Where Life Science Works

National

Grid's Upstate New York region boasts an exciting climate for the biotechnology industry. Hundreds of biotechnology firms already take advantage of New York's well-developed research infrastructure, an exceptionally well-trained work force, Shovel-Ready sites, and available facilities.

New York's research infrastructure has contributed to the state's strong position in the biotech industry. The state ranks second in biological research and development expenditures at universities with three institutions in the top 20 and 11 in the top 100. Similarly, the state is a leader in industrial pharmaceutical research, ranking fourth nationally. Some 140 bioscience industry firms are considered dedicated biotechnology companies. The latest data from the New York Biotechnology Association (NYBA) indicates that total biotech employment in New York State has grown at approximately 30 percent annually since 1999, and that over 100 dedicated biotech companies in the state had combined annual revenues of approximately $1.6 billion, spent approximately $560 million on research and development, and have a combined 90 drugs in development.

The biotech industry is distributed widely throughout Upstate New York, but tends to cluster in, or around, academic centers of excellence.

Western New York — Buffalo/Niagara

Buffalo/Niagara has a long history of being a research leader in cancer, neurology and stroke, infectious diseases, drug discovery, and dental medicine. Inventions such as the cardiac pacemaker, therapy for multiple sclerosis (Avonex), and the Prostate Specific Antigen (PSA) were all invented in Buffalo. More than $250 million in research funding occurred in Buffalo Niagara in 2004, and more than 350 new principal investigators and researchers have been recruited to the region from other national and international institutions during the last four years. Key research centers include Roswell Park Cancer Institute — the first cancer research, treatment, and education center in the United States; Hauptman Woodward Institute — home to a Nobel Laureate and focused on the structure of proteins and drugs; and NYS Center of Excellence in Bioinformatics & Life Sciences — a new $200 million drug-discovery center that is powered by one of the top-10 fastest, high-performance supercomputers in the United States. Additionally, more than 200 clinical trials are conducted by regional institutions each year, including many that are sponsored by major pharmaceutical, biotechnology, and medical-device firms.

There are about 130 life sciences companies in the Buffalo/Niagara region employing approximate-

ly 6,500 people; these include sub-industries such as pharmaceutical manufacturers, biotechnology, medical-device manufacturers, and other businesses that support the life science sector. The region is home to major companies such as Invitrogen, Astellas Pharma, American Pharmaceutical Partners, Greatbatch, and Ivoclar Vivadent. Its location on the U.S.-Canadian border is within a 90-minute drive of more than 650 biomedical companies and research institutions. Buffalo/Niagara ranks fourth in the nation in the number of science and engineering degrees granted each year, and with 30 higher education institutions in the region with 100,000 enrolled students annually, approximately 2,500 graduates each year are in life sciences disciplines. New educational and training programs in biotechnology management, drug development, and bioinformatics provide opportunities to find and keep a skilled work force.

During the past four years, there have been more than 1,100 new jobs created by private life sciences businesses in the region, and about 30 new life sciences companies were started up. Companies such as Greatbatch; American Pharmaceutical Partners; Contract Pharmaceuticals, Ltd.; and AccuMed have invested more than $100 million in new buildings and equipment to support new expansion and relocation projects in the region. Many companies in the Buffalo/Niagara region are members of the Health Care Industries Association — the life sciences industry trade association that serves and represents the needs and interests of the region's medical-technology companies. All of these assets contribute to making Buffalo/Niagara a place *where life science works.*

Central New York — Syracuse MSA

With the announcement of the construction of the Central New York Biotechnology Research Center — a project that will establish the Syracuse area as a leading center for plant and animal biotechnology research — Central New York should continue its strong presence in the biotech industry.

The Research Center effort is an aggressive three-phase plan that envisions an $80 million, 240,000-square-foot facility containing research labs, technology-transfer space, offices, and conference rooms dedicated to biotechnology research and economic development efforts. The State University of New York College of Environmental Science & Forestry (ESF) is collaborating with Syracuse University, Upstate Medical Center, Cornell University, and local bio-manufacturing companies such as Bristol-Myers Squibb, Invitrogen, Pall Filter, and Welch Allyn on this project.

Phase one of the center is currently being designed as a 60,000-square-foot state-of-the-art teaching facility. The center will be the largest bioprocess engineering teaching center in the world. At the core of the facility is a 5,000-square-foot bio-production plant that will be used to teach bioprocess engineering scale-up and GMP manufacturing technologies and activities in a real-world setting. The teaching faculty will be drawn from leading local colleges and universities and local bio-manufacturing companies, with both certificate and degree programs offered.

