



January 23, 2010

Binghamton University research: It's good business

BU's next president will push the agenda

*By Doug Schneider
dschneid@gannett.com*

It began in 1965 with a simple dilemma, posed by an assistant football coach to a university researcher.

Why, coach Dwayne Douglas wondered, were his University of Florida players losing so much weight during games? And could anything be done about it?

Researcher Robert Cade began to analyze the problem and soon discovered that fluid loss affected the players' performance, and sometimes their health. He and three colleagues began mixing water, sugar and salt with the idea that the concoction would replace carbohydrates and electrolytes the players lost when they sweat. After false starts because early versions were unpalatable, Cade followed his wife's suggestion to improve the taste by adding lemon juice.

The rest, in the annals of university research, was history.

Gatorade, as the drink was called, sustained Florida's players through 102-degree heat in a stunning fourth-quarter victory over powerhouse LSU. Soon, Stokely-Van Camp was selling hundreds of thousands of gallons of Gatorade annually. Before Gatorade's 40th birthday, beverage giant PepsiCo had acquired the brand and was selling \$2 billion worth each year, according to the Web site for Florida's research programs.

And money poured into the university -- the payback for developing a great answer to one basic question, and getting the idea to a place where it could generate revenue.

"When universities are able to bring products (developed with research funds) to market, the community wins," said Donna Lupardo, the assemblywoman whose district includes Binghamton University.

Doing more and better research -- that which stimulates the local economy -- is key for public universities across New York in general, and specifically for BU as it begins its search for a new president.

Lois DeFleur, BU's president for the past 19 years, will retire July 30. That presents the opportunity for the university to hire a leader who can build on the \$35.6 million in research grants the university received in 2008-09.

Why is research so crucial?

"For every \$1 million in federally sponsored research ... it results in 29 jobs in your community," said John B. Simpson, president of the University at Buffalo, the largest of SUNY's four university centers. "Simply put, research is good business."

Different paths

That said, there's no lone blueprint for success. And public colleges within New York are taking different approaches to using the research dollars they attract from funders. (The National Institutes of Health and National Science Foundation are the major players in sponsored academic research, though there are a number of other funding sources.)

On the University at Albany campus, millions of dollars of investment in programs at the School of Nanosciences and Nanoengineering have produced jobs for more than 2,500 people. A complex of buildings has sprouted as investment grew, spurring jobs for contractors and other non-university businesses.

In 2006 -- the last year for which information is available -- the school and its research and business partners were filing patent applications at the rate of one per business day.

Cornell's College of Agriculture and Life Sciences used research funds to develop strategies to help reconfigure school, corporate and home kitchens to promote healthier eating. Federal funding helped develop a winter wheat that yields 5 percent more grain than its predecessors, yet is disease resistant, which helps New York's farmers.

At Binghamton, the Center for Advanced Microelectronics Manufacturing opened in 2008 and quickly grew to include a 10,000-square-foot area and clean room for the creation of tiny electronic components for use in such things as household lighting and homeland security. The Innovative Technologies Complex provides office services and equipment to start-up companies that use technology developed at BU for work in the life sciences.

BU's 2008-09 figure for research grants is up 37 percent in five years, university spokeswoman Gail Glover said. Still, it trails the larger campuses in New York's state university system.

And the entire system needs to attract and do more with research dollars, according to the chairman of the state university system's board of directors.

"New York is only beginning to understand the link between the economy and healthy research institutions," said board chairman Carl Hayden, a huge proponent of increasing SUNY's investment in research. "The jobs of this century will be built on intellectual capital."

'Turn out the lights'

Simpson saw that link as a professor and administrator in Seattle at the University of Washington, where he spent most of his academic career.

Eventually, the region built a reputation for a good economy based on innovation and brainpower at Microsoft and other locally based "idea companies" -- many fueled by the research and talent at the university. But 30 years ago, when the manufacturing economy was struggling, jobs were vanishing and so were the people.

"I went to the city, and saw this billboard," Simpson said. "It said, 'Will the last person in Seattle please turn out the lights.'" Seattle eventually lost Boeing Inc. and its jobs to the greener pastures of Chicago.

The image of a darkened city is a scenario New York Gov. David Paterson may have had in mind when he announced this month that the state would invest \$25 million in seed money designed to help colleges take ideas to market.

Eventually, Paterson said, the goal will be to create more than 9,000 faculty and staff jobs across SUNY, and provide construction employment for another 43,000 people as the university system expands its colleges and medical centers.

Meanwhile, back in Florida, the university reports that Gatorade has brought the university more than \$80 million to create jobs, build buildings and develop other ideas -- a classic example of what faculty research is meant to do for universities and their host communities.
