COMMUNITY COLLEGE CONSORTIUM FOR BIOSCIENCE CREDENTIALS (c³bc)

Capturing Best Practices on Bioscience Training Programs
The Manufacturing Institute highlighted six schools — Los Angeles Valley College, Forsyth Technical Community College, Salt Lake Community College, St. Petersburg College, Austin Community College, and Ivy Tech Community College — from the Community College Consortium of Bioscience Credentials (c3bc) to showcase impact and success from their bioscience programs.

The c3bc is a multistate consortium of 12 community colleges engaged in an educational and training initiative funded by the U.S. Department of Labor under grant TC-23761-12-60-A-37 led by the National Center for the Biotechnology Workforce based at Forsyth Technical Community College, Winston Salem, NC. Under the c3bc, 12 Community Colleges nationwide coordinate to support strategies to assist grant participants to obtain employment in high-wage, high-skill occupations, such as biotechnology, biomanufacturing, and medical devices.

This product was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, expressed or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.
"THE MANUFACTURING TECHNICIANS ARE THE MOST IMPORTANT PEOPLE IN THE COMPANY. THESE ARE THE EMPLOYEES RESPONSIBLE FOR PRODUCING A PRODUCT THAT CAN EASILY COST OVER A HALF OF A MILLION DOLLARS FOR ONE LOT. THEY ARE THE KEY TO SUCCESS OF THE COMPANY."

Willie Zuniga, President, Grifols Biologicals Inc.
Employees hired via HR and normal onboarding procedures:

- **23% turnover**

Bridge participant employees:

- **5% turnover**

**Companies Receive High Return on Investment from Partnership with LAVC’s Biotech Bridge**

Los Angeles Valley College Prepares Students for Biomanufacturing Careers

Finding quality workers takes time and money. Training them to specific company standards takes even more.

Los Angeles Valley College developed its Biotech Bridge Training program to build a pipeline of talent to fill open manufacturing technician positions.

As part of the Community College Consortium for Bioscience Credentials (c³bc), LAVC developed a six-week program designed to help students develop a much-needed set of core skills and competencies targeted specifically for the bioscience industry. From the program, students receive employability skills, resume and interview preparation, contextualized math and science, and a guaranteed interview upon completing the courses.

**BAXALTA HIRED 80% - 85% OF STUDENTS COMING OUT OF LAVC BRIDGE ACADEMY**

Baxalta, a global biopharmaceutical company located in Los Angeles, began its partnership with LAVC to find qualified employees with a commitment to the industry. In the past seven years, Baxalta has hired 96 students from the LAVC Biotech Bridge Program.

**Baxalta’s investment in LAVC? Just time.**

Instead of the high costs associated with company specific training, Baxalta provided LAVC two employees for one day of support during the screening process, as well as offering selected students a tour of the plant floor.

The screening process is critical to Baxalta. As Dave Arnold, Plant Manager at Baxalta, explains, “The level of commitment demonstrated from the selected students guarantees that this is someone who really wants to work in the biotech industry. This passion is exactly what we are looking for in prospective employees.”

Not only do employers get a talent pipeline with technical and employability skills that are in high demand, but LAVC has also been able to customize its training based on company needs, including an increased understanding of fractionation.

“LAVC provides such a great resource of diverse talent. They have connections, they can do the sourcing, and it really doesn’t cost us anything. I don’t have to hire another recruiter. It has been a win-win partnership for us,” said Liz Schulz, Director, Human Resources, Baxalta.
Grifols Biologicals Inc. (GBI) is a biopharmaceutical manufacturing company that produces life-saving plasma protein therapies.

Up, up, up the ladder.
Willie Zuniga started as a manufacturing technician over 35 years ago. After working his way to become the President of GBI, Willie knows the value of hiring the right technicians and considers it one of his most important duties. Currently, more than half of GBI’s 800 employees are manufacturing technicians. These are the employees responsible for producing a product that can easily cost over a half of a million dollars for one lot. According to Willie, they are the key to the success of the company. “In general, entry level employees that are hired from places such as monster.com don’t have certain skills such as knowing what the metric system is or how to measure pH. As a result they take longer to train.” A partnership with LAVC is a perfect solution for finding employees with the basic training already covered.

