

BIOTECHNOLOGY,
PHARMACEUTICAL
AND LIFE SCIENCES

2009



NORTH CAROLINA

THE STATE OF MINDS



OUR VALUE PROPOSITION

North Carolina is a premier location for biotechnology, pharmaceutical and life sciences companies because of the state's investments in a landmark workforce development initiative and the world's first state-supported biotechnology center. These investments have been leveraged to help create the third largest cluster of biotechnology, pharmaceutical and life sciences companies in the nation. Pairing those assets with a high quality of life that attracts and retains talent positions North Carolina as a location where companies can grow and prosper.

WE OFFER A HIGHLY SKILLED WORKFORCE

- More than 56,000 workers are employed with skill sets ranging from bioprocess technicians to PhDs
- Almost 8,000 undergraduate students and over 1,500 graduate students are enrolled in biology, chemistry and engineering programs in public universities throughout the state
- Every year, North Carolina institutions graduate over 5,500 students in engineering, biology and chemistry related fields
- North Carolina's 58 campus Community College System offers many biotechnology related curricula:
 - Agricultural Biotechnology
 - Chemical Technology
 - Biopharmaceutical Technology
 - Biotechnology
 - Laboratory Technology
 - Alternative Energy Technology: Biofuels

WE ARE AN ESTABLISHED, INNOVATIVE AND GROWING BIOTECHNOLOGY, PHARMACEUTICAL AND LIFE SCIENCES LEADER

- More than 520 bioscience companies are headquartered or have operations in North Carolina, employing more than 56,000 people
- The state's biotechnology industry:
 - Generates \$45.8 billion in economic activity annually
 - Grew 18 percent between 2001 and 2006, the fastest of all leading biotech states, and three times the rate of the national bioscience industry growth
- The state directed \$1.2 billion toward university research and facilities, worker training, incentives and infrastructure in the last 10 years
- North Carolina is consistently ranked in the top-five for bioscience development
- North Carolina's cost of doing business is lower than all other leading biotech states, according to the Milken Institute's Cost of Doing Business Index



The North Carolina Biotechnology Center was established in 1984 as the world's first government-sponsored initiative for economic development through biotechnology. With offices in Research Triangle Park, Wilmington, Greenville, Winston-Salem, Greater Charlotte and Asheville, it has applied more than \$200 million in state funding to build a foundation for biotechnology growth, facilitate statewide partnerships and create a biotechnology community.

– for more information, visit www.NCbiotech.org

WE OFFER THE INFRASTRUCTURE TO TAKE YOUR TECHNOLOGY TO THE NEXT LEVEL

- Nine research universities located throughout the state
- Major public and private universities conduct more than \$1 billion of sponsored research each year, most of it in the life sciences
- More than 5,000 university scientists and technicians in biotechnology-related research are located in North Carolina
- Numerous research campuses with wet lab and office space available for entrepreneurial firms including:



Research Triangle Park – the largest research park in the US – anchored by three major research universities (Duke University, NC State University and the University of North Carolina at Chapel Hill) – home to more than 100 research and development organizations, employing nearly 40,000 people



Centennial Campus – a 1,334-acre site adjacent to NC State University's main campus – home to well over 100 large and small companies, government agencies and university units



Piedmont Triad Research Park – a highly interactive, master-planned innovation community developed to support life science and information technology research and development located in downtown Winston-Salem – home to 34 business and university units that employ nearly 850 people – an expansion, led by Wake Forest University Health Sciences, is currently under way

WE HAVE STRONG EDUCATIONAL RESOURCES

A unique industry/education partnership draws on the strengths of the state's universities and community colleges to meet growing industry demands. Three principal training programs collaboratively combine academic excellence and state-of-the-art training.



BioNetwork – a network of community colleges statewide providing specialized hands-on education and training at all levels for the biopharmaceutical industry



Biomanufacturing Training and Education Center – the world's largest facility dedicated to hands-on training for biotechnology provides students with a capstone experience using large-scale equipment including bioreactors, downstream separation and purification processes, bioreactor control systems, and aseptic processing operations with emphasis on cGMP and industry standards – located on NC State University's Centennial Campus



Biomanufacturing Research Institute and Technology Enterprise – offers students training in process analytical technology and development, quality assurance and quality control at its state-of-the-art 52,000 square foot facility located at North Carolina Central University

Located on the site of the former Pillowtex campus – the largest manufacturer of sheets and towels in the world, and the site of the largest one-day layoff in North Carolina history – the **North Carolina Research Campus (NCRC)** is a private-public venture created to foster collaboration and further advancements in the fields of biotechnology, nutrition and health. At its completion, NCRC will offer more than a million square feet of state-of-the-art lab and office space, including the David H. Murdock Research Institute, which houses one of the largest and most advanced scientific equipment collections of its kind anywhere in the world, including state-of-the-art technology in genomics, proteomics and metabolomics.

