

NCBW TIMELINE

Dec. 2014 Click dashed-line entries for more info

Bellevue CC Informatics Co-hosted 78 state educators at Washington Community College Summit 2006

Program featured in the industry journal: *BIO-IT World*

At the IT Convergence Zone: A Rapid Development Model for Skill Standards and Curriculum 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 school

Indian Hills CC Biofuels, Agbio Bio-fuel laboratory techniques and fundamental scientific processes developed for teachers

Bioreactors purchased through grant, begin to be used for training, pilot projects needed by industry

Selected as national model for community college - industry partnerships in biotechnology by the US Dept of Education

Pilot facility grows with Cargill donation of two new 80L fermenters.

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

BioNetwork supports the mission of the North Carolina Community College System aligning world class workforce training and education to biotechnology and life science industries.



December 2010 Touring Forsyth Tech, President Barack Obama praised North Carolina's leadership in renewing American scientific education, training and skilled workforce superiority.

NCBW hosts President Obama's Visit to Forsyth Tech

February 2011 report on President's endorsement of core best training practices, biotech economic impacts, more

February 5-6, 2008 NCBW hosts nationwide DOL bioscience WIRED - Workforce Innovation in Regional Economic Development - conference in Winston Salem.

October 2013 Report from the Community College Program at global BIO convention in Chicago. c3bc Hub Directors and Russ Read, Executive Director, updated participants on coordinated projects underway.

March 1, 2007 Piedmont Triad BioNight recognizes NCBW and Russ Read for excellence in community service.

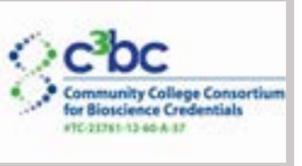
April 2010 MetLife recognizes NCBW - Forsyth Tech partnership, named finalist in National Community College Excellence competition, with \$20,000 award.

November 2013 TAA c3bc presentation to BIO Ohio on increasing need for workers in new, overlapping spheres of emerging technologies.

May 6-9, 2007 NCBW presents "Faces of Success" at Community College Program at BIO 07 Boston; subject for Biotech Resource Line.

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

January 2013 The Trade Adjustment Assistance Community College Career Training (TAACCCT) program c3bc launched at Biotech Place in Winston-Salem. 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:



Learning Technologies Hub

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

Forsyth Technical

Rowan Cabarrus

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

Alamance

Lab Skills Hub

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

City College of San Francisco

Madison Area

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

Austin

Biomufacturing Hub

Develop new biomufacturing courses, credentials and teaching materials in partnership with industry.

Montgomery County

Bucks County

Hub lead institution, also home of NSF biomufacturing center NBC2, leading campaign to stack credentials and access local career paths.

Los Angeles Valley

Medical Devices Hub

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

Ivy Tech

Salt Lake City

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

St. Petersburg

December 2013 A special edition of Forsyth Tech's biotech Impact Magazine features a complete look at the nationwide programs of the TAA C3BC.

March 26-28, 2014 DOL TAACCCT c3bc National Meeting:

• Consensus by hubs reached in Skills Standards session to identify, select and draft key activities of core critical work 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.

March 2014 Forsyth Tech leads \$15M effort to build new biotech learning model. (Triad Business Journal report)



Great Bay CC Biomufacturing

First in the nation Biomufacturing Apprenticeship program begins 2005

Jan. 31, 2005 North-east 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 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"

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

Ten short courses developed-can be delivered on campus, in the classroom, or in a biotech company lab facility

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)

February, 2006 NCBW presents at symposium on Bio-processing & Biomufacturing Training in partnership with BioNetwork NC community college biotech training system. Focus for first Resource Line -Tracking Trends in Biotechnology Workforce

www.biotechworkforce.org

July 11-13, 2006 NCBW team presents at DOL Workforce Innovations Conference, Anaheim. Honorable Mention award to NCBW.

March 2006 NCBW team presents at League for Innovations conference in Atlanta

April 9, 2006 Community College Program at BIO2006 in Chicago

October 17-19, 2007 Piedmont Triad Fly-In hosts 24 high school biotech teachers from around the country, tours of Biogen Idec, Targacept, Tengion, Wake Forest Institute in partnership with Alamance Community College and Bio-Link.

