



## Berkeley Lab Courts Venture Capitalists, and the VCs Come Calling

— *By Julie Chao (Creative Services Office)*

It should be a match made in heaven: Berkeley Lab has the technologies that will help solve the climate change problem; venture capitalists have the money to bring those technologies to the marketplace.

So couldn't there be more startup companies emerging from the Lab? Well, if efforts by the Department of Energy and the Lab's own Technology Transfer Department pay off, there soon will be.

For starters, the DOE's Office of Energy Efficiency and Renewable Energy (EERE) held a two-day event in Washington, D.C. to showcase its research programs to VCs in hopes they would invest. "EERE is very serious about commercializing their technologies," says Robin Johnston of the Tech Transfer Department, who was the Lab's sole representative at the event. "They're trying to bridge the gap between the language and the environment that scientists are used to and the language and the environment that business people are used to. They really wanted to start a two-way conversation."

The interest was two-way as well. Almost 80 VC firms from around the country attended, more than triple the number of last year, when the first such showcase was held. "I see the DOE and the national labs as a tremendous resource and also a national resource to help develop technologies that can help bring us the right solution in energy and climate change," says Jim Matheson of Flagship Ventures, a Cambridge, Massachusetts-based VC firm. "There's still a long way to go, but I've been very impressed with how far the DOE has come in terms of thinking commercially and relating to the entrepreneur community."

The official agenda of the showcase consisted of EERE program managers making presentations on the cleantech research programs in areas such as wind, solar, biomass, hydrogen fuel cells, and building technologies. (The Lab's Environmental Energy Technologies Division [EETD] gets much of its funding from EERE.) Unofficially, it was a chance for everyone to learn: the DOE learned from VCs about market requirements, the VCs learned about new technologies as well as what their competitors might

be interested in, and LBL had the chance to reinforce its interest in VC exchanges.

Already, just days after the showcase, held in the first week of August, Johnston's attendance has started to bear fruit. Two well-known VC firms—Khosla Ventures and Greylock Partners—have requested follow-up visits to Berkeley Lab to investigate specific cleantech research programs.

Here in Berkeley, the Lab is getting ready to launch two programs intended to generate more spin-offs from Berkeley Lab technology. In one, a collaboration among Tech Transfer, EETD, the Berkeley Energy & Resources Collaborative (BERC), business, law and policy students will form teams to evaluate Lab technologies and develop commercialization plans.

In the second program, the Lab would invite someone with entrepreneurial expertise “not just for an afternoon, but for one day a week for at least several months,” says Cheryl Fragiadakis, head of Tech Transfer. “They could then really get to know scientists in a particular area. We'd just provide a desk and a telephone.” While learning about and evaluating technologies that might provide the basis for a new start-up, the entrepreneur could also be a resource for scientists or students who are curious about an idea's market potential or simply what is involved in starting a company.

A similar “entrepreneur-in-residence” program was started earlier this year by EERE, in which three entrepreneurs backed by venture firms were chosen to work with the National Renewable Energy Laboratory, Sandia National Laboratory, and Oak Ridge National Laboratory to assess their technology, evaluate the market opportunities, and have the option to license any technology. “Although I think the program has flaws, it's a step in the right direction, realizing the role of entrepreneurs,” says Matheson.

Over the years, 25 startup companies have emerged from Berkeley Lab, the most recent of which was Seeo, a battery technology company with investment by Khosla Ventures. “There's tremendous support for us really aggressively increasing our number of start-ups,” says Fragiadakis.

One sign that commercialization is poised to grow is the significant increase in inventions disclosed. While the number of inventions had remained stable at about 70 per year for many years, in the last couple years it has jumped up to about 125 per year, thanks in large part to Lab Director Steve Chu, who has made it clear that he values such activity.

“Those messages are really resonating,” Fragiadakis says. “This year we’re on track to have the largest number of disclosures we’ve ever had.”

Licensing revenue has also been growing steadily, by more than 10% a year, and reached \$3.2 million in the 2007 fiscal year, of which \$1 million went to individual Lab inventors. .

To be sure, challenges remain. Technologies at the Lab are very early-stage, whereas VC firms have traditionally preferred to invest in something that is proven. More funding for commercialization efforts, such as to build prototypes and do testing, would help reduce the risk for investors.

Another challenge is divergent goals. Scientists are often more academically minded than commercially minded, meaning they are concerned more with publishing than inventing and protecting that invention with a patent. “Venture folks aren’t going to start a company unless they have strong intellectual property,” Matheson says. “So investing in commercialization efforts needs to include investing in writing and maintaining good IP portfolios.”

More broadly, cultural differences remain. “There’s still a huge cultural challenge of working with research labs generally, but especially those research labs that have been sequestered by the government for decades,” says Matheson.

Alex Kinnier of Khosla Ventures puts it this way: “One of the biggest differences is pace. We think in terms of days. You think in terms of months.”

Still, he sees the wait as well worth his while: “The leading work that the DOE has pushed at LBL and the other labs for so many years is really helping fuel the clean technology revolution going on right now.”