Saving money. Saving time. Creating futures.
Grifols is currently only investing time into the LAVC Biotech Bridge program. For the 25 students they have hired, the return on investment is priceless. “They (LAVC) have already done a big part of my job by taking 300 applicants and filtering it down to 30 students.” Grifols hires the students as full time employees; rather than temps, and is particular about the employees they hire which results in a low 6.1% turnover rate.

“I don’t think other companies understand the great return on investment you can get from this… I see people we have hired from this program growing within our company and creating better futures for themselves and for their families. To me, that is priceless. The reason we will be the best manufacturing company is because we will have the best people, including the manufacturing technicians,” Willie said.
BAXALTA EMPLOYEE SPOTLIGHTS

“[LAVC] changed my life. Before I was just a garment sewer, but with this training I was able to land a more rewarding job.”
- Edelita Reyes, LAVC Bridge Academy graduate

“We’re saving peoples lives, and that’s something I wake up and look forward to every day – making a difference in the world.”
- Christian Salgado, LAVC Bridge Academy graduate

“I wanted to have an impact on medicine, but research wasn’t directly affecting medicine. My work now is allowing me to do so.”
- Marcela Maldonado, PhD and LAVC Bridge Academy graduate

GRIFOLS EMPLOYEE SPOTLIGHTS

Jason Hice was a stepfather, a bartender, and needed a new career to support his family. After seeing a flyer for the Academy, Jason applied and was accepted into the Bridge program. He was hired by Grifols after completing the training, and one year later still has his certificate framed above his door. “The technical skills I learned from this program definitely set me above the others. When my supervisor talks about blood pathology, I know what they’re talking about and a lot of people at my level don’t know that stuff.”

After getting her B.S. in microbiology, Leanna Tripathi, started a family and stayed home to raise her children. She soon wanted to get back into the workforce and came across the LAVC program. Upon completion, Leanna was offered a position in quality at Grifols. With her degree in microbiology and her training at LAVC, Leanna was the perfect candidate. “It’s not a job, it’s a career for me,” Leanna said.

Program:
LAVC conducted eight cohorts of a six week biomanufacturing program. The program was eight hours a day, five days a week, for a total of 200 training hours. The purpose of the program is to “Bridge” job seekers into entry-level jobs.
The Biotech Bridge Training Academy is an innovative job training program designed to train members to become a Manufacturing Technician I, and to prepare members for an interview with local bioscience employers. The training is at no cost to the participants.

School:
Los Angeles Valley College

Point of contact:
Lennie Ciufo
Director, Job Training
LAVC

Average class size:
20-30 students

Average placement rate:
90%

About the C³BC:
The Community College Consortium for Bioscience Credentials (C³BC) is a multistate consortium of 12 community colleges engaged in an educational and training initiative funded by the U.S. Department of Labor under grant TC-23761-12-60-A-37. Under the C³BC, 12 Community Colleges nationwide coordinate to support the following strategies to assist grant participants to obtain employment in high-wage, high-skill occupations, such as biotechnology, biomanufacturing, and medical devices:
1. Harmonize a set of core skills across the biosciences and embed stackable and latticed, industry-recognized credentials into training for biosciences jobs that will create career pathways for TAA-eligible and other displaced workers.
2. Improve and expand recruitment, testing and aptitude assessment for trade-impacted workers in tandem with the public workforce system. This will help fill industry demand for biosciences workers.
3. Expand and improve the delivery of education and career training programs at the Community College level. Accelerate completion time in certificate/credentialing programs through improved assessment of prior learning, focused support services, the removal of institutional barriers and development of technology.
4. Build community college capacity for biosciences education and training that meets local, state and national employer needs across subsectors of laboratory skills, biomanufacturing and medical devices.

This product was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, expressed or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.

