

COLUMNISTS

Jumping the curve

Biotech a bright spot in Colorado economy
By Rebecca Cole

Good innovators must be in denial, Guy Kawasaki says. Otherwise, "the bozos will grind you down." That's what the former Apple software evangelist, venture capitalist and author of "Art of the Start" told a crowd of about 200 last week at BioWest 2008.

A humorous and at times acerbic portrayal of how most companies try to innovate (lots of corporate-speak mission statements and waste-of-time off-site meetings — sound familiar?), Kawasaki's luncheon presentation drove home the point that innovation isn't easy.

"You can't wait for a perfect world or opportunities will pass you by," he said. To "jump the curve," he said, is the goal. "Don't just define the curve you are on. If you truly want to be creative, you have to get to and create the next curve."

With the economy in the dumps and job losses piling up across all sectors, bioscience and technology is clearly a bright spot for Colorado. In August, Gov. Ritter approved \$26.5 million in additional funding for biotech grants over the next five years, and some companies jumping the curve now are seeing funding dollars roll in.

Delivering drugs directly to the brain

One company is Sierra Neuropharmaceuticals, winner of the 2008 "Rising Star" award. A University of Colorado spin-out founded in 2006, SierraNeuro developed an innovative technology using implantable pumps placed surgically under the skin to deliver drugs directly to the fluid around the brain via a catheter.

The approach aims to help patients suffering from severe epilepsy, depression, schizophrenia and other neurological diseases who have had to treat their conditions by taking drugs orally, causing potentially toxic and debilitating side effects.

In July, SierraNeuro received \$21.5 million in venture capital series-A financing and is now in the process of beginning clinical trials.

Green around the gills

Another is Oberon, an Idaho Springs-based biotech company developing a renewable process to supply sustainable protein to the aquaculture, or farmed fish, industry. With global fish consumption accelerating rapidly and stocks of wild-caught fish declining, the fish-farming industry is experiencing rapid growth.

The problem is that farmed fish still need to eat — dubbed "feed and breed" by industry insiders. Guess what they eat? More fish; ground up and turned into fish meal — about 6 million tons a year since the 1990s. And as wild fish stocks diminish, the cost for fish meal has skyrocketed. In 1999, the cost for a ton of fish meal was \$350; by last year, the cost had tripled to \$1,050.

"When I first got involved in this, I called up a feed manufacturer and said, 'We're thinking about making this product, would you be interested?'" said CEO Randy Swenson during BioWest's Venture Showcase Competition. "The first thing out of this guy's mouth was that he would take all we could make. So I knew we were on to a good thing."

The showcase judges agreed, declaring Oberon the winner and recipient of a \$10,000 prize. The funding is on top of \$900,000 the company attained during series-A financing last year from Acquacopia, an aquaculture VC firm.

Oberon's model is to partner with industrial food and beverage manufacturers to capture the bacteria used to clean the excess wastewater churned out during the manufacturing process, dry it, and turn it into single-celled protein substitute for fish meal. Known as "sludge," the microbial-rich wastewater is a by-product that industries must treat and then compost or bury in landfills. Oberon's process removes sludge generation, eliminating millions of dollars in disposal costs and adding points to the manufacturer's "green card," according to Swenson.

"Most large manufacturing companies are very interested in renewable programs," Swenson said. "We can offer them a process for that."

Since last year, the company has partnered with local craft brewer New Belgium. Oberon built a small-scale treatment plant to harvest the beer maker's sludge and has manufactured about one ton of the protein fish meal. Recently the company performed a series of tests with Aquaculture Institute of Norway, substituting their product with conventional fish feed.

"At eight weeks, in a sample where we substituted 43 percent with our product over conventional protein, we actually got accelerated growth," Swenson said. "We know that our product will work as a fish-meal replacement strategy."

The company is currently in additional trials with giant feed companies Cargill and Purina to determine how the product works with their feed formulations. Plans for 2009 are to develop Oberon's first full-scale plant and obtain \$10 million in series-B

financing.

From fish feed to oral care

Founded in 2007, Snoasis Medical develops dental regenerative products for use during perio-plastic surgery for recessive gums, or "gingival recession." The fastest-growing segment of the dental industry, gingival recession affects about 25 percent of the general population, said Snoasis' president and founder Rob Tofe.

"Gum recession can be caused by periodontal disease but also by people brushing their teeth too hard," Tofe said. "People are literally brushing their gums away."

Current gum recession treatment options takes two forms, both involving surgery. The first is to slice a piece of tissue from the palate (the roof of the mouth) and graft it to the affected gums -- a painful surgery and prolonged recovery. The second is to graft dermal cadaverous tissue; a very technical and sensitive surgery that most periodontists don't like to do.

Snoasis' instead uses amniotic tissue harvested from consenting mothers during birth via C-section as a source for regenerative tissue. The company has signed a licensing and distribution agreement with Surgical Biologics, the leading provider of amniotic tissue products used in ocular reconstruction, for procurement, processing and final packaging.

The company claims that the product, already tested on 100 people during clinical trials, is painless and easy enough to use that general dentists who place implants can now also treat recession.

"This has become a true lunchtime procedure just like Botox or any other aesthetic invasive procedure," Tofe said.

Tofe said the company currently has 10 periodontists implanting the product, including two in the Denver area, and that he is aggressively seeking new patients. "If you want to be treated, find me and I will do this free. It will help me out, it will help you out."

Visit www.snoasismedical.com or contact Tofe at 303-242-8075 if you want to take him up on his offer.

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