Both universities and private businesses have the opportunity to test, explore and advance scientific knowledge across a variety of disciplines. On-campus universities include Duke University, UNC Chapel Hill, UNC Charlotte, NC State University, NC Central University, NC A&T State University and UNC Greensboro. Companies include Anatomics, Dole Foods, LabCorp, PPD, RedHat and Zeiss.





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WE ARE HOME TO BIOTECHNOLOGY, PHARMACEUTICAL AND LIFE SCIENCES FACILITIES

- **Andersen Scientific** provides custom sterilization and packaging services, particularly for the medical device industry from its facility in Haw River
- **Archer Daniels Midland** has a manufacturing plant in Southport that makes citric acid used in soft drinks and food products
- **Bayer Crop Science**, develops seeds and products for crop protection, non-agricultural pest control and plant biotechnology and has its NAFTA region business headquarters in Research Triangle Park
- **Baxter**, a global medical products and services company with expertise in medical devices, pharmaceuticals and biotechnology, operates a manufacturing facility in Marion
- **Biogen IDEC** is a global leader in the discovery, development, manufacturing, and commercialization of innovative therapies and has a US manufacturing facility in Research Triangle Park
- **Diosynth Biotechnology**, a global contract manufacturing organization, has its executive offices in Morrisville, manufacturing facilities in Research Triangle Park and process development labs in Cary
- **DSM Pharmaceuticals** manufactures sterile injectables (liquid and freeze-dried), solid dose (tablets and capsules), semi-solid (creams and ointments) and liquid products at its facility in Greenville
- **GlaxoSmithKline**, one of the few pharmaceutical companies researching both medicines and vaccines for the World Health Organization's three priority diseases – HIV/AIDS, tuberculosis and malaria - its US headquarters is located in Research Triangle Park
- **Harmony Labs** is a custom developer and manufacturer specializing in topical pharmaceutical and OTC semi-solids, liquids and powders at its manufacturing facility in Landis
- **LabCorp**, headquartered in Burlington, is a pioneer in genomic testing and the commercialization of new diagnostic technologies and is one of the world's largest clinical laboratories having facilities in Greenville, Kinston and Research Triangle Park
- **Merck & Co**, a global research-driven pharmaceutical company, operates a vaccine plant in Durham
- **Merz Pharmaceuticals** in Greensboro is the US subsidiary of Merz GmbH & Co. and develops and distributes high quality dermatology and podiatry products to the medical community
- **National Institute of Environmental Health Sciences**, located in Research Triangle Park, is one of 27 research institutes and centers that comprise the National Institutes of Health of the US Department of Health and Human Services
- **Novartis**, a world leader in the research and development of products to protect and improve health and well-being, has division facilities in Wilson and Holly Springs and has the headquarters of its Animal Health Division in Greensboro
- **Novo Nordisk**, a world leader in diabetes care, produces insulin for the US market in Clayton
- **Novozymes North America Inc.** operates the largest multi-purpose enzyme manufacturing plant in the US in Franklinton
- **Pfizer Animal Health Division** has poultry research and vaccination facilities in Research Triangle Park
- **Pharma Core** provides custom organic synthesis and GMP scale-up for drug discovery and development at its High Point facility
- **PPD**, a leading global contract research organization providing discovery, development and post-approval services as well as compound partnering programs, has its headquarters in Wilmington and research facilities in Morrisville and Durham
- **Quintiles** made North Carolina the "birthplace of the modern CRO" with the opening of its Durham headquarters in 1982
- **Talecris Biotherapeutics**, a global biotherapeutic and biotechnology company, headquartered its Biotherapeutics and Plasma Resources Corporate headquarters in Research Triangle Park and operates its primary manufacturing facility in Clayton
- **Ventria Bioscience** conducts research and development in Plymouth on its proprietary protein production system
- **Wyeth**, a global leader in pharmaceuticals, consumer health care products, and animal health care products, has a children's vaccine campus in Sanford

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