Community College Consortium for Bioscience Credentials (C³BC):
FORSYTH TECH DELIVERS “INVALUABLE TRAINING” OPPORTUNITIES TO HERBALIFE EMPLOYEES.

As a result of partnership, Herbalife has improved its production, quality, and retention.
Herbalife has seen a reduction in turnover and an increase in promotions.

Training a quality workforce takes time. Training them up to your standards takes even more.

Forsyth Technical Community College, along with Herbalife and the NC Community College System Office, worked together to develop a Customized Training Project that would enable Herbalife to hire a highly skilled workforce. Once employees were hired and initial training had been received, additional training was then offered in order to help Herbalife upskill their current workforce to meet company standards.

As part of the Community College Consortium for Bioscience Credentials (C3bc) grant, Forsyth Technical Community College developed online bioscience training to accelerate learning and make education more accessible. With Economic Development funds granted from the state, Forsyth Tech gave Herbalife employees access to a variety of training programs. Taking full advantage of this training, Herbalife began using it for new and current employees.

TRAINING TO HERABLIFE’S STANDARDS

When Patrick O’Sullivan, supervisor of Industrial Training, started at Herbalife’s Innovation and Manufacturing facility, a facility that manufactures nutrition supplements, weight management, sports nutrition and personal-care products, the training program needed to be developed. O’Sullivan worked closely with FTCC’s Project Manager Dianne Mounce to develop programs which would be valuable to a new manufacturing facility. Over a two-year period, O’Sullivan began a close relationship with Forsyth Technical Community College and Mounce to provide incumbent worker training. Today, every employee must receive five hours of GMP (Good Manufacturing Practice) and Safety training from Forsyth Tech as an introductory training.

Employees who have worked at Herbalife for three months or more are brought back through a training with Forsyth and Herbalife for two hours of manufacturing best practices plus OSHA 10-hour training, also supplied through Herbalife and Forsyth Tech. This training allows employees to obtain a variety of manufacturing skills and allows them to begin to move into different career pathways.

When asked if the training through Forsyth Tech was making a difference, O’Sullivan had one adamant response: “Oh, it’s working.”

In addition, every manufacturing candidate must pass the National Career Readiness Certificate, hosted through Forsyth Tech. “We were having trouble finding qualified candidates and have worked closely
with Forsyth Tech to help with that. Their time and contributions have been invaluable,” O’Sullivan said.

Forsyth Tech is not only providing Safety and GMP training for Herbalife, they are also providing leadership training, American Society of Quality training, and third party vendor training. The company has numerous people going through Green Belt training, where employees will present their end-of-training projects to upper management to show how this has benefitted the company. Also offered through Forsyth Tech is supply chain training through its local APICS organization. “We are putting half a dozen people through calibration training so if it’s 4 a.m. and something goes down, our maintenance crew can troubleshoot and fix it,” O’Sullivan said.

“[The training] is going to save money. I’ve tried to take the money and spread it across the entire facility. Manufacturing is using it, supply chain is using it, quality is using it, and training is using it. I’m trying to get as many people involved as possible,” O’Sullivan said.

With training from Forsyth Tech, Herbalife’s employees have more career options. “We are purposeful with career paths," O’Sullivan explained.

After successful completion of an initial work period, operators may be eligible to go through level 1 of the "toolbox training" and may receive a salary increase if they successfully complete the program. Many employees have gone through the toolbox training program, and Herbalife has seen a decreased turnover rate. Employees have gone through the program and have seen promotions.

Herbalife has struggled to find GMP experience and get employees to the skill level required. This is where Forsyth Tech has stepped in. “Training is stressed to the Herbalife team. It’s giving [employees] the opportunity to grow and think about what that’s doing for them. It shows we believe in our people, and we are working together to develop everyone. At the same time, you’re helping their own personal confidence,” O’Sullivan said.

“Most companies don’t realize the value of the training. You build moral with the person, you build self-esteem with the person – and at what cost? Just a couple hours away from the floor. Investing in people keeps them here. Without a doubt.”

