

Training Workers, Recruiting Companies, Strengthening the North Carolina Economy



BioNetwork
NC Community Colleges
Creating Success in Life Science



BRITE
Unleashing the Power of Biotech at NCCU



btec
Biomanufacturing Training
and Education Center



**NORTH CAROLINA
Pharmaceutical
Services Network**

NCBioImpact

NCBioImpact is a public/private partnership that brings together resources from the life sciences industry, the **North Carolina Biosciences Organization**, and the **North Carolina Biotechnology Center** with the University of North Carolina System and the North Carolina Community College System. This collaboration has produced an internationally recognized training program.

Education partners—each with a unique mission but a common goal—provide students and current employees with hands-on training and experience with equipment and processes used by industry.

- **BioNetwork** (N.C. Community Colleges)
- Golden LEAF Biomanufacturing Research Institute and Technology Enterprise (**BRITE** at N.C. Central University)
- Golden LEAF Biomanufacturing Training and Education Center (**BTEC** at North Carolina State University)
- North Carolina Pharmaceutical Service Network (**NCPSN** at East Carolina University and at Pitt Community College)

How NCBioImpact is Funded

NCBioImpact was founded in 2002, after leaders recognized a need to train workers to help the state’s biomanufacturing industry continue to grow. The Golden LEAF Foundation provided \$70 million in start up funds for the program’s state-of-the-art facilities and equipment. Today the N.C. General Assembly funds annual operating costs.

To expand pharmaceutical training efforts, the North Carolina Pharmaceutical Services Network was started in 2017. It received a grant from the Golden LEAF Foundation and funding from Pitt County Development Commission, Pitt County Committee of 100 and NCBiotech.

An Impressive Track Record

NCBioImpact’s focused approach to worker training helped ignite the rapid growth of North Carolina’s biotech manufacturing cluster. North Carolina consistently ranks in the top tier of life sciences clusters. Beyond biomanufacturing, the life sciences sector in North Carolina creates:

- \$84 billion in annual economic activity
- 240,000 jobs
- \$2.3 billion in state and local government revenues

AVERAGE SALARIES	
\$97K+ <i>for a job in N.C. biotech sector</i>	\$55K+ <i>early career salary in biomanufacturing</i>

Companies that have benefited from NCBioImpact training include Biogen, Grifols, GSK, Medicago, Merck, Novo Nordisk, Novozymes, Seqirus and many more.

NCBioImpact Training Partners Highlights

BioNetwork

ncbionetwork.org

BioNetwork is the life sciences training initiative of the NC Community College System. Subject matter experts design and deliver biomanufacturing and food production training, eLearning, lab testing services, and customized training solutions. Many of the courses can be delivered at a company's site, at our training facilities (Asheville and Raleigh), virtually, or locally at any of the 58 community colleges. BioNetwork provides professional development for science instructors and STEM outreach for K12 and college students. Over the past year, BioNetwork has delivered:

- Education, training, and laboratory support for 81 life sciences companies
- 153 courses for 3,332 incumbent employees or transitional workers through customized training and open enrollment courses
- Professional development for 773 science teachers and community college instructors, and 6,200+ student activities

BRITE

brite.nccu.edu

Training and research lead to life sciences careers at **North Carolina Central University's Biomanufacturing Research Institute and Technology Enterprise (BRITE)**.

In the 52,000-square-foot classroom and lab facility BRITE students earn undergraduate majors, minors, or advanced biotechnical degrees in pharmaceutical sciences or clinical sciences research. Teams of faculty, scientists and students conduct translational and basic research related to a range of other human diseases. BRITE by the numbers 2020:

- 88 bachelor's, 16 master's and 2 Ph.D. students
- 97 percent – graduates employed or in grad school
- 5 N.C. community college articulation agreements supported by NIIMBL grant
- Outreach Program engaged 15,000+ students and 800 teachers from 92 N.C. counties since inception
- High throughput screening with in-house diversity libraries available for collaborative or fee-for service drug discovery projects
- Fee-for-service screening for drug discovery projects

BTEC

btec.ncsu.edu

Undergraduates, graduate students, and working professionals come to **BTEC** for hands-on learning with the latest biomanufacturing technologies in its 77,000 gross-square-foot facilities on **NC State University's Centennial Campus**. With its pilot-scale, simulated-GMP labs, BTEC helps meet the workforce development needs of the state and delivers contract services to clients from industry and academia. During 2019–2020, BTEC:

- Enrolled 350+ NC State students in BTEC courses; graduated 50 students with an undergraduate minor, and 8 with professional science master's degrees
- Provided 25 open enrollment and customized short courses to 493 industry professionals (over 3,700 participants since 2009)
- Completed 15 bioprocess and analytical services projects (more than 190 projects since 2009)
- Was awarded a five-year, \$27 million grant from the Novo Nordisk Foundation for development of new courses and research programs in topics of importance to biopharmaceutical manufacturing

NCPSN

ncpsn.com

The **North Carolina Pharmaceutical Services Network** is a collaboration between East Carolina University and Pitt Community College that provides a continuum of pharmaceutical education and training to new and existing companies in North Carolina and beyond.

The Pharmaceutical Services Network at ECU (PSN@ECU) is a laboratory-based education and training network. Offerings include GMP/GLP courses, short courses, and analytical services.

The Pharmaceutical Services Network at PCC (PSN@PCC) provides a pilot plant type manufacturing environment and lab scale equipment to teach oral solid dosage theory and manufacturing technique. Since 2017, 400 students have participated in 50 sessions. Attendees come from regional pharma companies, including ThermoFisher, Mayne Pharma, and GSK, as well as the general public.

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**North Carolina
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