

# 2004-2025 National Center for the Biotechnology Workforce Timeline 2004-2025

Visit us at [www.biotechworkforce.org](http://www.biotechworkforce.org)

October 2008 Agreement with the North Carolina Community College System established NCBW as one of seven BioNetwork centers.

**Bellevue CC Informatics**

- Co-hosted 78 state educators at Washington Community College Summit 2006
- Microsoft designates BCC as the second IT Showcase School in the nation 2006
- Program featured in the industry's top magazine, *InfoWorld*
- At the IT Convergence Zone A Rapidly Evolving Industry
- Informatics Overview: A Program Building Resource for Community and Technical Colleges published 2005

**MiraCosta Bioprocessing**

- International Society of Pharmaceutical Engineers supports design, construction of 3500-sq-ft. facility - opens to classes in November 2005 with more than \$1 million in state-of-the-art equipment
- Biogen IdeC, Genentech recognize MCC's dedicated, immersive environment for training and support new faculty and remodel of facility
- Materials Resource Program established for biotech companies to donate unused equipment for use in high schools

**Indian Hills CC Biofuels, AgBio**

- Bio-fuel laboratory techniques and fundamental scientific processes developed for teachers
- Selected as national model for community college - industry partnerships in biotechnology by the US Dept of Education
- Pilot facility grows with Cargill
- 20 new fermenters
- 80L new fermenters

**Great Bay CC Biomanufacturing**

- First in the nation Biomanufacturing Conference presentation program begins 2005
- Jan 31, 2005 Northeast Biopharmaceutical Manufacturing Industry Skill Standards finalized in consensus with industry
- First BiOMAN 06 national conference organized by Dr. Sonia Wallman July 24-28, 2006
- Sept 2007 Harmonized Biopharmaceutical Manufacturing Industry Skill Standards at NBCC working group meeting of industry and educators in Indianapolis

**Forsyth Tech R&D**

- Wake Forest Institute of Regenerative Medicine recruits three students for internships and "hands on experience"
- Ten short courses developed & delivered on campus, in the classroom, or in a biotech company lab facility
- March 2006 North Carolina Governor Michael Easley opens new technology building at Forsyth Tech, new biotechnology lab space, state-of-the-art equipment
- New recombinant DNA Technology course developed for R&D labs experimenting in nucleic acids, cloning, stem cell research

**NCBW National Center for the Biotechnology Workforce**

- June 28, 2004 President's High-Growth Job Training Initiative grant for Forsyth Technical CC in partnership with four other community colleges around the nation develop the National Center for the Biotechnology Workforce (NCBW)
- March 1, 2007 Piedmont Triad BioNight recognizes NCBW - Russ Read: excellence in community service
- May 6-9, 2007 NCBW presents "Faces of Success" at Community College Program at BIO 07 Industry Convergence Boston87, tours of Biogen IdeC, Targatec, Tengen, Wake Forest Institute in partnership with Alamance Community College and Bio-Link
- February 5-6, 2008 NCBW hosts nationwide DOL Economic Development-conference in Winston Salem.
- October 2008 BioTech Student Tracking program begins to keep graduates connected.

**October 2009: National Center for the Biotechnology Workforce Launches SciTech Ideas Lecture Series**

- June 19, 2005 NCBW presents at BIO 05 in Philadelphia, Dr. Sonia Wallman co-chair with Elaine Johnson, NSF-Bio-Link Chair.
- February, 2006 NCBW presents at symposium on "Workforce Innovation: Bio-processing & Biomanufacturing Training in partnership with BioNetwork NC community college biotech training system. Focus for first Resource Line-Tracking Trends in Biotechnology Workforce newsletter.
- October 17-19, 2007 Piedmont Triad Fly-In hosts 24 high school biotech teachers from around the country, tours of Biogen IdeC, Targatec, Tengen, Wake Forest Institute in partnership with Alamance Community College and Bio-Link.
- September 2014 Ray Cadmore, Australian Fulbright Scholar, "Integrating of Emerging Technology into Community College Curriculum" at Community College and Bio-Link.
- February 2011 Dr. Frank Carver, Forsyth Tech Director of Regenerative Medicine, "New Approaches to Healthcare"
- February 2011 Dr. Donald DeBethzy, CEO, Targatec, "The Targatec Story: From the Bench to the Clinic"

