Pharma Seeks a Drug Discovery Fix

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The drug discovery business is going through tough times. Drug candidates aren't moving through the pharmaceutical industry's pipelines fast enough. Meanwhile, entrepreneurs struggle to get the funding they need to bring their new ideas to fruition. These issues are driving new alliances and partnerships between academic researchers, venture capitalists, and big pharma, but whether the new models will solve the problem was a question on the minds of many of the 15,000 attendees at this week's BIO International Convention [1] in Boston.

The themes are familiar: venture capitalists are limiting their investments in biotech, in part because it's hard for fledgling life-science companies to go public, and although big pharma is desperate for innovative ideas and depends heavily on small biotechs for new drug candidates, these larger companies don't want to take on risky, early-stage projects. The new alliances, some of which involve direct collaborations between pharmaceutical companies and academics, are a response to what one panelist called this "crisis."

"We need one another," said James Sabry, Genetech's vice president of partnering [2], at a Monday session on financing new drug candidates. "Every pharma company needs biotech in order to access innovation that is either closer to a university or at some early stage of a biotech company, and at the same time, biotech needs pharma because of large capital needs to develop a compound."

The funding drought is not expected to end anytime soon. The number of biotech companies receiving first-time venture capital has fallen to the lowest number seen since the 1990s, according to the National Venture Capital Association [3]. A survey [3] by the group also found that U.S. venture capitalists will continue to decrease investment in biotechnology and medical-device startups.

New technologies and concepts have brought about a revolution in the life sciences in the last decade, yet "pharma is struggling to capture that and translate it into new therapeutics," said Anthony Coyle of Pfizer at a Wednesday session on early-stage collaboration.

Coyle heads Pfizer's Centers for Therapeutic Innovation [4] program, which has established collaborative labs in four academic centers in California, New York, and Massachusetts; it aims to steer early-stage ideas and eventually turn them into drug candidates. Coyle said that past partnership efforts "met with mixed results" and did not provide long-term value to pharma or academia. However, the nearly two-year-old CTI effort takes a different approach, with ownership of intellectual property and candidate drugs shared evenly between universities and Pfizer. "Only if we are successful do we exercise our options to develop those drugs," he said.

"For people who spend their whole career curing diabetes and cancer in mice, [this

program] allows you to see your idea translated from innovation into the clinic," said Coyle.

Other models of collaboration are also being discussed. Janssen Research and Development [5], a subsidiary of Johnson & Johnson, recently partnered with the Boston-area venture capital group Polaris in search of early-stage biotech companies.

"We are concerned about the pool of available products and companies that will help our future growth and our patients," said Michael Elliott, entrepreneur in residence at Janssen Pharmaceuticals. "There is always pressure to fill the pipeline." But new drug targets are hard to find, and given the tenuous nature of the biotech industry, "we are concerned whether those assets will be there in the future," Elliott said.

Other pharmaceutical companies, including Merck [6] and Sanofi [7], have also partnered with venture capitalists, looking for better access to early-stage research. It may be years before the results of the partnership experiments are revealed. But given pharma's problems with innovation, will the leviathan companies squash the entrepreneurial spirit they seek?

That is a potential danger, agree biotech leaders like Sean McCarthy, CEO of CytomX [8], a startup developing antibody therapeutics. "There is a risk that when pharma comes in, it has the potential to stunt the very innovation they need," he said.

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