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## What's New in Princeton & Central New Jersey?

Reprinted from the December 10, 2008, issue of U.S. 1 Newspaper

### Education and Science Need Each Other

In increasing numbers, American pharmaceutical and biotech firms are turning to India and China for their drug development. Cliff Mintz, right, an East Windsor-based consultant, has an intriguing theory about this, based on his perception of a disconnect between academe and industry, and on the fact that drug making is a commoditized business.



Cliff Mintz

"If you can save money on labor costs and get a product back as good or better and spend less money to get it done, the pharmas will outsource the work." Mintz sees a lack of cooperation between pharmas and universities. "The people that run colleges and graduate schools believe their job is to provide the tools. After you graduate it is up to you to leverage your skills to presumably get a job. Business, on the other hand, does not believe that they have to do anything to provide education or training because that is not their job. Their job is to make more money than they spend to keep the company going."

What started happening in the late 1990s, with the sequencing of the genome, was a big disconnect between what was going on in academic research institutions and corporate pharmas, says Mintz. Students were not trained on the equipment and the latest techniques, such as robotics, high throughput screening, and DNA screening. At the same time, these same techniques reduced the number of post docs needed.

Through the mid 2000s, these post doctoral students had trouble getting their first corporate job. After seven or eight years of paying tuition they couldn't even get that first \$40,000 job. "Science was not seen as a way to be successful," says Mintz. "We were not getting enough Americans applying for PhDs, and we starting taking graduate students from other countries. So we've been training the rest of the world in how to do American style science."

Competition from overseas drug development firms began when, after September 11, 2001, the number of visas for these students dwindled. "The people we had trained began to start their own contract companies at home. Because of the quality of the education they received — on the taxpayers' dime — they can be competitive."

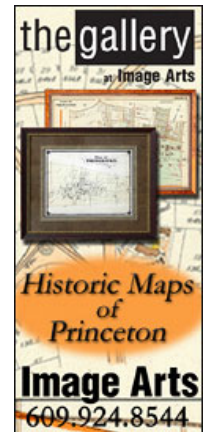
Mintz grew up in the Bronx and Rockland County, New York, where his father was a teacher and school principal. He graduated from Cornell in 1974 and, after earning his PhD at the University of Wisconsin at Madison, he taught microbiology at the medical school of the University of Miami. He left a tenure track position to join Transcell Technology on Cornwall Road in Monmouth Junction, and when that closed he ran the biology department at Middlesex County College. In 1996 he founded his consulting firm, BioInsights.

That year he also met Abe Abuchowski, who, having left Enzon, was also doing consulting. "He was a strong advocate for education," says Mintz. Mintz and Abuchowski had similar views, that successful biotech needed to hire competent people but not pay them as much as a four-year graduate would demand. "Training someone to work in pharmaceutical manufacturing is like training someone to be a car mechanic. You need to have an understanding of the system, but you don't need a bachelor's degree," says Mintz.

On September 11 the training train rolled to a halt. "Training is the first thing that always goes," says Mintz. "Even the requirements for annual training — companies let it slide when the economy took a hit." He blames the Bush administration for not emphasizing regulatory review of procedures that beg for constant retraining, such as drug development and manufacturing.

"I believe that the FDA, until George Bush got elected, was doing an outstanding job in protecting the citizens of the U.S. When Bush appointed Mark McClellan in 2002, he revamped the agency to resemble an organization that was nimble, quick, and responsive. In 2004 McClellan moved to Medicare Part B and did a great job there. Since then there has been a lack of leadership," says Mintz, referring to the notorious problem with Merck's Vioxx. "Staffers at FDA had concerns about Cox2 inhibitors, such as Vioxx, but political appointees at the agency did not listen."

When the training market dried up, Mintz turned to biomedical communications. In the early



days of Prolong Pharmaceuticals, he did research for Abuchowski to identify low-hanging fruit, PEGylating biologics, which could yield substantial return on investment.

"PEGylation is an ideal technology to expand the lifecycle of pharma products, but in order to make money for partner companies, Prolong must improve the original product, even though it is a generic," says Mintz.

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