**October 2012 NCBW at Forsyth Tech awarded a Department of Labor grant of nearly \$15 million to unite twelve high-performing colleges into a Community College Consortium for Bioscience Credentials (c3bc) to work with 45 companies, employers and shareholders to develop core, industry-recognized skill sets in bioscience. High-growth industries required clearly defined skills to keep up with increasing global competition. Working together, bioscience "industry-recognized" credentials were created.**

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- October 2013 Report from the Community College Program at global BIO convention in Chicago.
- November 2013 TAA c3bc presentation to BIO Ohio on increasing need for workers in new, overlapping spheres of emerging technologies.
- December 2013 Biosciences Talent Required - a lecture to the Triad Biotech Alliance on community college, workforce board and company partnerships working to meet industry employment needs.
- June 2014 Biosciences Industry Fellowship funded by NSF-ATE, selected teachers gathered for a program with visits to NC Biosciences enterprises, producing modules for use in classrooms. YouTube Link
- March 2012 National Meeting with Manufacturing Institute, Bio-Link, NCB2, Medical Devices Educational Consortium, industry, college reps

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**Learning Technologies Hub**

Accelerate completion time through improved prior learning assessment, removal of institutional barriers and new, technology enhanced instructional materials

**Forsyth Technical**

Hub lead institution, pilots a modular learning lab, with assessments conducted and duplicated nationally.

**Rowan Cabarrus**

**Alamance**

**Medical Devices Hub**

New skill standards; stackable, latticed credentials will help trade-impacted workers get high-wage, high-skill jobs

**Ivy Tech**

Hub lead institution coordinates Medical Device companies, trade organizations, community colleges and more stakeholders to develop skill set matrices in five functional areas.

**Salt Lake City**

**St. Petersburg**

**Lab Skills Hub**

Develop new courses and credentials in the Biosciences with revised laboratory skills standards

**City College, San Francisco**

Hub lead institution, also home of the NSF national Bio-Link center, addresses lack of industry-recognized credentials, works to harmonize skill standards

**Madison Area**

**Austin**

**Montgomery County**

Hub lead institution, also home of NSF Biomanufacturing center NBCC2, leading campaign to stack credentials and access local career paths.

**Bucks County**

**Los Angeles Valley**

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**March 26-28, 2014 DOL TAACCCCT c3bc National Meeting:**

- Consensus by sessions reached in Skills Standards to identify, select and draft key activities of core critical functions common to all bioscience industries into a single document. Bio-Link has a page on skills standard work done to date - "Finding alignment"
- Gardner Carrick of NAM referred to work in skills and manufacturing in other industries at the Manufacturing Skills Standards Council web site
- Other topics included: innovative ways to assess prior learning; strategies for Workforce Investment Boards; plus a look at the library of modular teaching "granules" being built to share through the new online NTER system.

**February 2015 c3bc national meeting in Winston-Salem NC to grow bioscience training for Trade Adjustment Assistance displaced workers and others.**

**April 2015 c3bc Medical Device Hub**

national meeting to develop core skills for nationally-recognized, standard education pathways.

**June 2015 Community College Program at BIO in Philadelphia**

included "Faces of Success."

**October 12-15 2015 c3bc (TAACCCCT) Annual Meeting**

dedicated to hold standards and increased training, held at Forsyth Tech.

**June 2016 c3bc Medical Device Skills Standards published.**

Click box for full report.

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**November 28-29, 2018 The BETA Skills National Advisory Council, representing industry, education, and workforce, meets in Winston-Salem, NC. Goals - funded by the DOL grant - are to: improve workplace training through recruitment testing, aptitude assessment, course redesigns, better outreach and more retention; introduce portable, industry-recognized credentials into training; build community college capacity for education that meets employer needs; add infrastructure and build internships. Twelve partners are concentrated into four hubs:**

**North Carolina**

Russ Read, Principal Investigator

NCBW at Forsyth Tech Community College, Winston-Salem, NC

**California**

Kathy Kinkaid, EdD Co-Principal Investigator

College of the Canyons Santa Clarita, CA

**Indiana**

Sengyoung Lee, PhD Co-Principal Investigator

Ivy Tech Community College Bloomington IN

**Minnesota**

Deb Newberry, MSc Co-Principal Investigator

Newberry Technology Associates Burnsville, MN

**August 2016 Impact Magazine** charts the journey and accomplishments of the c3bc TAACCCCT grant, which grew from 12 colleges to 172 industry, academic and workforce partners across the U.S.

**NCBW Skills Development Lab** provides specialized tools to sharpen skills with classes for Forsyth Tech students, biotech employees, plus rentable space across the region.

