

Biotech Workforce Development: Much Accomplished, Much More To Do

Many enjoying the evening's event - with a record turnout despite recessionary times - were the same ones who helped create the workforce development partnerships, programs and campaigns that ended up bringing good-paying biotechnology jobs to the region and the state.

A feeling of shared achievement filled the hall. It was a feeling backed up by facts. Since 2003, for example, a total of 53 companies have established or sited here.

One strength that distinguishes the Piedmont Triad region is the value biotechnology companies put on training here. It's a value they encourage with professional and economic support. Leading companies in the region, Biogen Idec, Bio-Rad and Shelco, for example, added to the enthusiasm and spirit of the Triad BioNight by sponsoring extra tables so biotechnology faculty, graduates and students could also attend, and join in the festivities.

Many stakeholders gathered together for this event, with each sector and demographic represented. Partnerships put in place by leaders from different industries and sectors, all working together, have yielded desirable results in the Piedmont Region.

Take the case of Ameritox, Ltd., the nation's leader in pain prescription monitoring.

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Leaders, stakeholders, all celebrate together, present awards at Piedmont Triad BioNight



Forsyth Tech biotechnology graduate Mica Welsh (NCBW), who started out as a truck driver and is now a senior at Salem College thanks to advantageous articulation agreements, exchanges ideas with Dr. Anthony Atala, regenerative medicine leader and keynote speaker at the Triad BioNight.

Shown standing during BioNight are (left) Judy (Rowell) Berry, Sr. Administrative Assistant of North Carolina Biotechnology Center's Piedmont Triad Office and (right) Bill Woodruff head of Alamance Community College Biotechnology department and member of the Piedmont Triad biotechnology advisory committee that helped organize the event. Loud applause they received was among many moments observing accomplishments in the growth of the state's biotechnology workforce that evening.

Karen Hicks
Human Resources Sr. Director - Targacept

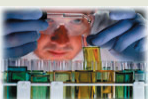


“ We have great success in recruiting and retaining top talent. Targacept's collaborations with local academic institutions affords us the ability to hire trained lab technicians from our area which brings a real benefit in meeting our business needs and freeing up our Ph.D. scientists' time from performing routine assay and sample preparation, cell culture, chromatography work and the like.”

Awards presented for workforce development and more



Tim Janke (right) accepts his award for Biotechnology Service & Support from presenters Terry Conrad (left) and Russ Read (NCBW)



The mission of the National Center for the Biotechnology Workforce is to represent, support and provide leadership at the national level with compatible biotechnology workforce organizations, education or training institutions and support NCCCS BioNetwork, Forsyth Tech, North Carolina and the Piedmont Triad Biosciences community.



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Ameritox plans to hire about 228 employees in Greensboro by 2010, thanks to a new laboratory and material analysis facility. A powerful factor in the company's decision to grow is the excellent training offered nearby at Guilford Technical Community College, the BioNetwork Pharmaceutical Center based at Forsyth Tech in the Piedmont Triad Research Park, and the North Carolina Biotechnology Center.

J. Donald deBethizy, Ph.D. - President & CEO - Targacept



"We're hiring. We just got \$45 million in funding in October and are putting that in local banks. We had our finger in the dike, now we're responding. (Forsyth Tech biotechnology graduate) Regina Whitaker represents the kind of people we need - hardworking, focused, well trained. And we keep it going within the company, we promote. You can move up. This cycle opens spots for entry."

Piedmont Triad BioNight was created by partnerships, people working together to grow the region's biotechnology industry cluster. To succeed, workforce development must combine diverse worlds of business, education, community, economic development, and government. No one can be left out. All developing forces must come together to populate and maintain a training system capable of supplying companies with the skilled employees they need, locally.



Volunteers make BioNight possible. Mona Cofer, (NCBW), shown here helping an arriving participant, also works to coordinate the many efforts involved in staging the event.

Tables were filled with managers, administrators, employees, students, graduates, executives and representatives from medical supply, biotechnology and related life science and support industries, along with Chamber of Commerce officials, government representatives - United States Senator Kay Hagan was present - and many more. Everyone was enjoying the cuisine, mixing and mingling, participating in a celebration of economic and industrial progress in the Piedmont. Here's a look at some of the outstanding participants, with a feel for their current ideas and goals.

A special reception sponsored by Targacept preceded the program enabling friends and colleagues from different sectors to meet and converse. Here National Center for the Biotechnology Workforce Director Russ Read (left) talks with Charles Calkins, one of the evening's award nominees and a committee advisor. He works with Kilpatrick Stockton, a primary sponsor of BioNight.



Stakeholders from all parts of the region and economy gathered together and a feeling of achievement - backed up by healthy growth numbers - filled the room.



