

Region bidding to be nanotechnology hub

Cooperation with Pa., N.J. may pay off with major new industry

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THE NEWS JOURNAL
12/11/2005

If economic development were a blackjack table, a lot of folks would be placing their bets on nanotechnology. And Delaware would be at the table.

Many think nanotechnology will be the next big thing. The emerging science involves creating devices as small as one-billionth of a meter wide. A human hair is 50,000 to 80,000 times thicker than that.

Companies are using nanotechnology to make everything from scratch-resistant automotive paint to drugs that can travel through the human body to seek out cancers.

Experts say the technology has the potential to generate lots of highly skilled, high-paying jobs without the polluting smokestacks of old. Predictions are that within 10 years consumers nationwide will spend as much as \$2.6 trillion a year on products developed using nanotechnology.

Delaware has a way to go to claim the title of a top nanotech state.

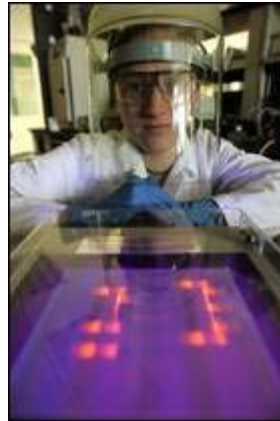
In March, when Small Times magazine ranked the 50 states in terms of their climate for nanotechnology -- including research dollars, costs and venture capital -- Delaware placed 18th, behind competitors like California, Massachusetts and Texas.

But boosters say it's still early in the game and Delaware has a few things that could boost its fortunes, especially if it works with neighboring states.

Last year, Delaware, Pennsylvania and New Jersey launched the Mid-Atlantic Nanotechnology Alliance, a partnership to boost efforts to attract nanotech companies and develop homegrown ones. The consortium, which includes Delaware Technology Park in Newark, Ben Franklin Technology Partners of Southeastern Pennsylvania and the New Jersey Commission on Science and Technology, bills itself as the first multistate technology initiative in the United States.

The First State can boast of large science-based companies, such as DuPont, AstraZeneca and W.L. Gore, and a growing number of smaller businesses that employ nanotech in their research and manufacturing.

The University of Delaware, which conducts advanced materials research, shares its expensive equipment with the area's young nanotech companies.



Research assistant Stacie Dutton uses ultraviolet light to view DNA separation at Athena Biotechnologies, an affiliate of the Delaware Technology Park.

Delaware Technology Park provides growing high-tech companies with office and research space and access to venture capitalists.

Add to that Delaware's skilled work force and business-friendly government and tax structure and the state has the ingredients to become a big-time nanotech player, say people like **David Gates**, managing director for **Gates and Company**, a Wilmington-based consulting and investment banking firm.

Delaware also may have a leg up because it does not have to start from scratch to develop a nanotech niche, **Gates** said.

"I think we're in good shape because we have some anchor tenants," he said.

Nanotechnology is not an industry yet. It's a technology used in a wide range of industries, including two with a major presence in Delaware.

At DuPont, for example, nanotech is woven throughout the entire company.

"Every single business unit is looking at whether we can use the tools that nanotechnology provides," said Uma Chowdhry, DuPont's vice president for corporate research and development.

The good news for Delaware is that field is wide open, said Rich Overmoyer of GSP Consulting in Pittsburgh, which has a state contract to develop a business plan for Delaware's emerging technology center.

No area has established itself as a major nanotech hub, Overmoyer said.

"There's no region around the globe that's gone on record and said, 'We want to be No. 1 in nanotechnology,' " said Overmoyer, a former deputy secretary for technology investment with the Pennsylvania Department of Community and Economic Development.

Albany, N.Y., may be as close as any to claiming the title of nanotech hub. A state-supported center of excellence in nanotechnology at the University at Albany has attracted billions in investment from such companies as IBM.

Ultrafine Technologies Inc. is one of the Delaware companies that could help put the state on the nanotech map. The company, located at Delaware Technology Park, uses nanotech materials in a wide range of applications, including electronics and solar cells.

Berhan Tecele, the company's president, has seen a sea change in the perception of nanotech since he launched the company in 1995.

Back then, people had no idea about nanotech and its value for industry, the former DuPont research chemist said.

"Now, there's a lot of effort around the country to push this technology forward."

Observers say Delaware's efforts will be helped by its decision to join forces with its neighbors.

Working with Pennsylvania and New Jersey may help foster joint research among the University of Delaware, the University of Pennsylvania, Drexel and Rutgers. It could also encourage the region's drug companies, such as AstraZeneca, Merck & Co., Johnson & Johnson and GlaxoSmithKline Plc., to collaborate.

Since 1995, the tri-state region's universities have received more than 500 nanotechnology research awards from the National Science Foundation or the National Institutes of Health.

Taken together, Delaware, Pennsylvania and New Jersey rank second in the number of patents issued for nanotechnology-related inventions, with 320 since 1995.

A regional approach is needed because that's the way business thinks, said RoseAnn Rosenthal, president and chief executive officer of Ben Franklin Technology Partners of Southeastern Pennsylvania. They don't pay much attention to state borders, she said.

"Sometimes, we think of our own particular jurisdiction," said Michael Ratchford, a government relations associate at W.L. Gore. "This calls for a pooling of resources."

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