**June 2017 Bioscience Industrial Fellowship Project (BIFP)** cohort presentations. YouTube Link

**June 2017 Impact Magazine** focuses on the expertise of the first four Bioscience Industrial Fellowship Project cohorts.

**January 2018 NCBW** named one of ten finalists for prestigious Belvedere Award at Community College Futures Assembly.

**May 2018 Natural Discoveries**, a drug discovery/novel compound discovery company, joins the National Center for Biotechnology Workforce (NCBW) lab as its first laboratory tenant.

**June 2018 The 5th annual Bioscience Industrial Fellowship Project (BIFP) cohort** gathers eleven exemplary instructors from across the U.S. for hands-on experiences that connect teaching to skills.

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**April 2019 NCBW, NCBW and Durham Technical Community College** convened twenty-three biotech companies, educators and workforce organizations to identify critical BETA skill sets for technicians working at the interface of regenerative medicine and biomedical devices.

**June 2019** The sixth Bioscience Industry Fellows (BIFP) professional development cohort of 11 fellows and advanced high school program instructors from the U.S., Jamaica, and Trinidad and Tobago. YouTube Link

**October 2019** The National Center for the Biotechnology at Forsyth Tech is awarded \$535,297 as part of a \$7.5 million National Science Foundation grant led by Austin Community College for InnovaTEBIO, a new national biotechnology education center and network that will address the rapidly growing need for highly skilled technicians in biotechnology.

**November 2019** Impact Magazine recognizes six years of success for the Bioscience Industry Fellows Project and the role of more than 30 industry, academic, and institutional partners who have provided cohorts with hands-on, on-site job experiences.

**August 2020** NCBW receives a supplemental BETA Skills grant from the NSF to focus on Cyberbioscience. The project will develop and provide professional development opportunities for instructors, create curriculum based on cybersecurity requirements for medical device good manufacturing practices (GMP), and update current skill standards to incorporate cyberbio required skills in collaboration with industry.

**January 2020** Dr. Janet N. Spriggs hosts U.S. Secretary of Labor Eugene Scalia and U.S. Representative Virginia Fox who visit the National Center for Biotechnology Workforce, the SBDO and the Analytical & Molecular Skills Development Lab.

**June 2020** Forsyth Tech Community College, home of the National Center for the Biotechnology Workforce, marks its 60th Anniversary.

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**April 2021** NCBW develops new BETA NanoBio course for colleges and STEM instructors.

**April 2021** NCBW develops new BETA Professional development program led by Co-Principals Russ Read (NCBW) and Dr. Thomas Tubon, North Carolina.

**May 2021** NSF Bioscience Workforce Distinguished Lecture Series "Scoping and Evaluating the Dynamic Biotech Workforce" features InnovaTEBIO Principal Investigators Dr. Linnea Fletcher, Russ Read, and Dr. Thomas Tubon.

**June 2021** Peter Pellerio (BIO), Russ Read (NCBW), Lori Lindburg (California Life Sciences), and Ryan Hawley (TEconomy) discuss SBDO's just-released report on the Science Workforce Trends Report at the 2021 Virtual BIO International Convention.

**June 2021** NCBW conducts two virtual BETA Skills Professional Development bootcamps for U.S. college instructors and STEM teachers: BETA CyberBio Security (June 28-30) and BETA Skills (June 9, 15, 16).

**June 2021** InnovaTEBIO launches year-long Bioscience Leadership Institute (BLI).

**November 2021** NCBW awarded \$115,989 from NSF-ATE for an in-depth fellowship program to meet demands for workforce-ready biotech professionals.

**June 2022** NCBW holds BETA NanoBio Professional development program at the Joint School of Nanoscience and Nanoelectronics (JSNN) in Greensboro, North Carolina.

**June 2022** NCBW hosts 25 community college and K12 bioscience instructors from throughout the U.S. for the final phase of the year-long InnovaTEBIO Leadership Institute (BLI).

**July 2022** NCBW BETA Skills programs showcased at NSF ATE HI-TEC Conference poster session.

**July 2022** Russ Read travels to BioMADE with education, industry, and government leaders on BioMADE's nationwide assessment of the US biotechnical manufacturing workforce.

**July 2022** NCBW BETA Skills programs showcased at the 2023 NSF ATE HI-TEC event.

**July 2023** Five community college faculty members from across the U.S. completed NCBW's immersive eight-week professional development fellowship. Meet the fellows and host companies [here](#).

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