Dr. Gary Green - President - Forsyth Tech Community College

"There's a great spirit in workforce development in the community college system, big enrollments, we're leaping forward. I remember ten years ago, there were half as many people involved. In 2001, during the last recession, we realized we had to do something to help the loss of jobs in textiles, furniture and tobacco. People and groups were trying to come together to create the jobs of tomorrow. We saw jobs in the knowledge sector, in the research departments of Wake Forest Health Services, for example, that were going unfilled. How do you grow while your traditional industries are dying? Our initial 'Textiles to Technology' program rescued some jobs, gave hope in a time of cutbacks. Since then it's kept growing. And there are many ripple effects, more jobs are created in support industries, banking, training, accounting, and more."



Leaders, stakeholders, celebrate together, present awards at Piedmont Triad BioNight



Today, an estimated 9,500 people work in the region's biotechnology industry. New companies open in places like Gateway University Research Park, a technology-based development good for the workforce, focused on biological, life, and nanotechnology sciences; or Winston-Salem's Piedmont Triad Research Park, an interactive community innovation in support of new life science, nanomedicine and regenerative medicine industries.

But to fully understand the feeling of achievement at the Piedmont Triad BioNight celebration, you must look back to a time before all these jobs, all these thriving developments, networks and collaborations ever existed in the region. Back to when the North Carolina Biotechnology Center was founded in 1984 as the world's first government-funded targeted initiative for biotechnology development. Not long after, in 1985, Alamance Community College launched the nation's first associate degree program in biotechnology.

Bill Woodruff guides the Alamance program which today operates in a new facility, opened in 2007, training students in lab safety and concepts of cGMP, aseptic and sterile techniques (clean room), microbiology, cell culture, immunology, genomics, and bioprocess skills.

Hands-on internships are a fundamental part of the training. Students are hired in a wide variety of jobs, including research and laboratory assistants at universities, hospitals and production facilities; and employed as bioprocess operators, department supervisors in chemical and diagnostic labs, plus in municipal water treatment positions. Articulation agreements among colleges and internship experiences with companies help grads make the right moves in their careers.

Skills to find these jobs are gained using learning kits and materials produced by **Bio-Rad**, a company linked to training and very supportive of it. Bio-Rad sponsored a table and Dr. Laurie Usinger flew in from California to add her personal support. Joining her were Bio-Rad's Dr. Sherrie Andrews, Alamance Biotechnology Department Head Bill Woodruff, Tom Lucier, Randy Duren (a BioNight award nominee from South Piedmont), Dr. George Whitesides of Guilford, Dr. Debbie Pritchard (FT), and Dr. Toby Mapes (A-B Tech).

The curriculum modules Bio-Rad collaboratively designs to accompany their learning kits provide scenarios that engage students' interests and help teachers align with industry and regulatory standards and demands. With Bio-Rad kits, students use the

same techniques that scientists use in labs every day.

Not only does North Carolina have the oldest community college biotechnology program, it has the state's largest - Forsyth Tech.

Recipient of multiple grants and support, Forsyth Tech created competency models to accurately address needs of industry partners and create a comprehensive, demand-driven program. It continues to respond to employer and community needs. Robust partnerships with numerous companies and industry partners advantage students with real world, hands-on learning in on-the-job internships.

Forsyth Tech creates articulation agreements - enabling students to quickly advance. Most of its graduates are employed now as R&D lab technicians. With its new building and fully-equipped facility, Forsyth Tech not only trains for needed workers, it innovates and develops new curricula and training models that can be replicated across the nation. The number of highly-skilled technicians produced increases as the center grows into a network of community colleges. This helps expand biotechnician training across the nation to grow our high-tech workforce.

Gathered around the Forsyth Tech table were Dr. Gary Green, Dr. Conley Winebarger, Dr. Dwaine Davis, Alan Beard, Rick Mutton, Dr. Aziz Ahmad (a biotechnology student who is a medical doctor originally from Afghanistan), and Dr. Lucien Houenou. For the first time, a whole class of biotechnology students was able to attend, thanks to **Shelco** sponsorship. Instructor Dr. Aju Lekwauwa was able to bring his technicians-in-training.

Biogen Idec is a perfect example of how partnerships between private industry and public educational institutions can truly make a difference in the lives of students through its scholarships and other programs. Patients in more than 90 countries benefit from Biogen Idec's significant products that address diseases such as lymphoma, multiple sclerosis, and rheumatoid arthritis.

BioNight tables sponsored by Biogen Idec brought Nick Meacham, Mica Welsh, Mona Cofer, Phil Sheridan (Bio-Network), John Grady, Bobby Kanode (FT grad) and Pamela Hayden (FT grad) together. Also at the table was Jim Crawford, a graduate of FT currently doing a

masters in biotechnology ethics at Wake Forest. It was recently announced he has switched jobs and joined a spin out of WFIRM - another demonstration of career pathing. He is a graduate who's an active mentor helping bring the benefits of continuing education to more people.



