

Yes, Virginia, There Is Biotech in the Commonwealth

A network of resources and infrastructure facilitates the high-tech business actively courted and encouraged by the Commonwealth of Virginia.

Southern hospitality is thriving in the Commonwealth of Virginia. More than 180 biotech companies of many types and sizes are already enjoying it, and others are invited. The area's proximity to Washington, DC, makes it an attractive option for FDA-regulated industry, and plans for major infrastructure improvements such as highways and public transportation are made with that in mind. Upon election, Governor Jim Gilmore announced his "Virginia Strategy," which included goals for work force training, attracting, and maintaining emerging and developing sectors of the economy and for creating new employment and investment opportunities.

Around the Commonwealth

Virginia offers a large work force and versatile educational facilities as well as public-private partnerships, research institutes, office parks, incubators, and other resources for both established and start-up companies. The Virginia Economic Development Partnership (VEDP, www.YesVirginia.org), Virginia Biotechnology Industry Organization (VaBIO, vabio.org), and the Virginia

Center for Innovative Technology (CIT, www.cit.org) actively encourage biotech development statewide, and each region is making its own efforts as well.

Headquartered in Herndon, CIT has nine offices around the commonwealth. The organization's goal is to facilitate partnerships between intellectual property resources and private industry. VaBIO seeks to promote biotechnology, provide or facilitate education about the industry, and represent its interests through lobbying. Membership includes biotech companies, service and support companies, universities, research parks, government agencies, nonprofit organizations, and individuals.

In the News

The largest medical research charity in the United States, Howard Hughes Medical Institute, purchased a 281-acre site near Dulles International Airport in Loudoun County. The \$500 million facility planned for that site will house about 24 principal investigators on five-year appointments, with up to 300 support staff and will offer facilities for visiting scientists from around the world.

The American Type Culture Collection (ATCC, www.atcc.org) broke ground in April on an 18,000-ft² addition to its existing facility in Prince William County.

Another new facility (in Chantilly) is the 25,000-ft² BioLink laboratory that Covance opened in July 2001. This purpose-built facility will expand services

for preclinical and clinical immunoanalytical testing.

Also in July 2001, Alfa Laval established a Process Technology Center in Richmond that will offer specialized services in both separation and heat transfer technologies for industries including the life sciences.

The recently established BIO IT Coalition is a nonprofit organization intended to promote the development of bioinformatics. Founders include a number of Virginia organizations: Fairfax County Economic Development Authority, George Mason University, INOVA Health Systems, and Pepper Hamilton LLP.

George Mason University also announced in February 2002 the creation of a Center for Biodefense that will seek to address issues related to the proliferation of biological weapons and threats of bioterrorism.

Recent events include a symposium, held in May 2001, on "Geographic Information Systems Applications to Bioinformatics," which was sponsored by Virginia Tech (see "University Resources" box). The symposium focused on applying GIS analytical systems and data structures to bioinformatics and methodologies for GIS pattern recognition and analysis.

In March 2000, PPL Therapeutics announced the birth of five healthy cloned piglets at its Blacksburg location.

Research Parks and Incubators

Virginia is home to several biotechnology research

parks. Each offers its own services and incentives.

On a 34-acre site in **downtown Richmond** sits the Virginia Biotechnology Research Park (VBRP, www.vabiotech.com) near Virginia Commonwealth University (VCU) and the Medical College of Virginia hospitals. The park will ultimately offer 1.5 million ft² of laboratory and office space. It currently houses 34 private companies, four VCU institutes, and three commonwealth agencies including a world-renowned forensics institute and the Virginia Biosciences Development Center (VBDC). VBDC is a life-sciences business accelerator that offers business planning, consultation, and support services to young companies. According to executive director David Lohr, it "is trying to change the success probability" for start-ups. He referred to statistics that show 80% of incubated business surviving whereas only about 20% of others make it.

Boehringer Ingelheim Pharmaceuticals, Inc. will locate a pharmaceutical synthesis laboratory in the park. The company expects to invest \$2.5 million in the lab over the next five years.

Chesterfield County (www.co.chesterfield.va.us/business) has entered into a cooperative agreement with the VBRP to create a satellite campus on a 1,600-acre site near the James River. The VBRP at Meadowville will accommodate about two million square feet of office, laboratory, and manufacturing space.

