
FORMULA FOR ILLINOIS' FUTURE IN BIOSCIENCE
ILLINOIS SCIENCE + TECHNOLOGY PARK

EXECUTIVE SUMMARY — ADDENDUM
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PREPARED BY
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Applied Real Estate Analysis, Inc. (AREA), a multidisciplinary real estate consulting firm, was hired to conduct a comprehensive study to analyze the overall strength of the bioscience industry in Illinois and assess the economic impact of developing the Illinois Science + Technology Park on a 23-acre site in Skokie, Illinois. The proposed complex will consist of laboratories and offices dedicated to the biosciences. Forest City Science + Technology Group commissioned this economic impact analysis at the request and recommendation of the Illinois Department of Commerce and Economic Opportunity to facilitate the department's due diligence related to this proposed project.

AREA conducted extensive industry research and interviewed key industry experts to fully understand Illinois' bioscience industry as it exists today and its potential for the future. The firm also examined how Illinois compares to the rest of the nation in its ability to compete with other established bioscience markets, and assessed the extent to which the proposed development would enhance the state's competitive position. AREA adapted and ran the IMPLAN Input-Output Economic Model to assess the development's impact on the Illinois economy.

Research for the report was conducted from December 2004 through early February 2005. At that time, the proposed development was to include approximately one million square feet of laboratory and associated space in renovated buildings and new structures. Forest City Science + Technology Group revised its original concept and the planned development will now contain more than two million square feet of laboratory and associated research and development facilities.

A more detailed examination of the site and the demand from potential tenants resulted in a decision to update the initial master plan. AREA, using updated economic information, reran the IMPLAN input-output model to assess the economic impacts of the larger facility on Illinois' economy. The results of that analysis are presented in this revised Executive Summary.

Applied Real Estate Analysis is a national consulting firm that analyzes real estate markets and the economic and fiscal impacts of real estate developments for both private and public sector clients. AREA regularly conducts analyses for federal agencies and for municipalities across the country.

EXECUTIVE SUMMARY — ADDENDUM

The Illinois Science + Technology Park, currently under development in Skokie, was originally planned as a 1,000,000 square foot laboratory and office complex for the biosciences. One year later, the plans have evolved to include 2,000,000 square feet of laboratory and associated space. The facility is well-poised to provide a catalyst to transform northeastern Illinois from a scientific research hub to an economic engine for bioresearch and bioscience related technologies. The planned development by Forest City Science + Technology Group will include research and development facilities to meet existing and future demand for leasable space to fit the unique needs of Illinois' emerging nanotechnology, informatics and bioscience industries.

Applied Real Estate Analysis prepared a study of Illinois' competitive position in biosciences nationally and analyzed the impact that the one-million square foot facility would have on the State's economy. The full report was printed in March 2005. In mid- November 2005 a new impact analysis, using updated statewide input-output information, was prepared to assess the impacts that the larger facility would have on the Illinois Economy.

The following table provides a comparison of the estimated impacts that the facility will have on the Illinois economy. The analysis, however, demonstrates only the quantifiable impacts of the development. Of equal importance is how the increase could impact the image of northeastern Illinois as a rapidly growing center of the bioscience industry. Instead of doubling the amount of leaseable space available, the new configuration increases it fourfold. This provides even greater opportunity to retain firms that would otherwise depart for the coasts. In addition, it will help galvanize the attention of venture capitalists. Money tends to follow money. The long-term effects of doubling this initial development of leasable space for bioscience and related research are likely to be calculated in multiples of the short-term increases in economic activity.

Comparison of the Impacts on Illinois Economy of Alternative Plans for the Illinois Science + Technology Park

	Original Plan	Current Plan
Laboratory and associated space (sq.ft.)	1,000,000	2,000,000
Direct jobs	3,250	6,500
Indirect jobs*	10,887	15,275
Total jobs created statewide	14,137	21,775
Direct temporary construction jobs	500	1,000
Increase in statewide economic activity	\$1.8 Billion	\$3.6 Billion

* Updated economic data were used to calculate the impact of the larger facility.

This unique multidisciplinary campus will place research, development, education and commercial activities under the same roof, allowing for synergistic partnerships between large companies, small innovators, medical institutions and universities that will help push goods to market more efficiently than ever before. The following paragraphs summarize the findings of the research of the bioscience industry in Illinois and the United States.

