

Forum ponders emerging technology's applications

By Alicia Korney, Staff Writer

A revamped Brown Enterprise Forum opened the academic year by focusing on the emerging field of nanotechnology at an afternoon set of lectures held at The Westin Hotel on Sept. 23.

Nanotechnology is the science and technology of building electronic circuits and devices from single atoms and molecules. Though the emerging field is recognized for the promise it may hold for a number of industries and applications, it has yet to prove itself as a reliable commercial venture, nevermind as the driving force of the next economy.

Dr. Charles F.M. Kingdon, vice president for technology partnerships at Brown Technology Partnerships, took over planning of the forum from Bill Jackson last fall and said the nanotechnology conference was the first in a series of other mini-conferences, which will focus on acoustics, optics and vaccines.

The majority of the local speakers, who were each allotted 20 minutes for a presentation, came from Brown and the University of Rhode Island bearing research presentations and theories for possible applications. Saul Kaplan, director of business development for the state Economic Development Corporation, said the presenters were there to "tease" the audience with a sampling of the work going on in the state and talk about what could be happening with even more collaboration.

"We're building depth and functional expertise," said Kaplan, as he introduced the afternoon's keynote speaker, Dr. Thomas Cellucci, president and COO of Texas-based Zyvex Corp. "The tools we need are just beginning to come together in a cross-functional way to deliver applications," Kaplan said. "Nanotechnology feels to me like the life sciences did 15 years ago."

Zyvex is a nano-manufacturing company that is designing a machine to manipulate parts at the microscopic level. The plan is to eventually use the machine to build machines that will operate on the molecular level. Cellucci is the founder, president and CEO of Wellesley, Mass.-based Cellucci Associates, a management consulting firm. Cellucci, who has been with Zyvex for 18 months, began his speech by pointing out that he was in attendance to talk about nanotechnology without the hype.

He said the private company, financed by a wealthy businessman, was more of an academic setting than a business when joined it. Since Cellucci joined Zyvex, the company is on its way to doubling its employee count to 125 people by the end of the year and will have at least \$10 million in revenues this year, with a \$40 million order backlog. Next year, he expects the revenues to double and the order backlog to rise to \$50 million.

Noting the nanotechnology is still in its embryonic state, Cellucci said, "It's sad for me that at the end of the day we're one of the few companies that are producing a product and generating revenue." He said the bottom line of any business is to produce a service or product that is better, faster or cheaper. For Zyvex, the key has been looking at the market and seeing what the unsatisfied needs are, not vice versa.

He's implemented applied sales engineering, not allowing any product coming out of the materials or tools labs to be released without at least two application descriptions to help customers understand what they're considering purchasing. As an example, the company needed to manipulate objects at the microscopic level, so Zyvex developed a pair of grippers that they are now marketing to a wider audience.

"If you take away anything from today, take away the importance of application, application, application," Cellucci said. "It sounds simple, but to find a solution, first you need to look for a problem. That's the key to making this field a success on the way to things like a molecular assembler."

Bob Zimmer, Brown's provost, opened the 21st year of the forum (previously known as the Brown Venture Forum) by reminding the audience of the major investments the school has made in its new life sciences buildings and the plans for recruitment of 50 new faculty members.

Zimmer said Brown has strengthened partnerships with a number of public and private organizations, including other academic groups and members of the venture capital community. As usual, a networking reception followed the event. A schedule for future programs is available at www.brownenterpriseforum.org.

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