In **Prince William County**, INNOVATION at Prince

Virginia's University-Based Resources

In addition to university-affiliated research parks, Virginia's institutions of higher learning offer a number of biotechnology programs and collaborations with business.

George Mason University (www.gmu.edu/departments/krasnow): Krasnow Institute for Advanced Study, Center for Bioresource Development, School of Computational Sciences

James Madison University (www.jsat.jmu.edu): College of Integrated Science and Technology, Virginia's Manufacturing Innovation Center

Old Dominion University (<http://web.odu.edu/sci/biotech>): Center for Biotechnology, Chemistry, and Biochemistry

The College of William and Mary (www.wm.edu/webtest/deptsheets/VIMS.htm): The School of Marine Science, Virginia Institute of Marine Science

University of Virginia (<http://marc.med.virginia.edu>): the Medical Automation Research Center, the Center for Biomathematical Technology, and a biotechnology training program

Virginia Commonwealth University (www.vcu.edu/egrweb/biochips): Center for Bioelectronics, Biosensors, and Biochips (CeB), the Center for Drug Studies, Institute for Structural Biology and Drug Discovery

Virginia Tech (www.vt.edu): Fralin Biotechnology Center, Virginia Bioinformatics Institute, the Biological Sciences Initiative

William (www.pwceondev.org) is a 1,600-acre technology park eight miles south of Dulles International Airport, 25 miles from Washington, DC, and 30 miles from NIH and FDA headquarters. The Prince William campus of George Mason University is located there, boasting a Computational Sciences Institute that specializes in bioinformatics and biotechnology in a 90,000-ft² teaching and laboratory building. The American Type Culture Collection is on the same site, along with several high-tech businesses. An incubator facility may be part of future developments.

In nearby **Fairfax County** (www.fairfaxcountyeda.org),

funding has been approved for an incubator facility in Springfield to develop bioinformatics companies. The county currently boasts nine incubators for fledgling technology companies.

The **Roanoke Valley** is home to Virginia Tech's Corporate Research Center (CRC, www.g3.net/crc) in Blacksburg. Home to about 100 high-tech businesses (including PPL Therapeutics, Inc., www.ppl-therapeutics.com, and CropTech Corporation, www.croptech.com), CRC provides business and financial assistance through banking and venture capital partnerships, training, telecommunications infrastructure, and tenant



services that include equipment and conference rooms as well as university connections (see box). It currently occupies 12 research and office buildings totaling 380,000 ft².

Collaboration between the Carilion Health System (www.biomedicalinstitute.com) and two universities, the Carilion Biomedical Institute (CBI), was formed to accelerate academic research into marketable health care products and procedures. CBI provides business support including seed money, market analysis, and prototype testing. Its first launch, BioPhile Inc., will make automated high-tech laboratory freezers (on the market later this year) that store and retrieve medical tissues, blood, and DNA samples.

Two other facilities are in the planning stage: a 457-acre site off Interstate 81 in Roanoke County that will become the Roanoke County Center for Research and Technology and the Riverside Center for Research and Technology, a 110-acre park in downtown Roanoke. CBI will be Riverside's first tenant and Novozymes Biologicals, Inc., (www.bi-chem.com) will move its research and manufacturing operation from Salem to the Roanoke County Center.

The **Charlottesville area** of south central Virginia is home

to the University of Virginia Research Park at North Fork and the Fontaine Research Park (www.virginia.edu/researchparks/northfork.htm). Fontaine is a small park adjacent to the university; North Fork is a larger, mixed-use development located near the Charlottesville/Albermarle airport.

The **Norfolk Biotech Incubator** (www.norfolk.va.us/development/biotech.htm) was recently completed by the city of Norfolk. The facility is adjacent to and attached by a walkway to the region's largest hospital, medical school, and research complex. And Old Dominion University has plans for a 67-acre park in downtown Norfolk that will offer academic, research, and corporate undertakings adjacent to its main campus.

Business Climate

Literature from Virginia's southeast corner (the Hampton Roads area) states that "Virginia, which is the northernmost right-to-work state on the East Coast, provides additional advantages to employers by being an employment-at-will state and by possessing one of the lowest average net costs in the United States for workers' compensation insurance and one of the lowest unemployment insurance tax rates in the country." Quality of life, proximity to regulatory agencies, a large work force, and available training opportunities have inspired the commonwealth's revised slogan, "Virginia is for Business."

Lorna D. McLeod