



**NORTH CAROLINA
BIOSCIENCES
ORGANIZATION**

NCBIOIMPACT HISTORY AND BACKGROUND

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- ▶ **2002:**
 - ▶ **Wyeth, Sanford**
 - ▶ **Novozymes, Franklinton**
 - ▶ **Bayer LifeScience, Clayton**
 - ▶ **Corning BioPro**
- ▶ **New Entrant:**
 - ▶ **Biogen, RTP**

Bio manufacturing is the production of useful products using living organisms.

In 2002, Biogen's needs experienced workers for its new bio manufacturing plant. They find them at existing companies.

- ▶ **Workforce Development**
 - ▶ **Ease Labor Shortage**
 - ▶ **Entry Level Workers with Commercial Scale Experience**
 - ▶ **New and Incumbent Workers**
- ▶ **Business Recruitment**
 - ▶ **Support Expansions**
 - ▶ **Recruit New Companies**

The labor shortage is clear. Community college and university graduates with hands on experience on commercial scale equipment are needed. Incumbent workers can learn new skills needed to fill higher level jobs.

- ▶ **Highlighting the Need**
 - ▶ **Leaders at UNC & NCCCS**
 - ▶ **Legislative Leadership**
 - ▶ **Golden LEAF**
- ▶ **Aligning the Resources**
 - ▶ **NCCCS – Basic Skills**
 - ▶ **NCSU – Biomanufacturing Engineers**
 - ▶ **NCCU – Analytical Chemistry**

Biomanufacturing managers meet with state leaders to discuss work force needs and economic development opportunities.

The legislature commissions a study of biomanufacturing work force needs

NCCCS, NCCU and NCSU are identified as lead institutions.

- ▶ **Golden LEAF – Capital**
 - ▶ **\$8M – NCCCS – Equipment Purchases and Curriculum Development**
 - ▶ **\$21M – NCCU/BRITE – Drug Discovery**
 - ▶ **\$40M – NCSU/BTEC + \$4.5M In-Kind Industry Match**
- ▶ **Legislature – Operating (2006-07)**
 - ▶ **NCCCS – \$5.1M**
 - ▶ **BTEC – \$5.5M**
 - ▶ **BRITE – \$6.5M**

Recognizing the biomanufacturing sector's potential job creation impact outside the State's urban cores, The Golden LEAF agrees to fund the BTEC and BRITE facilities and provide NCCCS with funds for initial operations and equipment upgrades.

Legislative leaders agree to provide operating funds for the initiative as the new facilities came on line.

- ▶ **Total Impacts**
 - ▶ **\$3.7B in New Facilities**
 - ▶ **8,500 New Jobs**
- ▶ **Major Announcements**
 - ▶ **Merck (Durham): \$1B, 1000+ jobs**
 - ▶ **Seqirus (Novartis) (Holly Springs): \$1B**
 - ▶ **Novo Nordisk (Clayton-Insulin): \$2B, 700 jobs**

The biomanufacturing work force trained by NCBioImpact since its creation in 2002 one of the largest and most robust in the nation.

This work force has prepared North Carolina to support not only future investments and job creation, but the deployment of new biomanufacturing technologies

► Challenges

- 1,500 new high-paying biomanufacturing jobs expected between 2017-2020
- Rapidly advancing technologies

► Next Steps

- Reinvest in BioNetwork, BRITE & BTEC
- Establish leadership in new national biomanufacturing R&D consortium (NIIMBL)

A 2016 survey by NC BIO found biomanufacturing companies will add 1,500 new technical employees in the next two to three years.

New technologies, including tissue engineering, will keep biomanufacturing at the forefront of economic growth and job creation.

Reinvestment in NC BioImpact will create the skilled work force that can attract jobs and investments for years to come.