

Interview: MIT biotech pioneer Bob Langer on how to avoid the “valley of death”

I recently interviewed Bob Langer—MIT biotech guru extraordinaire—on behalf of the EBD Group, which holds international partnering conferences for the life sciences six times a year. Here’s the opening...and [a link to the rest, on the EBD Site](#). The piece will also appear in xconomy shortly. Full disclosure...Bob is a personal friend, former classmate, and a member of the Harris Communications Group advisory board...so this should be considered a sponsored post.

—Anita M. Harris



When Bob Langer joined the MIT faculty in 1977 he had a rocky start. Trained as a chemical engineer and working on drug delivery systems, many of his ideas went against conventional wisdom. “I had people write the most insulting things about my knowledge of biology and medicine. Many thought my ideas were crazy. A number of professors wanted me to leave and my first nine grant proposals were turned down.”

Eventually, after numerous academic scientists and companies repeated and used his work Langer was able to get grant funding from the NIH. He also turned to companies for research

funding—in return for licensing his patents—which, at that time, also went against the conventional grain.

Today, Langer is one of 13 Institute Professors (being an Institute Professor is MIT's highest honor) at Massachusetts Institute of Technology. With more than 1,400 articles to his credit, he is the ninth most cited individual in history, according to Google scholar. (Sigmund Freud is first). His 1,300 patents, licensed or sublicensed to more than 350 companies in pharmaceutical, chemical, biotechnology and medical device fields, have led to more than 100 products currently in use or in clinical trials. He has received more than 220 major professional awards including the Queen Elizabeth Prize for Engineering, Priestly Medal, National Medal of Science, National Medal of Technology and Innovation, the Charles Stark Draper Prize (considered the equivalent of the Nobel Prize for engineers), and the Lemelson-MIT prize for being “one of history's most prolific inventors in medicine.” In June 2018, he was named a US international envoy for science by the US State Department.

Despite his success, Langer remains well aware of his early setbacks, and, as a scientific advisor to some 200 companies over the past 40 years, is highly cognizant of what can go wrong.

“You can have bad animal results, failed trials, or patent problems. I've seen partners pull out, companies take bad loans, and the FDA create delays. Stumbling blocks can arise anywhere along the way,” he says.

One of the most difficult problems can occur early on “when a researcher has good findings but is not far enough along for investors or companies to want to spend a lot of money.” In that situation, known as “the valley of death,” Langer says, “the question is how to get enough data so that will change.”

[More:](#)

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New Cambridge Observer is a publication of the [Harris Communications Group](#), also in Cambridge.