The Economic Power of Bioscience

The commercialization of bioscience research and discovery is a growing field that crosses traditional industry boundaries. Nationwide, more than 885,000 people are employed in the bioscience field, including over 15,000 in Illinois.

- Bioscience employment has grown more than 60% since 1995.
- It is expected to grow at least another 15% by 2010.

There is no indication that growth in this field is slowing. In 2003, sales by the top 13 firms in the biopharmaceutical segment of the industry were \$21 billion and revenues for the entire biopharmaceutical industry increased by 22.5% over the previous year's revenues.

Biotechnology is also being applied to research in the agricultural and science and chemical industries to create new organic-based products that are renewable and environmentally friendly. In Illinois, this would include the production of ethanol and other plant-based fuels as well as innovations in the state's large food processing industry.

Although life sciences, including biopharmaceuticals, are the largest component of the bioscience industry, other sectors also have significant growth potential. Nanotechnology, in particular, may become a trillion dollar industry by 2015 given its wide range of potential applications in preventing bioterrorism and in product development processes.

Supplying the Existing Demand for Real Estate

Illinois is at a competitive disadvantage in the race to capture the commercial potential of the bioscience industry because it lacks suitable research and development laboratory space available for lease. Without a supply of commercial laboratory space available for lease from the real estate industry, companies cannot convert their patented knowledge into marketable products in Illinois and there will be too few jobs available for the knowledge-based workforce currently trained at Illinois universities. In what is commonly referred to as

“brain drain,” these graduates have no choice but to leave Illinois for jobs in other states where laboratory space is available for growing companies.

Illinois’ universities, medical institutions and national labs have first class research facilities and have been successful in patenting their research. But to capture the potential economic benefits that will be derived from converting the patented knowledge into marketable products, Illinois will need a supply of leasable commercial laboratory space. Without the appropriate real estate, the commercial benefits of research conducted in Illinois go to the coasts or even to neighboring states. Money and talent are drawn to locations where companies have ample resources to develop their products. Thus, Illinois venture capital firms often invest in companies outside of Illinois, while scientists and technicians trained in Illinois universities go to the coasts to find jobs.

Today, northeastern Illinois offers only about 500,000 square feet of leased lab space. The lack of available R&D laboratory real estate is what differentiates the Chicago metropolitan area from other metropolitan areas that have major bioscience communities. Major clusters of biotechnology firms have developed in Boston, around MIT and Harvard, and in the San Francisco Bay area, around the University of California at San Francisco, Stanford University and the University of California at Berkeley. Each area has more than 11 million square feet of space suitable for use by biotech companies and supporting firms and organizations. Even Madison, Wisconsin, a comparatively minor center of biotech research, has three times as much leased bioscience space as does the Chicago metropolitan area.

To enable new companies to grow and develop in Illinois, the Chicago area will need substantially more lab space suitable for bioscience firms.

On The Brink: A Wealth of Knowledge, A Base of Workers

Illinois is home to several major bioscience research hospitals, universities and federal laboratories. Two of the six National Science Foundation’s Nano Research Centers are also based in Illinois. And, as the nation’s largest medical community, Illinois has several specialty patient care facilities that drive research in life science.

Ranking of Illinois as One of the Leaders in Scientific Research & Development

		Rank
Total State Population	12,654,000	5
Doctorial Scientists	20,680	7
Doctorial Engineers	3,940	9
Total R&D Federal Expenditures	\$70,275 million	7
Total R&D Performance	\$10,190 million	8
Industry R&D	\$7,616 million	8
Academic R&D	\$1,441 million	7
NIH Funding	\$706 million	9

Source: National Science Foundation & National Institutes of Health

Not only is this a network that corporations and research organizations located at the Illinois Science + Technology Park could tap into, but the campus itself would be a means for Illinois to keep that brain power in the state, adding value to the local economy.

Building Synergy to Transfer Illinois Technology to Market

While both northeastern Illinois and the Champaign-Urbana regions are leading centers of research in biosciences and nanotechnology with a strong bioscience workforce, the region's lack of facilities and infrastructure hinders conversion of that research into commercial activity and new jobs.

The state's existing bioscience employment base is largely in mature segments of the industry—major pharmaceutical companies—that are experiencing slow growth compared to biotechnology, nanotechnology and other emerging fields. There is a lack of available real estate offering attractive financing for tenants with affordable rents to meet the special needs of innovative small firms. With the dearth of opportunities, emerging companies and scientists trained at Illinois universities to work in the fast-growing bioscience fields are leaving the state. Illinois' lack of infrastructure is preventing scientists and entrepreneurs from building on the basic research conducted locally.

