

Growing pains at U.S. Genomics

Scott Kirsner, Globe Staff

When Eugene Chan dropped out of Harvard Medical School in 1997 to start U.S. Genomics, his vision was to create a turbocharged DNA reader. Give the machine a drop of blood, and it would sequence your very own genome. That information would help doctors diagnose not only which disease you were suffering from, but which particular variety of the disease and guide them to drugs and treatments that would work best for you. The concept was dubbed "personalized medicine."

"Personalized medicine" was the buzz-phrase that helped the 20-something Chan and U.S. Genomics raise more than \$50 million in venture capital funding.

Chan talked about reading strings of DNA as rapidly as film spooling through a projector, and he lured Craig Venter, one of the leaders of the commercial effort to sequence the human genome, to U.S. Genomics' board. (Venter, you may recall, humbly chose to focus his company's pioneering sequencing effort on his own DNA.)

But as it became clear that personalized medicine, while a powerful vision, wasn't going to revolutionize the healthcare system overnight, U.S. Genomics entered a wrenching transitional period. I call it entrepreneurial adolescence, which has the following symptoms: The investors get impatient, the founder is booted, a chief executive with more business experience parachutes in, other executives are shuffled, and the company starts searching for near-term revenue possibilities.

All that is happening at U.S. Genomics. Chan initially relinquished the chief executive's post to Steven DeFalco, a former [PerkinElmer](#) executive, and earlier this year, Chan left the company entirely. He's now back at Harvard Medical School. This summer, chief scientific officer Steve Gullans left to take a chief executive post with another company, and there's a search going on now for his successor.

DeFalco has the company focused now on what's called "single molecule detection" -- spotting the needle in the haystack of a scientific sample, and being able to tell exactly what kind of needle it is. U.S. Genomics' fridge-sized device, known as Trilogy, is designed to analyze (and count) individual molecules of DNA, RNA, and proteins. One application, for which the company landed a \$7.5 million contract in May from the Department of Homeland Security, would be identifying anthrax or smallpox molecules in a whiff of air from an office building's ventilation system. DeFalco says that it'd also be possible to identify new kinds of genetically engineered viruses -- which is like finding something else sharp and dangerous in the haystack, even if you didn't know what you were looking for.

DeFalco also believes that Trilogy (list price: \$150,000) will be useful to academic researchers and pharma companies, particularly those working in the emerging field of RNA interference, which seeks to use strands of RNA to switch off disease processes. U.S. Genomics has been growing this year, from 45 to 70 employees, and earlier this month, the company moved into larger office space in Woburn.

"Sooner is better for our investors" when it comes to bringing in revenue, DeFalco says. "But sooner is better for me, too. We're pretty close to our first commercial sale."

It's nice when adolescents get jobs and can start buying their own gas. And it's nice when adolescent companies starting bringing in revenue.

Energetic entrepreneurs Everyone involved says it's too early to write about Project Emergence. "We're discouraging people from talking about it," says Iqbal Quadir, a fellow at Harvard's Kennedy School of Government and the founder of GrameenPhone.

But the concept is too compelling to stash away for later. Quadir is teaming up with New Hampshire inventor Dean Kamen to try to bring Kamen's latest product, an electrical generator that works in tandem with a water purifier, to rural villages in Bangladesh. Also involved with Project Emergence is Richard Golob, chief executive of the Cambridge company GGA Software, and Tawfiq-e-Elahi Chowdhury, Bangladesh's former minister of energy.

Already, a team of engineers from Kamen's company, DEKA Research, have been on a scouting mission to Bangladesh. The plan is to install two of the devices, code-named "Slingshots," in two different villages by the end of this year. Kamen and Quadir want to see if the devices can help create a business for native Bangladeshi entrepreneurs, who'd sell clean water and power to people in their villages; Quadir's last company helped finance the purchase of cellphones in the country, which entrepreneurs then sold time on. (GrameenPhone deployed more than 39,000 of these "village phones," most of which were operated by female entrepreneurs.)

"Our goal is to see if the economic model works, and if the machines work," says Quadir. But there's a big difference, he says, between financing the purchase of a cell phone and a combination electrical generator/water purifier that costs approximately \$70,000 to build right now. The generator can burn just about any fuel, from wood to cow manure, and it produces 500 watts of electricity.

Quadir says that he is "interested in technologies that empower little people, that promote democracy and economic growth." Shouldn't we all be?

The pilot test should begin in December, and run about six months.

Shanghai bound And in other global technology news:

Adam Bornstein believes that China presents a big opportunity for venture capital investing, but not if you try to invest from afar. So Bornstein, a recent graduate of Boston University's international management program, is moving to Shanghai next month.

Western VCs, in Bornstein's opinion, don't find out about the best Chinese start-ups until they're too far along. "These guys are investing in companies that are already pretty mature," he says. "They're just barely pre-IPO, and the returns haven't been wonderful. There are no organized seed funds that are solely based in China."

So Bornstein is pairing up with Frank Chen, a former vice president of the Chinese Internet portal Sina.com, to launch the Ymer [Greater China Fund](#).

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Bornstein already has secured a commitment from the Shanghai Science and Technology Investment Corporation, a government-backed VC firm, for \$3 million, and he's hoping to raise another \$1.5 million to \$2 million from US venture firms and individual investors.

Bornstein, an Osterville native who speaks Mandarin, was earlier part of the founding team of Boom.com, a Hong Kong-based online brokerage.

"We're looking at wireless technology, e-commerce, and software," Bornstein says. "I think our first deal will be focused on social networks," software that tries to leverage users' personal contact networks.

Bornstein hopes to invest in local entrepreneurs starting companies around Beijing and Shanghai, but he also wants to lure Chinese-born entrepreneurs living in the United States back to their homeland, to take advantage of their experience in the US business world.

"There's a real opportunity to invest in these guys who got educated over here, became entrepreneurs, and want to go back overseas," Bornstein says.