activities.

In order to facilitate a smooth transition for university students from college into the workforce, new mechanisms now increase touch-points that connect students to industry. These include innovation challenge competitions - among teams composed of both students and employees from private sector companies - and capstone software development projects undertaken by students on assignment for companies who know what the market is seeking.



“The talent pipeline problem is not unique to this region. We believe that the strategies we are undertaking together represent a valuable model for partnership that can be applied more broadly to workforce development across Mexico and globally,” said Melissa Floca, associate director of USMEX.

UC San Diego faculty have also shared their expertise with faculty members in Tijuana through executive education courses on applying best practices in computing education in the classroom, employing modern software engineering approaches, mentoring small student development teams and connecting software development to the life sciences.

“To date, we have received significant interest in our work on both sides of the border,” said Rafael Fernández de Castro, professor and director of USMEX.

“This is an opportune time to scale the model of cooperation we are developing.”



The ENLACE summer research program is UC San Diego’s flagship educational effort of the [CaliBaja Center for Resilient Materials and Systems](#) to support talented high school and college students in pursuing careers in STEM and is a cornerstone of these efforts. The program brings over a hundred high

school and university students from the CaliBaja region to the UC San Diego campus each summer to engage in STEM research alongside leading faculty.

“We are committed to using this portfolio of projects as a mechanism to organize the efforts of relevant stakeholders around strategies that can provide meaningful support to students in the region,” said Olivia Graeve, Jacobs School of Engineering Professor and the founder of ENLACE.

This suite of projects is part of a larger effort at USMEX to identify big ideas that have the potential to foster student success and test those ideas for feasibility to prepare them for scale with appropriate partners. The emphasis on robust collaboration between academic institutions and the private sector cannot come at a better time, developing the STEM talent pipeline as well as deepening the economic integration of the border region.