To bridge this gap and fully share in the economic growth potential of the global bioscience industry, Illinois must find ways to reinvigorate its mature industries and translate its strength in research into viable commercial activity.

This can be done by creating an infrastructure and environment that will enable both emerging, growing, and established firms to be successful by developing and testing—and ultimately producing—new products. The Illinois Science + Technology Park will provide a place for synergistic relationships to grow from the close proximity of research, development, and educational activities. This will accelerate the growth of the bioscience and related industries in Illinois, as major firms with marketing and distribution capabilities, can provide a rapid movement of goods into the marketplace, enabling smaller firms to concentrate their resources on research and development.

Economic Impact – 21,000 New Jobs and \$3.6 Billion in Annual Output

Doubling the size of the planned facility will also double the number of direct jobs that could potentially be located at the site. AREA estimates that 6,500 jobs will be created directly at the campus. Those good-paying jobs will have an employment multiplier of 3.35 and an economic output multiplier of 2.05. The development of the Illinois Science + Technology Park will generate approximately 21,775 new jobs throughout the state and have a total annual economic output of \$3.598 billion. Jobs created at the Science + Technology Park will include a substantial component of highly compensated executives and research scientists but they will also include thousands of jobs for mid-level research assistants and technicians, facilities managers, and maintenance technicians. Skill levels will range from advanced degree holders in scientific and engineering fields to technician jobs requiring only junior college training.

On a temporary basis, the construction of the facility will create the equivalent of up to 1,000 construction jobs. The multiplier for construction jobs is 2.52. Thus, in addition to the 1,000 direct jobs, more than 1,500 additional jobs will be created throughout the State’s economy over the development phase of the project.

In addition to the 6,500 permanent, direct jobs on site, the facility will generate more than 15,000 additional jobs throughout the state. A high percentage of these jobs will be concentrated in northeastern Illinois in restaurants and retail establishments where the workers at the site are spending their earnings.

Thus, the jobs created will include sales persons, store managers, cashiers and stock clerks at grocery stores and retail establishments, cooks, wait staff, and dishwashers at restaurants, sales staff and mechanics for automobile dealers, real estate agents, home improvement contractors, and jobs in dozens of other categories.

Statewide, the jobs created may include manufacturing and assembly workers in industries that will supply equipment to the facility or that supply the automobiles, furniture, food and other consumer goods being purchased by the new workers at the Illinois Science + Technology Park. Additional jobs will be generated in transportation, business services, and the leisure and hospitality industry. The ripple effects of 6,500 new technology based jobs at the Illinois Science + Technology Park will permeate virtually every sector of the State's economy to some degree.

Illinois Within Striking Distance

Illinois does receive federal funding to drive technology research. Illinois ranked ninth among states in National Institutes of Health funding in 2003, receiving \$706 million. Approximately \$544 million of the total went to institutions and firms in northeastern Illinois, while \$2.2 billion went to the Boston area and \$1.9 billion went to the San Diego area.

Other major sources of ample federal funding in Illinois include the National Science Foundation, Department of Energy, Department of Health & Human Services, Department of Defense, and Department of Agriculture.

Illinois already offers a great location for the development of biotechnology, nanotechnology and other emerging technologies, providing a strong knowledge-based workforce, excellent research & academic institutions, a community of entrepreneurs & venture capitalists and a high quality of life & schools for employees and families.

Illinois Science + Technology Park

The Illinois Science + Technology Park will enhance Illinois' competitive position in gaining federal funding and enable the state to keep and attract top scientists, technicians and entrepreneurs. It will reverse current conditions in which the economic benefits of research conducted in Illinois are exported to the coasts. The impact multipliers in Illinois are still comparatively high because of high employment in the secondary industries that support the pharmaceutical and other bioscience industries. There are indications that the presence of this support industry is also relocating to be closer to the bioscience clusters on the coasts. Jumping from 500,000 to 2.0 million square feet of leasable wet-lab and supporting facilities will immediately make Illinois more attractive as a location for supplier industries. This expanded facility will give Illinois significant momentum towards establishing itself as a base for bioscience innovation and marketing, stopping the "brain drain" and securing the state's future as one of the nation's top ten bioscience clusters.

