

Innovation on both sides of the border

By Eduardo Macagno
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In the midst of debates over the problems of immigration and border security, it's easy to lose sight of the tremendous benefits that result from San Diego's proximity to Mexico.

While we share a border that has long generated political tensions between our two countries, we have also begun developing economic ties and an infrastructure for innovation with the Baja California region of Mexico that transcends the international border.

For example, of the more than 60 biomedical device firms in Baja, at least 13 have their headquarters in San Diego or significant business activity in our region, according to a recent report by San Diego Dialogue titled "Borderless Innovation." In addition, 17 percent of U.S.-Mexico border crossings occur in the San Diego-Baja region, making it the most frequently crossed border in all of North America.

Over the past 20 years, a remarkable transformation has been taking place on both sides of the border. San Diego, which was once highly dependent on tourism and national defense, now has a diverse economy and is a leading center for biotechnology, communications and software development. At the same time, the economy of Baja California has been growing and diversifying rapidly; current strengths include biomedical device manufacturing, pharmaceuticals and clinical research, aerospace and defense and marine biotechnology.

Many of the knowledge resources and intellectual property critical for the revitalization of the regional economy were generated by the University of California San Diego and its world-renowned neighbors on Torrey Pines Mesa: the Salk Institute, the Burnham Research Institute and the Scripps Research Institute. For instance, about 120 startups have resulted from UCSD-licensed technology, a significant fraction of local companies.

Lessons learned from the transformation of San Diego's economy was the focus of a recent weeklong conference at UCSD. The conference was organized by UCSD's Division of Biological Sciences in partnership with Universidad del Rosario in Bogota, Colombia, and LASPAU: Academic and Professional Programs for the Americas in Cambridge, Mass. Participants, who were officials from government, business and academia in Colombia and other Latin American countries, learned about the roles of knowledge creation, transferring intellectual property and technology out of the university, state and federal government funding of innovative research, the establishment and funding

of startups by “angel investors” and venture capitalists, and the social and political contexts that foster innovation.

Data presented at the conference by Lewis Branscomb, a professor emeritus of public policy and corporate management at Harvard University's John F. Kennedy School of Government, underscored the importance of local innovation in driving economies. Three-quarters of all of the spin-off companies generated from universities and research institutions remain in the home state. Since ideas are the seeds from which strong economies grow, fostering this kind of innovation in Mexico and other countries in Latin America depends on the availability of local expertise. UCSD and other institutions of higher learning in this region must play the critical role in the development of the work force that we need to succeed.

One such effort is a workshop on crop biotechnology, held at the Universidad Autónoma de Baja California in Ensenada, led by Maarten Chrispeels, a professor in UCSD's Division of Biological Sciences, and a team of faculty and graduate students. When the first crop biotechnology workshop was held a year ago, it was enthusiastically received and drew students and faculty from all over Mexico.

Another program, now in the planning stages, could bring about 100 Mexican doctoral students to UCSD over the next decade. The students would earn their Ph.D.s from their home institutions in Mexico, but receive training at UCSD in science or other critical sectors that our Mexican partners want to expand. When the students return to Mexico, their connections with UCSD would provide opportunities for research collaborations that transcend the border. This cross-pollination of ideas would not only benefit UCSD and the students' home institutions, but because they also would stimulate innovation in the region, the communities surrounding these institutions would benefit as well.

The United States is deeply connected economically to the rest of the world. In fact, globalization is a reality that affects us all. We collaborate economically and educationally with countries all over the world, but it is especially critical for us to share our knowledge with our nearest neighbors in Latin America. By generating new ideas and the work force to turn the ideas into innovations, we create the deep roots that allow a strong economy to grow, blossom and improve the lives of our citizens on both sides of the border.

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