- Patrick O’Sullivan, Supervisor, Industrial Training, Herbalife
HERBALIFE EMPLOYEE SPOTLIGHTS

"Before coming here, I was working at Subway and didn’t know anything about Manufacturing. From the training, I learned an immense amount - a lot of things that will help me for the future. I think it was definitely effective."
- Zach Brown, Team Lead, Herbalife

"I worked in manufacturing before. Working with the food part of it, I learned a lot of regulations that you can or can’t do. The training that they give us here is very extensive and keeps us on track. They offer these classes, and we know we can use them down the road. The majority of the people want to take them to help them move up."
- Cynthia Thomas, Packaging Operator, Herbalife

HERBALIFE

Cynthia Thomas and Zach Brown

Certification Training:
- National Career Readiness Certificate
- APICS
- American Society of Quality
- OSHA
- GMP

School:
- Forsyth Technical Community College

Number of Courses Taken:
- 3,368

Point of contact:
Jennifer Coulombe
Dean, Business & Industry Services
Forsyth Technical Community College
jcoulombe@forsythtech.edu

About the C3BC:
The Community College Consortium for Bioscience Credentials (C3BC) is a multistate consortium of 12 community colleges engaged in an educational and training initiative funded by the U.S. Department of Labor under grant TC-23761-12-60-A-37. Under the C3BC, 12 Community Colleges nationwide coordinate to support the following strategies to assist grant participants to obtain employment in high-wage, high-skill occupations, such as biotechnology, biomanufacturing, and medical devices:
1. Harmonize a set of core skills across the biosciences and embed stackable and latticed, industry-recognized credentials into training for biosciences jobs that will create career pathways for TAA-eligible and other displaced workers.
2. Improve and expand recruitment, testing and aptitude assessment for trade-impacted workers in tandem with the public workforce system. This will help fill industry demand for biosciences workers.
3. Expand and improve the delivery of education and career training programs at the Community College level. Accelerate completion time in certificate/credentialing programs through improved assessment of prior learning, focused support services, the removal of institutional barriers and development of technology.
4. Build community college capacity for biosciences education and training that meets local, state and national employer needs across subsectors of laboratory skills, biomanufacturing and medical devices.

This product was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, expressed or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.
“IF I DIDN’T SEE THE VALUE IN THE SLCC PROGRAM, THEN I WOULDN’T CONTINUE TO SUPPORT IT.”

Gina Bergman, Director of Quality Assurance and Regulatory Compliance, BioFire
Salt Lake Community College Trains Workers in the Medical Device Industry

Finding quality workers takes time and money. Training them to specific company standards takes even more.

Salt Lake Community College (SLCC) developed its Medical Device Manufacturing program to build a pipeline of talent and increase the knowledge and skill set of those in medical device careers. As part of the Community College Consortium for Bioscience Credentials (c3bc), SLCC developed four, eight-week long courses that provide individuals with core knowledge and skills needed to be successful in the medical device industry. Those courses are Intro to Medical Device Industry, Basic Manufacturing Skills, Intro to FDA Regulations, and Intro to Quality Systems.

Using this program for incumbent worker training, two local manufacturers have partnered with SLCC to build the skills their current workers need to be successful employees.

BIOFIRE INVESTS IN EMPLOYEES’ FUTURE WITH SLCC TRAINING PROGRAM

BioFire Diagnostics, a Salt Lake City medical device manufacturer, began its partnership with SLCC after attending a local American Society for Quality meeting and hearing about the program. Due to low unemployment rates in the Salt Lake City area, BioFire heavily competes with many other manufacturers alike to find skilled and qualified employees. With a rapid increase in size, going from 219 to 900 employees in less than seven years, BioFire found themselves having to hire candidates that have no background in Medical Device manufacturing.

