

## GENENTECH

By Jacquelyne Kious

What does it take to create an entire industry?

The ingredients: knowledge, expertise, credibility, tenacity, capital, and naiveté

The outcome: the birth of biotechnology

“I think if we had known about all the problems we were going to encounter, we would have thought twice about starting..., said Herb Boyer Genentech co-founder. Naiveté was the extra added ingredient in biotech.” (*Hughes, Genentech, 2011*)

Like the birth of the computer industry some 25 years earlier where a small group of innovators and risk takers would literally change the world, the birth of biotechnology had its own innovators and risk takers intent on changing medicine as we knew it.

In 1975, venture capitalist Bob Swanson of Kleiner Perkins attended a meeting where a new technology called recombinant DNA (rDNA) was presented. Swanson called rDNA revolutionary.

While Swanson and Kleiner Perkins soon parted ways, Swanson’s faith in the new technology and the desire to start his own company led him to call UCSF scientist Herb Boyer, a pioneer in the field of rDNA. A reluctant Boyer agreed to a 10 minute meeting which turned into three hours ending with a partnership to pursue the viability of rDNA. Genentech (**GEN**etic **EN**gineering **TECH**nology) was born in April 1976.

Genentech had no employees, no labs, and no sustainable funding, nor had the technology ever been tested outside academia, but Swanson persevered in raising funds for research amidst a national debate over the safety of rDNA.

Swanson approached his former company, Kleiner & Perkins. His enthusiasm and tenacity along with Boyer’s clear, concise explanation of the science worked. Kleiner Perkins was in with an initial \$100,000 investment. Tom Perkins, Boyer, and Swanson formed Genentech’s board of directors.

In 1977, Boyer and a team of scientists embarked on a project to prove the validity of rDNA. After months in the lab, the team succeeded in producing the first human protein. This breakthrough and the resulting enthusiasm it generated led to Genentech raising \$850,000 allowing the company to hire scientists and rent “cheap” office space in a warehouse in SSF.

Insulin would be Genentech's first attempt at developing a marketable rDNA drug. For decades the source of insulin was pigs and cows. Knowing the supply of animal insulin was finite, a race to produce human insulin began between Harvard, UCSF and upstart Genentech. Leveraging their experience in producing human protein, Genentech won leading to a contract with Eli Lilly (the major producer of animal insulin) and much needed funding. It was also the start of Genentech's incredible success and assured its reputation as a leader in the biotechnology industry.