This region shows a strong concentration of companies in the biotech industry, with more than 50 percent more employees than would be expected from its population. Bristol-Myers Squibb has more than 1,000 employees in the Central New York area, primarily engaged in manufacturing pharmaceuticals. Significant growth was seen among smaller companies in the region among noncommercial research firms. Central New York companies are actively engaged in bringing new research to market and have initiated an industry-driven not-for-profit association, CNY MedTech, to facilitate commercialization of bioscience and medical technologies in the region.

Helping to fuel this concentration and growth in the biotech industry are the over 1,900 graduates in life-science–related curriculum from the area's colleges and universities. Syracuse University, the State University of New York-ESF, Cornell, Colgate, Hamilton, and LeMoyne have enrollment of 819 undergraduate and advanced-degree students in bio-engineering. In addition, area two-year colleges offer biotech degrees, with current enrollment of 75 students and total technical degree enrollment of over 1,600.

Capital Region — Albany/Schenectady/Troy MSA

New York's Capital Region is gaining prominence today as a high-tech R&D center. Strong academic infrastructure and a business-friendly climate are among the reasons that the region has seen significant growth in employment within smaller biotech firms, particularly those commercializing therapeutic and diagnostics advances. These companies and research institutions collaborate through a network called Bioconnex (bioconnex.org).

Two of the area's largest universities, Rensselaer Polytechnic Institute (RPI) and the University at Albany (UAlbany), recently launched major expansions in life sciences, bioengineering, and biotechnology. When completed, Rensselaer's $80 million Center for Biotechnology and Interdisciplinary Studies and UAlbany's $78 million Life Sciences Research Building will provide scientists with cutting-edge resources, as well as offer opportunities to create collaborative partnerships and spin-off companies. State leaders have pledged $22.5 million in funding for a Cancer Research Center at the UAlbany East Campus through the state GenNYsis program, and another $22.5 million to create a Center for Bioengineering and Medicine at RPI.

A number of biomedical research and clinical institutions complete a strong biotech foundation in the Capital Region. The New York State Health Department's Wadsworth Laboratories have gained national prominence in public health research and screening, as well as cell and molecular structure, bioinformatics, genetics, and cancer research. The Ordway Research Institute focuses on collaborative, translational research in cancer, pharmacogenomics, emerging infections and host defense, as well as neural and vascular biology.

The Adirondack North Country

Biotech companies in metro areas have access to a lot of "resources" — labor, infrastructure, and a cluster of biotech organizations to draw from. Those same resources can be found in New York's Adirondack region. The six-county Adirondack North Country demonstrates great specialization in bio/pharma. The fastest-growing firms among smaller biotech sectors are pharmaceutical preparations and noncommercial research. Clarkson University offers strong training in the biological sciences.

The Upstate New York Work Force Advantage

New York boasts the sixth-highest level of graduate and professional degrees in the nation, with 12.6 percent of its population aged 25 and older holding graduate or professional degrees, according to a new survey analysis by the U.S. Census Bureau. Nationwide, just 9.4 percent of the population 25 and older has a graduate or professional degree, the Census data showed. At least five Upstate counties surveyed ranked higher than the U.S. average in this category.

The Shovel-Ready Difference

Upstate New York and National Grid take a "No Gimmicks, No Hassles" approach to assisting companies with location and expansion options. National Grid's qualified staff is available to help any biotech company through each step of the site selection process. Building on the proven success of the innovative Build Now-NY Program, an ongoing Shovel-Ready Site Certification component has been added. These pre-permitting guidelines assist communities in undertaking all the necessary site preparation and planning, including environmental review, zoning changes, and other necessary approvals.

New York originated the concept of pre-permitting sites, whereby localities determine what type of development is best for a particular parcel of land and then secure the necessary permits before a developer expresses interest in the site. "With Build Now-NY, we invest time, energy and resources in potential development sites up front, so that when a business arrives, we are ready to step in and help them create new jobs without delay," Governor George Pataki says on the Build Now-NY home page.

Build Now-NY now uses the same pre-permitting concept as the Governor's successful SEMI-NY program employs to attract the growing semiconductor industry. SEMI-NY has already resulted in IBM's investment of $2.5 billion (the largest private-sector investment in the United States since 1995).

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