With a lack of skilled workers and a large increase in the number of employees being onboarded, BioFire went to SLCC to help with training. “Current employees want promotion and advancement opportunities. We put this out as a challenge. Do you really want to advance? Then prove it to me. Go to SLCC, take these courses, pass, and we’ll pay for it,” said Gina Bergman, Director of Quality Assurance and Regulatory Compliance, BioFire.

Gina explained every one of her employees has the option to take the SLCC program, and it is strongly encouraged for lower level employees for promotion capabilities. To date, BioFire has sent 20 employees through the program.

“The difference is the confidence,” Bergman said of the employees before and after taking the program. “I have promoted people that have attended and I do believe it has increased their confidence, skill sets, and it shows our employees that we are investing in their education and career growth.”

BioFire is not only sending internal candidates to the classes, but also is actively looking to hire graduates of these classes.
ATL CEO Brad Brown came across the SLCC program at a medical device gathering. Because of the company’s commitment to 40 hours of training a year for each employee, Brown believed the program would be a great opportunity to complete this training requirement. Brown looked at the curriculum and even took the introductory course himself. He found the instructors to be “outstanding.”

Beginning in 2015, ATL Technology has had 22 employees go through the program, and every employee is asked to take at least the introductory course. In return, Brown has offered incentive to take the course with a 1% pay raise for every class his employees take in the program, for a total possible 4% raise. This incentive has fueled many employees to take the courses due to seeing a significant return on their time.

“I’m committed to [the program]. I want every one of my employees to take it. I can see the difference and I can feel the difference,” Brown said.

Brown liked the fact that the program is taught by instructors from other medical device companies, allowing for employees to hear a different perspective with real time examples rather than just quoting regulation.

As a result of the training, Brown has experienced a better understanding and participation from his employees. After taking the program, ATL Technology employees understand why they are doing what they’re doing. In addition, he feels it is helping reduce turnover by investing in his employees. “This program is very cost effective. The main benefit of doing the program through SLCC is we are paying more than 50% less than what we have been paying to train employees through daylong seminars. Doing the training over an eight-week period makes the information sink in, rather than going to a three-day training,” Brown said.
Josh Weibel completed his English degree with the intent of being a teacher. After realizing that wasn’t what he wanted to do with his life, Josh worked in a restaurant, bartending, for years. Josh had a friend who worked for BioFire and was able to land a job in document control. To get up to speed with medical device manufacturing, BioFire sent Josh through the SLCC program. “I learned more than I thought going into it. I think it’s worthwhile, and it’s constantly improving. It gives extra support and adds to the level of understanding with our role within the company.”

Jason Blohm worked as a Lean Manufacturing consultant for a couple of years prior to coming to ATL Technology. Having no experience in medical device manufacturing, Jason felt the SLCC program was valuable for him getting external exposure from the instructors and fellow classmates. Jason also felt the instructors had credibility and real stories to back up what they were saying. “We have great incentive to go. I’m in the regulatory and quality side and I’m exposed to this anyway. The biggest benefit I’ve seen is it takes it from something that you do but you don’t know why, to understanding why you’re doing it and where it’s coming from.”

About the C3BC:
The Community College Consortium for Bioscience Credentials (C3BC) is a multistate consortium of 12 community colleges engaged in an educational and training initiative funded by the U.S. Department of Labor under grant TC-23761-12-60-A-37. Under the C3BC, 12 Community Colleges nationwide coordinate to support the following strategies to assist grant participants to obtain employment in high-wage, high-skill occupations, such as biotechnology, biomanufacturing, and medical devices:
1. Harmonize a set of core skills across the biosciences and embed stackable and latticed, industry-recognized credentials into training for biosciences jobs that will create career pathways for TAA-eligible and other displaced workers.
2. Improve and expand recruitment, testing and aptitude assessment for trade-impacted workers in tandem with the public workforce system. This will help fill industry demand for biosciences workers.
3. Expand and improve the delivery of education and career training programs at the Community College level. Accelerate completion time in certificate/credentialing programs through improved assessment of prior learning, focused support services, the removal of institutional barriers and development of technology.
4. Build community college capacity for biosciences education and training that meets local, state and national employer needs across subsectors of laboratory skills, biomanufacturing and medical devices.