Leslie Miller is a Forsyth Tech graduate now attending Salem College "I was an education major but my biology teacher motivated me to switch. Great faculty at Forsyth. I plan to get my bachelor's, master's and go on to Ph.D."



Training workers of the future, Forsyth Tech faculty members Dr. Lucien Houenou (left) and Lead Instructor Alan Beard engage in new scientific research projects to develop new learning techniques and help mentor students.



Mona Cofer, Alan Beard, Elizabeth Robinson, Nancy Johnson, Nicholas Meacham (NCBW), Bob Haack, Event Co-Chair, (one of the volunteers who produced Bio-Night), Russ Read, Mica Welsh, Dr. Anthony Atala - all people working together to build and maintain a strong workforce for a growing biotechnology cluster.



Looking to the future

With a lot to celebrate together at BioNight were (from left) Bill Dean, Lauren Stainbeck and Gwyn Riddick.



Stainbeck is CEO of Triad Forensics Laboratory, which does crime lab work among its numerous high-tech, analytic services. Dean, while he was director of the Piedmont Triad Research Park, teamed up with Riddick in recruiting her company as a new tenant in the Wet Lab LaunchPad low-cost lab facility.

They also recruited another new tenant: Carolina Liquid Chemistries, a \$10 million laboratory testing and equipment company based in California. "This area has really great people," CEO Phil Shugart said. "With Wake Forest and Forsyth Tech and the others, there's an abundance of well-educated people, and I think the work ethic seems a little better here." Both companies want to do student internships and eventually hire.

Meanwhile, Riddick has been making his own news. The N.C. Biotechnology Center created a new position that will oversee a big effort to boost the state's agriculture economy over the next ten years, naming him Vice President of the Ag/Bio initiative. Currently director of the Biotech Center's Piedmont Triad office, his promotion brings a big challenge: expand the state's agriculture economy to \$100 billion a year from \$70 billion. He will work closely with biotechnology resources to do this.

International Links Strengthened



Elizabeth Robinson, Canadian Consulate (left) and Liliane Laverdiere, Investment Quebec (right) discuss new opportunities and strategies for pursuing them with Dr. Anthony Atala.

Awards Recognize Innovation And Excellence

The Piedmont Triad Biotechnology Excellence Awards focus on a full spectrum of qualities required to achieve and maintain successful growth in the cluster. The award for Entrepreneurial Excellence recognizes community commitment, along with business acumen. The Community Leadership award seeks regional thinking, vision and action through collaborations and partnerships. Research and Development Excellence can mean outside the box solutions to increase success.

Tim Janke, Bill Dean, Roland Johnson, Dr. Adnan Mjalli (accepted by William Shore), Dr. Donald Cameron



The Academic Excellence award went to Dr. Donald Cameron, president of Guilford Technical Community College.

"Our articulation agreements with Alamance Community College and Forsyth Tech offer advantages to students. These opportunities extend further in our collaboration with the NC BioNetwork Pharmaceutical Center, jointly managed by Guilford Tech and ForsythTech."



Dr. Donald Cameron

Workforce Training Success

- 1 **Create Biotech** programs with skill sets adjusted to the employer's and community needs.
- 2 **Create Articulation Agreements** that allow students to get early college credit or programs that offer one plus one arrangements or articulations to four year colleges (with two plus twos).
- 3 **Mentor Students** through internship experiences working in biotech companies.
- 4 **Work With Graduates** to assure their interests are met through continuing education programs.
- 5 **Celebrate** successful community achievements.

Sponsor Levels

- BioInvestor:** Kilpatrick Stockton
- BioChampion:** COOK medical
- BioLeaders:** Greensboro Partnership, Lab Corp
- BioFriends:** Banner PharmaCaps, Piedmont Triad Research Park, Wachovia, a Wells Fargo Company
- Private reception:** Targacept
- Dinner beverage:** Cato Research
- Biotechnology Event Grant:** North Carolina Biotechnology Center

Table Sponsors

Branch Banking & Trust, Biogen Idec, Bio-Rad, Canadian Consulate, Investment Quebec, Duke Energy, Ernst & Young, Forsyth Technical Community College, Gateway University Research Park, Kilpatrick Stockton, O'Brien Atkins Associates, Prudential Carolinas Realty, Shelco, Specialty Operations Solutions, Stantec, Statewide Development, North Carolina Biotechnology Center, Targacept, The Budd Group, Office of Research & Economic Development, UNCG, Wake Forest Institute for Regenerative Medicine.

Thanks to the sponsors, partners, supporters and friends

Program Hosts

Advisory Committee for Biotechnology in the Piedmont Triad, Biotechnology Events Project Team, Piedmont Triad Office, North Carolina Biotechnology Center, Greensboro Chamber of Commerce

Organizing Hosts

Piedmont Triad Office, North Carolina Biotechnology Center, Greensboro Chamber of Commerce, Piedmont Triad Partnership
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