



Life Science Leaders

The newsletter for executives in Biotechnology and the Life Sciences

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Nanotechnology at a Glance

Venture Capital Funds:

	<u>Nanotech</u>	<u>All VC</u>	<u>\$</u>
Q3-01	\$199M	\$8.4B	
Q3-03	\$261M	\$4.2B	

Nanotech deals/quarter: 28

FY05 Federal Funding: \$982M

Est. revenue by 2015: \$1,000B

Biotech revenues 2001: \$34.8B**

Sources:

*Smalltimes.com

** National Nanotechnology Initiative

***BIO, the Biotech Industry Organization

Convergence: A Cultural Challenge

Interdisciplinary projects are nothing new. Many innovations that we now take for granted were based on the convergence of technologies, among them the television, the Internet and the Human Genome Project.

Usually, those points of convergence are opportunities for profit, drawing entrepreneurs and investors, as well as talented staff that are willing to take a chance on luck and hard work.

Managing those teams, though, is not always so easy. As nanotechnology CEO George Dunbar points out in our interview on page 2, many of these teams come from different work cultures and aren't accustomed to working together, which can make it very difficult to unite a convergent company.

Fast-paced decisions, often unpredictable changes in course and widely differing communication styles between scientists and technologists can frustrate even the most seasoned leader.

Clear communication among the groups is a must. Yet biology, information technology and engineering each have unique jargon and approaches.

Biologists, for instance, are trained to follow intuition, think holistically and plan experiments based on previously observed phenomena. Information technologists, on the other hand, focus on data collection and organization within the confines of specific system architectures, while engineers' training

emphasizes rules and order, rather than intuition.

Secondly, many scientists and engineers derive great pride from individual contribution, making them more likely to work alone and only communicate when they have a problem. Yet interdisciplinary success requires constant and often intense communication among team members.

Lastly, in solving problems, the information technologist designs and programs something intangible to provide a specific data-related

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Featured CEO

I remember my first introduction to George Dunbar. I was brand new to biotech, doing my first CEO search in this industry and plenty intimidated by trying to recruit a Diagnostics Giant. It absolutely made my day to find that he is not only a highly skilled executive, but also one of the nicest gentlemen in the biotech industry.

Many years later, I can't remember a time when a conversation with George hasn't left me more upbeat.

Now that he's at the helm of one of biotech's most successful entries into nanotechnology, I was delighted to talk to George once again and hear a little about what he thinks of managing convergence.

Mari Paul

Founder, Life Science Leaders

Executive Profile: George Dunbar, CEO, Quantum Dot (Nanotechnology)

Nanotechnology seems to be the buzzword these days. It's in every conference, every alumni event for technology schools. The hope and hype is that this technology will change every sector from biology to cell phones, using technology on a scale between 0.1 and 100 nm in size. (For perspective, a human hair is about 80,000 nanometers across.) For the life sciences sector, this also offers a new link to the world of high-tech.

Is nanobio all marketing hype or do you notice industry differences at QDot?

I believe there is clearly danger of hype, and unfortunately, signs of that are emerging from several fronts, including the companies themselves and eager bankers, as well as recent caution from investors. The recent widely publicized concerns are quite valid.

Having worked with biological systems that incorporate micron, or sub-micron sized molecules or particles for many years, I'm fascinated by the fact that this hype is gaining any attention at all. Hype, anywhere, for any reason, is a poor way to communicate. In the life sciences, especially, it will always harm technical and commercial credibility, drowning out and masking real progress.

I'm not sure I have a firm opinion yet on how significant nanobio is going to be. Pressed today, I'd say this is the latest technology innovation, but not a tsunami.

What skills are more, or less, necessary for you now?

Nothing is really different in terms of skill sets needed to build value for an enterprise. Technological progress aside, it remains a value-driven people process. Now, as before, it all boils down to the most

necessary skill of team play, and it is hard to ingrain this in a competitive, inexperienced group of people who aren't conditioned to work in harmony together for a common cause. Unfortunately, our society does not always reinforce these values. Some people will "get it", others won't.

Now that you're working closer to the high-tech sector, what do you think it can teach us?

The clinical and regulatory cycle in our industry often tolerates an organizational metabolism that is inherently slower and more sluggish than some technology fields. I recall once hearing a pharma colleague, who had recently joined a medical device company, remark on how they had to scramble to pick up the pace. Later, he realized how much more could be accomplished in pharma with the same urgency.

Do you see more need for people with a high-tech background?

Certainly; as the integration and connectivity of data that needs to be translated into useful clinical information increases, those interdisciplinary skills will be increasingly vital to an organization. There is the added bonus that a software engineer, a hardware engineer, a cell biologist, or a chemist, all see things from a different perspective. Sometimes this apparently chaotic mix leads to synergy and better decisions....but you have to listen.

How do investors treat Q Dot, vs. other types of companies?

Quantum Dot is fortunate to have a high-quality group of venture

investors that have been patient during the historical "bumps along the way" that occur with any company. Two investors in particular with whom I have worked with in the past brought this unique opportunity to my attention, and I am pleased they did so. Nevertheless, creating value and liquidity remain the highest priorities, as they should with any investor group. It's my role to deliver that.

Being on the cutting edge of a new industry, are you experiencing anything different?

Hope and greed.

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result. The engineer designs and builds something tangible to specification. Yet the biologist explores, often neither expecting nor driving toward a specific result. Thus, these groups' work and communication styles differ markedly in specificity vs. intuition.

Astute leaders with the right personality can make all the difference. The business world is replete with leaders with diverse technological and functional disciplines in their background – the scientist MBAs, CEO doctors and top business people who still spend time in the lab.

That's the right start. A good leader also knows how to educate a team, both technically and in teambuilding, and how to communicate proactively to keep the team upbeat, creative and productive.

Those skills will only become more urgent as new ventures increasingly combine biology, information technology and engineering. Those may not meet the level of hype that nanotechnology has seen lately, but one thing is clear: The business world is moving; Those who sit still will be left behind.

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