

NCBW TIMELINE

May 2015 Click dashed-line entries for more info

Bellevue CC Informatics

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

Biogen Idec, Genentech recognize MCC's dedicated, immersive environment for training and support new faculty and remodel of facility

Indian Hills CC Biofuels, Agbio

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

Great Bay CC Biomanufacturing

Jan. 31, 2005 North-east Biopharmaceutical Manufacturing Industry Skill Standards finalized in consensus with industry

Forsyth Tech R&D

March, 2006 North Carolina Governor Michael Easley opens new technology building at Forsyth Tech, new biotechnology lab space, state-of-the-art equipment

NCBW

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)

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.



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

Microsoft designates BCC as its second IT Showcase School in the nation 2006

Informatics Overview: A Program Building Resource for Community and Technical Colleges published 2006

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

Materials Resource Program established for biotech companies to donate unused equipment for use in high schools

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

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

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

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

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

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) now working with 45 companies, employers and shareholders to develop core, industry-recognized skill sets in bioscience. High-growth industries require clearly defined skills to keep up with increasing global competition. Working together, bioscience "industry-recognized" credentials will be created.

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

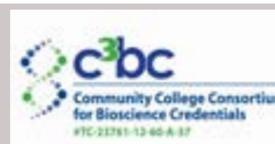
February 5-6, 2008 NCBW hosts nationwide DOL bioscience WIREd - Workforce Innovation in Regional Economic Development - conference in Winston Salem.

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.

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

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

Alamance

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

Lab Skills Hub

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

City College of San Francisco

Madison Area

Austin

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

Biomufacturing Hub

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

Montgomery County

Bucks County

Los Angeles Valley

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

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.

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)

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.

Oct 2014 Draft Laboratory Bioscience Core Skill Standards posted.

Nov 2014 c3bc Committee for Bioscience Common Core Skill Standards drafts standards reviewed by Coalition for State Biosciences Institutes experts.

Dec 2014 presentation to the NCBC Piedmont Triad Biotechnology Advisory Committee.

2005

2006

2007

2008

2009

2010

2011

2012

2013

2014

2015

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

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 BIO 2006 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.

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

www.biotechworkforce.org

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 Nano-Medica, shared expertise on "Chemistry of Teams." Strong leadership and relationships 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](#)

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

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. [YouTube 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 for biotech training.

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. [YouTube Link](#)

October 2014 Dr. David McNelis from UNC Chapel Hill spoke on the issues and future of renewable energy. [YouTube Link](#)

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

February 2015 Anthony Atala M.D., Director, Wake Forest Institute for Regenerative Medicine and Chair of the Urology Department at WFU, presented, in conjunction with the 2015 National c3bc Meeting, a lecture on "Regenerative Medicine: Current Concepts and Changing Trends." [YouTube Link](#)

March 2015 Jennifer Bryant presented "CSI In The Real World" contrasting television's investigative drama shows with the real life hours involved in searching, documenting, collecting and packaging any and all evidence found at a crime scene. She discussed the skills required for this high-tech job and the varied work environments involved in law enforcement. [You Tube Link](#)

Feb 2015 c3bc national meeting in Winston-Salem NC to review and advance work growing bioscience training for Trade Adjustment Assistance displaced workers and others. Milestones published in Impact magazine include gains in credit hours, new equipment installed and increasing certificate programs.

Feb 2015 the c3bc National Advisory Council Meeting held its first meeting to review accomplishments and progress in upgrading and increasing delivery of career bioscience training in the grant's third year.

March 2015 presentation to NC Academy of Science at Wake Forest Biotech Place in Winston-Salem, NC on the theme of "Innovation in Research."

April 2015 c3bc Medical Device Hub held its national meeting at the College of the Canyons in Valencia, CA. Industry and community college partners gathered to develop core skills for nationally-recognized, standard education pathways.