This product was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, expressed or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.
Local healthcare provider finds quality employees in SPC’s Biomedical Engineering Technology students

“[THE PROGRAM] HAS EXCEEDED OUR EXPECTATIONS.”

Walter Barrionuevo, Director, Clinical Engineering Services, BayCare Care Health Inc.
St. Petersburg College’s Biomedical Engineering Technology Program Fills Industry Need

St. Petersburg College (SPC) developed its Biomedical Engineering Technology program, a two year, 62 credit program, to build a pipeline of talent to fill positions in the biomedical industry. As part of the Community College Consortium for Bioscience Credentials (c³bc), St. Petersburg developed this program to fit the needs of local healthcare organizations, including BayCare, a leading not-for-profit healthcare system that connects individuals and families to a wide range of services at 15 hospitals and hundreds of other convenient locations throughout the Tampa Bay and central Florida regions.

The clinical engineers at BayCare reached out to SPC after accepting one of their engineering technology students as an intern. They quickly realized that a traditional Engineering Technology degree did not adequately equip students with the unique skill set that is required by the highly specialized environment of a clinical engineering department. SPC immediately began having extensive discussions about what core skills are required by the field, and outlined what a structured internship would look like.

Carlos Villafane, a highly experience BMET III at BayCare, was quickly identified as the best person to act as advisor/consultant to the program. Villafane had previously taught BMET classes in Puerto Rico, and published a handbook on basic BMET skills. Giovanna Taylor, director of Biomedical Technology-Medical Devices Program at St. Petersburg College, and Villafane met on a regular basis while she began to learn about the field and formulate the curriculum structure for the program. As president of the regional biomedical society, Carlos was able to quickly connect Taylor to other professionals in the field who eventually provided subject matter expertise related to curriculum and core skills. They also helped form the core of the industry advisory committee as well as provide course instruction.

“The relationship with BayCare has been invaluable. As the largest healthcare provider in this region, new BMETs entering the field never have a chance to work for the organization because BayCare positions are highly sought after by job seekers and only the most experienced technicians are considered for

“We offer training for the students, which we have here, at BayCare. We put our own employees in technical vendor training classes but also include St. Pete’s students. We are making an investment in them.”

- Randell Orner, Operations Manager, Clinical Engineering Services, BayCare Health System Inc.

Local Florida healthcare providers have struggled with recruiting Biomedical Technicians-BMETS, dealing with turnover and challenges filling these positions.
BayCare has struggled to find workers in the biomedical industry. Due to the lack of candidates, the organization has had to go outside of Florida to fill positions. After beginning interviews with various colleges, they found the students did not possess the skills they needed. This is how their relationship with St. Petersburg began.

Because of their strong relationship, BayCare has been able to give input on designing SPC’s program to meet their own needs. “The last 3 years have been fantastic. One of our employees is an instructor at SPC, so we are able to mold the program a little more based on needs of the industry,” said Walter Barrionuevo, Director of Clinical Engineering Services, BayCare Health System Inc. “The quality of candidates from SPC is much higher. This relationship helps us, and it helps them.”

BayCare has hired a total of six students as biomedical employees in the last 18 months, making nearly 5% of their total biomedical department St. Petersburg graduates. Speaking on sourcing their biomedical department staffing needs with St. Petersburg students, Randell Orner, operations manager of Clinical Engineering Services, BayCare said, “We know what skills set they come out with, and we have the instructor that can offer real-world experience to the students. They come out with excellent transferrable skills.”

BayCare employees feel strongly about committing their time to the SPC program for the greater good of the industry. BayCare has donated nearly $100,000 in medical equipment to the program and holds a quarterly open house for students in the program, as well as those considering the biomedical technology field as a career. “The Clinical Engineering industry is expected to grow 6% in the next 10 years as there will be a greater demand for healthcare services with the use of increasingly complex medical equipment. We need to make sure that enough technical resources are available to meet this demand. By working together with SPC, we will ensure that our industry will have qualified candidates in the years to come,” Barrionuevo said. He is confident in their ability to staff the Clinical Engineering department because of the relationship with SPC.

