Getting technological discoveries into the real world.

As a doctoral student at UC Santa Barbara, Victoria Broje came up with a better way of sopping up oil spilled on water. Skimmers outfitted with rotating drums are often used to collect floating oil, which sticks to the surface of the drums and is then scraped off into tanks. By adding grooves to the drum surfaces, Broje made them much more efficient at picking up oil.

It was an idea that could make a real difference in the world, but only if Broje’s technology rolled off campus and out onto oceans and lakes threatened by oil spills.

Broje contacted the university’s technology transfer staff, whose job it is to take the technology developed in the university and actually find customers in the real world, she says. Their work paid off when the largest manufacturer of oil spill recovery equipment in the country, Illinois-based Elastec/American Marine, licensed Broje’s drum design in 2006. Dozens of oil skimmers using her technology have been sold in more than 20 countries, according to Elastec CEO Donnie Wilson, and they’re also used in industrial applications and in food processing.

The improved design has been quite successful, he says.

Chalk up another success for the university’s technology transfer program, which links
inventions made at UCSB with companies that may be interested in developing products based on them.

“We get really excited whenever we have a product or a technology that’s meeting an unmet need, solving a problem that the market doesn’t have a solution for, or is a big improvement over what’s already available,” says Sherylle Mills Englander, director of the Office of Technology & Industry Alliances (TIA), which includes the technology transfer program.

Victoria Broje’s drum skimmer technology for cleaning up oil spills, which she developed as a doctoral student at UCSB, was licensed to Elastec/American Marine, which helped her test her design.

Although the university receives income when a company like Elastec licenses technology developed on campus, and from sales of products that use the technology, “we’re not doing it for financial gain,” Mills Englander says, but rather for the public good.

Only one in 400 technologies licensed out of UC—which by the end of the 2008 fiscal year had a system-wide portfolio of nearly 9,000 inventions—has earned more than $1 million, she adds. During 2008, 75 percent of the total system-wide revenue from royalties and licensing fees came from the 25 top-earning UC inventions. UCSB boasts one entry in that list: the laser/water atomic microscope, disclosed in 1989, which generated nearly $1.2 million in revenues during the 2008 fiscal year.

“If an invention hits, it can hit very big,” Mills Englander says, “but statistically that’s very unlikely.”

UCSB earned nearly $6 million in licensing fees and royalties in the 2008 fiscal year,
and 103 new inventions were disclosed, bringing the campus? portfolio to a total of 611 inventions. UCSB held 316 U.S. patents as of the end of the 2008 fiscal year.

?We?re doing much better than I expected, given the catastrophic level of the economic meltdown,? Mills Englander says. ?Now our deal pipeline is starting to warm up a bit.?

UCSB currently has several hundred technologies on offer for licensing, and the TIA website includes a searchable database of available innovations. They include a cheap way of detecting melamine, which in 2007 killed scores of pets that ate imported pet food tainted with the toxic chemical; a new moisture-resistant adhesive that could be used to close wounds; and a way of detecting smuggled uranium and plutonium.

Mills Englander and her colleagues seek out marketable technology and ideas by attending campus events, monitoring press releases, networking with campus administrators, and ?we?re not averse to knocking on the door of a researcher we think is doing something very interesting,? she says.

Most leads, however, come from the faculty members themselves, Mills Englander explains. At UCSB, faculty are ?very willing to work with us? to become partners, not just passive creators.?

The TIA staff members take the lead in assessing the potential of a researcher?s work? checking that it?s novel and useful? and in filing for a patent.

?All I had to do was review the patent application a couple of times for technical accuracy,? says Broje, who now works for Shell Projects and Technology as a Spill Response Specialist. ?It was a very comfortable process.?

To find markets for technology developed at UCSB, Mills Englander and her colleagues monitor industry trends and needs and reach out to companies that might be interested in the research coming out of UCSB.

Again, money isn?t everything, Mills Englander says. ?We?re not solely maximizing our profit. We?re looking for companies in the best situation to successfully create a product and get the product into the marketplace.?

?TIA is a good group to work with,? Wilson says. They also try to build strong alliances with licensees so that the companies might buy more technology from UCSB, or support the university in other ways, such as sponsoring research. Wilson says that since licensing Broje?s technology, he?s talked to a number of other UCSB researchers and is now advising a group working on ways of capturing plastic debris floating in the ocean.

The UCSB Corporate Affiliates program helps foster long-term relationships between companies and the campus, says Leslie Edwards, director of corporate development, by making connections with companies whose focus and philosophy fits well with UCSB.

Last year Corporate Affiliates staff visited more than 50 companies? nearly all in California? and arranged 27 ?research visits? at which industry representatives spent a day listening to presentations by UCSB faculty members about research on campus. Generally, about a third of such overtures lead to continuing relationships, Edwards says. The university currently has about 40 corporate affiliates, including Pfizer and
Northrop Grumman.

Roughly one in every five companies that licenses technology from UCSB goes on to support other research at the university, Mills Englander says, and these collaborations offer benefits beyond funding.

As an example, before Elastec bought the rights to Broje's technology, the company provided her with a skimmer to experiment with, and helped her conduct large-scale tests of her drum design. The collaboration aided her research, Broje says, and the resulting patent looks good on her curriculum vitae and on her wall.

Links:

- UCSB Office of Technology & Industry Alliances: Technology transfer program
- UCSB Engineering and the Sciences Corporate Affiliates Program

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