Bayer's Bay Area formula

By Stephen Parmley, Senior Writer

Less than four years after setting up shop near the **University of California, San Francisco's** Mission Bay campus, **Bayer AG** is calling both its U.S. Innovation Center and CoLaborator incubator there successes and expanding the model to Berlin. The winning formula, it says, comes from creating direct alliances with academics and startups and not in ponying up buckets of money.

Compared with several other pharmas—including **Johnson & Johnson**, **Pfizer Inc.** and **Merck & Co. Inc.**, which have all pledged between \$17 million and \$247 million each in their external innovation strategies¹⁻³—Bayer is tiptoeing into the realm of academic innovation with few dollars down and a strategy built around collaborative relationships with researchers and startups.

The roots of Bayer's U.S. Innovation Center go back to the pharma's 2006 acquisition of Schering AG's research facility in Richmond, Calif. In 2011, Bayer downsized the Richmond group to a 65-member research team and moved it to smaller facilities in Mission Bay. Shortly after the relocation, Bayer established ties with UCSF through a master contract that nails down the key issues of IP and publication.

Christopher Haskell, head of Bayer's U.S. Science Hub, told *SciBX* that under the agreement the IP is owned by whichever side creates it. UCSF researchers with relationships to Bayer can work on the company's proprietary compounds but are required to get consent before publishing. However, the academics also have access to Bayer's tool compounds from the pharma's drug discovery programs and can publish freely on those.

Like many pharmas seeking to tap into academic innovations, Bayer wanted to create a two-way path between university researchers and Bayer scientists. Rather than starting out by directly funding specific projects, Bayer began by removing the complicated partnering contracts that are one of the main headaches for academics in doing business with companies.

Terry Hermiston, VP of biologics research at Bayer's U.S. Innovation Center, told *SciBX* that the agreement process has historically been a roadblock to timely interactions. "By the time you signed the contract the innovation was yesterday's news," he said.

According to Hermiston, easing publication restrictions on academics while covering IP is the nub of the master agreement with UCSF. "Publications are their lifeblood, and if we are going to be

successful, we need to eliminate that piece where they can't publish until the patent is granted," he said.

For the first two years, Bayer's U.S. Innovation Center tested the waters of the new collaboration arrangement through a single pilot project with a key UCSF researcher. The center's primary mission is to enable innovative drug discovery collaborations between Bayer scientists and academics, but Bayer also wanted to access innovation from startups. So in 2012, Bayer opened its CoLaborator incubator space to provide entrepreneurs with basic laboratory facilities and access to Bayer scientists.

Two years on, Bayer has tripled the number of startups in residence and increased its UCSF collaborations eightfold.

Robert Stroud, a professor of biochemistry and biophysics at UCSF, was one of the first Mission Bay academics to take advantage of the streamlined process and enter a formal collaboration with Bayer to work on a membrane protein that is a cancer target and particularly difficult to express.

Hermiston told *SciBX* that Bayer chose Stroud to test-drive the collaboration model because there was a natural synergy between the pharma's expertise in producing proteins and his prowess as an X-ray crystallographer that would enable Bayer to readily derisk the project.

According to Stroud, the collaboration led to the determination of the atomic structure of a key membrane protein in cancer at a resolution that was good enough to help Bayer's medicinal chemists improve their drug discovery efforts. His lab will also be publishing structures of the same membrane protein determined using Bayer tool proteins.

"In our first collaboration with UCSF's Bob Stroud, there were no funds exchanged, and both sides were quite happy with what the other was bringing to the table," Haskell said. "The value in our collaborations is our shared expertise, not funding. This has since expanded to a funded research program."

Haskell told *SciBX* that the goals of the alliances are varied and not necessarily related to specific technologies or compounds that Bayer is seeking to license. "Our collaborations are designed to jointly explore new areas of research, and our agreement allows for the flexibility often needed in research projects," he said. "Often they are exploring biology where the discoveries are made by both sides."

Cozy incubator

Although Bayer is not putting any money into the newcos in its CoLaborator or taking any equity, it provides the startups with laboratory infrastructure, including tissue culture hoods, CO₂ incubators, centrifuges, water baths, microscopes, freezers, liquid nitrogen services and licenses for biohazardous waste pickup and chemical disposal. It also creates opportunities for newcos to network with venture firms and other pharmas to get them to the next stage.

The first two companies to rent space in the CoLaborator were **ProLynx LLC** and **Aronora Inc.** Aronora is developing compounds

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that prevent blood clotting—one of Bayer’s key therapeutic areas—while ProLynx’s technology extends the half-life of drugs.

Daniel Santi, president of ProLynx and professor of pharmaceutical chemistry at UCSF, told *SciBX* that instead of losing time setting up and equipping labs, a startup can go to an incubator and focus on innovation. “We were able to get in there and get moving on the science in a matter of a week or so.”

According to Santi, ProLynx was selected as the first tenant because its technology was a good fit with Bayer’s focus on biologics. After moving into the CoLaborator space, his company partnered with Bayer to use the ProLynx technology to extend the half-life of a very difficult undisclosed therapeutic protein. They are now about to initiate a second collaboration, he said.

The CoLaborator is now at capacity and has also rented space to **Xcell Biosciences Inc.**, **Cairn Biosciences Inc.**, **Factor 14 Inc.** and **Singular BIO Inc.** “The number at capacity varies depending on the size of the companies in there,” said Haskell. “We are designed to allow companies to expand in the space, a benefit for startups that can grow quickly.”

Bayer partnered with Xcell on isolation of pancreatic tumor cells and facilitated partnerships with other companies and VC firms. Xcell CEO Brian Feth told *SciBX* that Bayer created opportunities for the company to network with other groups. “Their goal was to make sure

that we were connected not just with relevant folks at Bayer but also the larger Bay Area bioscience community,” he said.

Haskell said that the success of CoLaborator and the UCSF collaborations was a key factor in Bayer’s decision to launch a second incubator in Berlin. He did not rule out expanding in Mission Bay in the future but said that a second incubator in Berlin allows Bayer to tweak its model and leverage innovation close to its own research hub.

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3. Boettner, B. *et al.* *SciBX* 7(29); doi:10.1038/scibx.2014.849

COMPANIES AND INSTITUTIONS MENTIONED

Aronora Inc., Portland, Ore.

Bayer AG (Xetra:BAYN), Leverkusen, Germany

Cairn Biosciences Inc., San Francisco, Calif.

Factor 14 Inc., San Francisco, Calif.

Johnson & Johnson (NYSE:JNJ), New Brunswick, N.J.

Merck & Co. Inc. (NYSE:MRK), Whitehouse Station, N.J.

Pfizer Inc. (NYSE:PFE), New York, N.Y.

ProLynx LLC, Hayward, Calif.

Singular BIO Inc., San Francisco, Calif.

University of California, San Francisco, Calif.

Xcell Biosciences Inc., San Francisco, Calif.