BayCare uses St. Petersburg College as a talent supplier. Because of the relationship we have developed, our entry-level students have the unique opportunity to begin their professional careers with the best clinical engineering department in the region," Taylor said. “More importantly, because of the dedication of the BayCare engineering team to the development of SPC’s program, they have been able to start a program from nothing to over 170 students in just a few years, and the numbers continue to grow.”

Pictured: Kevin Kirk, Carlos Villafane (instructor), Andrew Wright
BRENDA WELCH, a biomedical engineering technologist at BayCare, previously worked at a UPS contact center as a corporate liaison for their larger enterprise accounts. Although he felt his role was meaningful there, Brendan wanted to have a role in which his actions had a direct and tangible impact on the quality of life of others. With a technological skill set and a desire to improve the quality of life of others, Brendan found biomedical engineering to be the perfect fit. “The St. Petersburg program helps you understand what you do and how it impacts the rest of the facility and the patients that use those devices. I gained an understanding of the implications of every action you take, and how to see it from a 360 perspective,” Brendan said. “There are a lot of programs dedicated to electronics, engineering, and manufacturing, but there was nothing that actually prepared you to be successful within the healthcare field in biomedical engineering. When I reviewed the program St. Petersburg was developing, I found it to be the most comprehensive and specialized, which is why I chose SPC.”

**BayCare Employee Spotlight**

**Brendan Welch**, a biomedical engineering technologist at BayCare, previously worked at a UPS contact center as a corporate liaison for their larger enterprise accounts. Although he felt his role was meaningful there, Brendan wanted to have a role in which his actions had a direct and tangible impact on the quality of life of others. With a technological skill set and a desire to improve the quality of life of others, Brendan found biomedical engineering to be the perfect fit. “The St. Petersburg program helps you understand what you do and how it impacts the rest of the facility and the patients that use those devices. I gained an understanding of the implications of every action you take, and how to see it from a 360 perspective,” Brendan said. “There are a lot of programs dedicated to electronics, engineering, and manufacturing, but there was nothing that actually prepared you to be successful within the healthcare field in biomedical engineering. When I reviewed the program St. Petersburg was developing, I found it to be the most comprehensive and specialized, which is why I chose SPC.”

**School:**
St. Petersburg College

**Students enrolled:**
175+

**Number of BayCare Hires:**
6

**Point of contact:**
Giovanna Taylor
Director of Biomedical Technology-Medical Devices Program
St. Petersburg College
Taylor.Giovanna@spcollege.edu

Dr. Brian Bell, PhD
bell.brian@spcollege.edu

**Length of program:**
2 years

**About the C3BC:**
The Community College Consortium for Bioscience Credentials (C3BC) is a multistate consortium of 12 community colleges engaged in an educational and training initiative funded by the U.S. Department of Labor under grant TC-23761-12-40-A-37. Under the C3BC, 12 Community Colleges nationwide coordinate to support the following strategies to assist grant participants to obtain employment in high-wage, high-skill occupations, such as biotechnology, biomanufacturing, and medical devices:

1. Harmonize a set of core skills across the biosciences and embed stackable and latticed, industry-recognized credentials into training for biosciences jobs that will create career pathways for TAA-eligible and other displaced workers.
2. Improve and expand recruitment, testing and aptitude assessment for trade-impacted workers in tandem with the public workforce system. This will help fill industry demand for biosciences workers.
3. Expand and improve the delivery of education and career training programs at the Community College level. Accelerate completion time in certificate/credentialing programs through improved assessment of prior learning, focused support services, the removal of institutional barriers and development of technology.
4. Build community college capacity for biosciences education and training that meets local, state and national employer needs across subsectors of laboratory skills, biomanufacturing and medical devices.

This product was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, expressed or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.

