Unocal boosts Poly program

New era of research expected in bioremediation of 0il-tainted soil

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A $5.6 million cash donation from Unocal Corp. will likely usher a new era of research for Cal Poly's Environmental Biotechnology Institute, according to renowned local scientist Raul Cano.

A Cal Poly microbiology professor who directs the EBI, Cano said the Unocal gift announced Thursday will broaden the diversity of the students and faculty who take part in the institute's studies to include researchers from outside of Poly.

"There are many institutes in the CSU (California State University), but this is the only one focusing on environmental biotechnology," Cano said. "We're not at the point of bringing students in from elsewhere, but now we can start reaching out to other campuses, for students and faculty.

"(Without this donation) I can say we would have done the same thing, but it would have taken us 15 or 20 more years."

The EBI is a group of Poly faculty and staff who research a variety of biotechnology issues, but focus largely on bioremediation, the science of using natural processes to break down environmental contaminants.

The donation is just the latest stage of a more than three-year relationship between the Cal Poly think tank and petroleum giant Unocal.

The EBI began in 1996 as the brainchild of Cano, who had gained prior national attention for reviving 40 million-year-old bacteria extracted from honeybees fossilized in amber and analyzing tissue in a 5,300-year-old human corpse. His DNA research was credited for inspiring the book and movie "Jurassic Park."

Unocal helped launch the institute with a $1.3 million grant.

The institute, a collaborative research project aimed at developing "environmentally sensitive" technology to aid petroleum companies in restoring contaminated sites, is part of Cal Poly's College of Science and Mathematics.

Cano said the idea for the institute was to provide a means for Cal Poly scientists to conduct research and to get Poly students in on the act.

"We wanted to go beyond the idea of a normal institute and make sure we enhanced the Cal Poly student research experience," Cano said. "At the time, microbiology was shifting focus from medical to environmental, so we focused primarily on bioremediation as a mechanism for removing contamination."

Almost immediately, EBI organizers hooked up with Unocal in what Cano said was a mutually desirable pairing.

"In 1996, the institute was newly-founded," Cano said. "We knew Unocal was undergoing some difficulties (at its Guadalupe Oil Field), and we felt we had the expertise. We gave them a proposal, they modified it to fit their research needs, and we started doing research in November 1996."

Since then, EBI scientists have looked at the organisms involved in bioremediation at the Guadalupe Oil Field and have tried to stimulate the process.

"I think it's been one of the best things about the project," said Gonzalo Garcia, who oversees Unocal's excavation of contaminated sand at the Guadalupe field.

"They have offered a very high level of scientific excellence and highly-skilled people looking at the problems here and finding better ways of doing the cleanup. We started with just baby steps, but the relationship has gone beyond the microbial stuff."

Students and faculty are now researching endangered plants and developing brand new techniques in replanting the contaminated area with native plants that also destroy hydrocarbons in the groundwater.

"It's a truly perfect situation, win-win for both sides," Garcia said. "The third winner is the community."

The EBI has studied outside of Guadalupe, too, Cano said. The institute is almost finished mapping the genome of a common bacteria that may open up new human health benefits. As well, EBI scientists are researching occurrences and possible prevention of food poisoning in dairy products.

But Cano said the institute is proud of the positive impacts it has facilitated in Guadalupe and he looks forward to continued environmental improvement there and more hands-on research opportunities for students.

"We have more than 40 students involved right now, and those are more or less permanent fixtures," Cano said. "We have others who come on board just for a specific project, then move on. We like to get them early, though, so they start their senior projects as sophomores.

"That is what distinguishes our institute from many others. The students are an integral part of the discovery process."