October 2008 Biotech Student Tracking program begins. a series of phases to locate, track, analyze and keep graduates connected.

2008 final report on first three years of NCBW (pdf)

NCBW SciTech Ideas In Action Lecture Series:

Sept 2012 "Career Success in Life Sciences" Doug Drabble, Director of BioNetwork

October 2012 "The Changing Landscape of Intellectual Property Protection for Biotechnology Inventions" Charles W. Calkins, Attorney and Partner Kilpatrick, Townsend & Stockton, LLP

November 2012 "From Forsyth Tech to Medical School and Beyond" Adesanmi Ojo, M.D.

March 2013 "My Journey as an Entrepreneurial Scientist, CEO and Investor" with Dr. Christy Shaffer, Venture Partner and Managing Director of Hatteras Discovery with Hatteras Venture Partners. Shaffer spoke about how entrepreneurial innovation creates new products that are transforming the practice of medicine and creating value for investors.

September 2013 Dr. Eric Tomlinson, Chief Innovation Officer at Wake Forest Baptist Medical Center and President of Wake Forest University's Innovation Quarter, shared innovations in downtown Winston-Salem, NC, collaborating in medical devices, protein drugs and mobile apps.

October 2013 Dr. Roger Cubicciotti, CEO of NanoMedica, shared expertise on the "Chemistry of Teams." Strong leadership and relationships like that can evolve in this type of working environment "chemistry."

January 2014 Gwyn F. Riddick, Executive Advisor for Strategic Development and Agricultural Biotechnology Consultant for the North Carolina Biotechnology Center, spoke on "A Race Against Time: How Biotechnology is Transforming Our Largest Critical Industry." He emphasized the urgency for the Ag Biotech Initiative's research in finding new or better crops plus new uses for plants. NC companies produce innovations such as extractions from soybean seeds to produce an oral vaccine. [You Tube Link](#)

February 2014 Dr. Stephen A. Hill, President and CEO of Targacept spoke on "Biotech: Risk and Reward." Targacept is a biopharmaceutical company engaged in the development of novel treatments of various diseases and disorders of the nervous system. [You Tube Link](#)

March 2014 Paul Kortenaar, PhD Executive Director of SciWorks, a science museum in Winston-Salem with a planetarium and a 17-acre outdoor Environmental and Science Park, spoke about "Education for Innovation: Preparing Students and Their Teachers to Work in a World of Technology Change." [You Tube Link](#)

June 2014 Celeste Carter, National Science Foundation Program Director, spoke on funding opportunities

September 2014 Forsyth Tech hosted a Fulbright Scholar from Australia - Ray Cadmore. In his PowerPoint presentation he compared issues and ideas on how to engage emerging technologies in community college courses. [You Tube Link](#)

October 2014 Dr. David McNelis from UNC at Chapel Hill gave a talk on renewable energy.

Nov 2014 Biosciences Industry Fellowship participants reported on experiences during their program in June. Ten fellows from six states, funded by an NSF-ATE award, visited NC Bioscience enterprises and resources, including colleges, labs and research activities. They told the audience the experience was "life changing" in bringing new ways to teach in their own labs and classrooms.

March 2012 National Meeting with Manufacturing Institute, Bio-Link, NBC2, Medical Devices Educational Consortium, industry, college reps

June 2014 Community College Program at BIO PowerPoint presentation by Russ Read: Bench to Bedside shows many jobs involved in biopharmaceutical development. Plus PDF report available here: CCP@BIO_14

June 2014 Biosciences Industry Fellowship Program, funded by NSF-ATE, selected teachers gathered in Winston-Salem for a month-long program with visits to NC Biosciences facilities. Participants produced modules to use in classrooms.

September 2014 Tech Council Meeting PowerPoint presentation by Russ Read & Michael Ayers address talent required for biotech jobs, including alumni video: [You Tube Link](#)

October 2014 c3bc Medical Device Hub held a National Meeting with industry. The Medical Device Core Skills were reviewed.

October 2014 Draft Laboratory Bioscience Core Skill Standards are posted for review.

November 2014 The c3bc Committee for Bioscience Common Core Skill Standards drafted Core Skills Standards currently being reviewed by industry experts provided by the Coalition for State Biosciences Institutes.

December 2014 presentation to NCBC Piedmont Triad Biotechnology Advisory Committee.