Robert Langer's reach touches New England biotech scene

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It’s hard to talk to someone who knows MIT inventor, scientist, professor, humanitarian and entrepreneur Bob Langer without bumping into superlatives.

Take Terry McGuire, for example, who is a life sciences luminary in his own right. The managing partner at Polaris Venture Partners has described Langer as both “a force of nature” and “a national treasure.”

Langer’s resume parallels that of the biotechnology industry itself. His patents run the gamut: tissue regeneration, brain cancer, drug delivery, diabetes, alcoholism treatments, you name it. Through licensing or sublicensing, his intellectual properties are the backbone of some 220 companies — by his own estimate — both large and small. A 2004 Mass High Tech All-Star honoree, he is also an Institute Professor at MIT, the highest faculty honor. To name just a few of his other accomplishments, in 2008, he won the prestigious Millennium Technology Prize, for biomaterials development work. That same year, he took the 2008 Max Planck Research Award, for his biomimetic materials research.

He hasn’t yet transmuted lead to gold, but he has demonstrated a Midas touch when it comes to private equity fundraising. In 2010 alone, despite a cash-starved environment, Langer-connected biotech startups received millions. They include diagnostics developer T2 Biosystems Inc., based in Cambridge; Langer co-founded Arsenal Medical Inc., based in Watertown, which uses bioactive composite materials to treat diseases; and Langer-advised Stemgent Inc., a stem cell research and technology firm in Cambridge.

Then there is the personality — or so say his partners, students, and collaborators. “The thing that’s most striking about Bob, is that, with all the success, he’s the nicest person I’ve ever met, just a real individual and a real person, as opposed to anything else,” said McGuire. Polaris has been working with Langer since the early 1990s.

Langer is known for saying that if you solve a human problem, the money will inevitably follow. He takes that to his interpersonal relationships as well.

“One thing: He is completely human committed,” said Frank Reynolds, CEO of InVivo Therapeutics Corp., a Cambridge biotech developing Langer-originated spine-treatment technology. “If you gave him a trillion dollars to cure a thousand things, he’d just be so excited, he’d do it.”

Always the teacher

While he says his role is foremost a teacher and mentor at MIT, his business roles

vary. Sometimes he's a guide to students looking to move from the lab to the market. Sometimes he wants to launch a company with his lab's IP and then serve on the board as a director or adviser. Large companies have sought his capabilities — for instance, he sits on the board of life sciences giant Millipore Corp., being acquired by Merck KGaA. He likes a hands-off management approach. Langer says, "I don't like to give orders. I like people to do well because they want to do it, not because I tell them to do it."

"He looks forward while concentrating on the problem at hand," says Amir Nashat, a general partner at Polaris and a former Langer student himself. "He has the ability to be extremely thoughtful and graceful in the way he gives advice and constructive criticism." He's an effective and savvy board member, said Nashat, knowing when, for instance, a startup needs nondilutive financing or when it should focus on research and development. Nashat has worked for a Langer company and, as a VC, has funded other Langer enterprises.

Although Langer himself is a chemical engineer by training, he has a made a career by cross pollination between disciplines, starting with his collaboration with the legendary cancer researcher Judah Folkman. And while his companies have had varying success rates, Langer insists he doesn't play favorites.

"It's hard to say which company I like the best," he said. "It's like when people ask you, 'Which child do you love the most?' I'd hesitate to say. I'm proud of them all." He says he appreciates different milestones in each company: That includes receiving U.S. Food and Drug Administration approval or seeing a company make an exit through IPO or a merger. He emphasizes that those firms have helped patients and created jobs.

Langer's stated preference has been toward platform technology rather than one-off products. Right now, he's excited about nanotechnology and RNAi science for targeting drug delivery or precise imaging of the body. He also likes stem cell technology for its regenerative promise. If you want to pitch him, have your science ready, and expect to keep the meeting to 15 minutes — Langer doesn't tend to favor long meetings.

From Polaris' perspective, the firm may not fund every Langer idea, but as Nashat put it, when it comes to generating an idea, "He's a good first call."

Companies founded by MIT's Robert Langer

Acusphere Inc. [1], Cambridge
Advanced Inhalation Research (Now part of Alkermes Inc.)
Alkermes [2] (through Enzytech acquisition), Watertown
Arsenal Medical [3], Watertown
BIND Biosciences Inc. [4], Cambridge
Combinent Biomedical Systems [5], Cambridge
Echo Therapeutics [6], Franklin
EnzyMed (Acquired by Albany Chemical Research)

Focal Inc. (Acquired by Genzyme)
Kala Pharmaceuticals Inc., Boston
Living Proof [7], Cambridge
MicroCHIPS Inc. [8], Bedford
Momenta Pharmaceuticals Inc. [9], Cambridge
Neomorphics (Acquired by Advanced Tissue Science, 1992 and then by Smith and Nephew)
Opta (Acquired by Sun Foods)
Pervasis [10], Cambridge
Pulmatrix Inc. [11], Lexington
Reprogenesis Inc. (Merged with Creative Biomolecules and Ontogeny to form Curis in 2000)
Selecta Biosciences Inc. [12], Watertown
Semprus Biosciences [13], Cambridge
Seventh Sense Biosystems Inc. [14], Cambridge
T2 Biosciences Inc. [15], Cambridge
Taris BioMedical Inc. [16], Lexington
Transform Pharmaceuticals (acquired by Johnson & Johnson)

Some of the organizations with which Langer is involved but not as founder:
Alnylam Pharmaceuticals Inc. Cambridge (Scientific advisory board)
McGovern Institute for Brain Research Cambridge (Board of directors)
Millipore Corp. Billerica (Board of directors)
Predictive Biosciences Lexington (Board of directors)
PureTech Ventures Boston (Co-founder, senior partner)
Whitehead Institute for Biomedical Research Cambridge (Board of directors)
Wyeth (Acquired by Pfizer Inc.) (Board of directors)

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