**Community College Consortium for Bioscience Credentials (C3BC):**

**St. Petersburg College Hiring Partners:**
“WE HAVE A MUCH HIGHER RETENTION RATE WITH ACC STUDENTS. THEY KNOW WHAT THEY’RE GETTING INTO AND THEY COME BETTER PREPARED.”

Josh Combs, Ph.D, Vice President Manufacturing, XBiotech
Austin Community College’s Biotechnology Program Prepares Job-Ready Students for Industry Careers

Austin Community College (ACC) developed its Biotechnology Program to help fill a need for jobs in the bioscience and biotechnology workplace.

As part of the Community College Consortium for Bioscience Credentials (c3bc), ACC offers a 2-year program with 16-week courses in which students come out with an Advanced Technician Certificate, an associate’s degree, or a Biotechnology Certificate. A key asset to this program is the required internship, which students take at the end of their first year. The required internship has proven to be extremely valuable to local companies, where many hire ACC students straight out of the internship. ACC has developed relationships with 10-15 companies, including XBiotech and Bioo Scientific.

ACC had 100+ students and alumni enrolled in their Biotechnology Program in 2015, and 170 total graduates from the program since its start. “We try to make our students ahead of the curve to make them more marketable for biomanufacturing,” said Linnea Fletcher Ph.D, Department Chair, Biotechnology, Executive Director, AC2 Bio-Link Regional Center, Austin Community College.

XBIOTECH HIRES ACC STUDENTS DIRECTLY OUT OF INTERNSHIPS

XBiotech, a bioscience company founded in 2008, started taking interns from ACC’s Biotechnology Program in 2012. Since then, XBiotech has hired 10 ACC students and have had little to no turnover from these new hires. XBiotech began their relationship with ACC when they hired their first ACC student, Heather. “She turned out to be really great. She picked up everything really quickly and had such a can-do attitude. Once we saw what Heather could do, we knew that ACC was a great place to start,” said Sushma Shivaswamy, Ph.D, vice president of Research and Development, XBiotech. The company is able to begin training while students undergo the 3-month internship.

XBiotech gives tours, workshops, and works with the ACC professors directly to engage themselves in the program to find the best candidates for the job. XBiotech sees the ACC internship requirement as a huge benefit as they see it as a trial period for potential new hires. “When we get interns, we can see value in them before hiring them full time,” Shivaswamy said.

“The interns are essentially vetted for us. The program does a good job of weeding out students they don’t feel would be good for employers,” Josh Combs, Ph.D, Vice President Manufacturing, XBiotech.

XBiotech also gets customized training out of their partnership with ACC. ACC will tailor the curriculum for what the company needs, all while considering what the industry as a whole needs and what will benefit other companies.

XBiotech is a growing company and expanding to a new facility. Most of the new hires they will bring into this new facility will be from ACC.
Bioo Scientific, a local biotechnology company, finds great benefit in the “try it before you buy it” value of the ACC internship requirement. Two Bioo Scientific employees have taught in the ACC program and therefore understand it’s value. With a total of close to 100 employees, Bioo Scientific has hired 20 ACC students in the past year and a half.

“ACC does a good job of doing hands-on training for what the industry needs, so that’s really helpful! You pretty much know that they have the skill set and are ready for the job,” said Sandesh Subramanya, Ph.D, Director of Vaccines & Diagnostics, Bioo Scientific. “The interns we have just hired show a lot of potential.” Bioo Scientific estimates 75-80% of ACC students end up being offered a full time position.

Bioo Scientific also benefits from ACC’s curriculum flexibility. “Since our needs have evolved, it’s nice that ACC is receptive to the idea of specific courses that address our needs,” said Marianna Goldrick, Ph.D, senior scientist R&D, Bioo Scientific.

Bioo Scientific has hired students that want more training and have gone back to ACC to take additional courses to increase their knowledge and skill set. The company has seen strong retention with ACC students, with some being there for 8 or 9 years. “They have to show up, pay attention to detail, and be team players. We’ve found some great people from ACC,” Goldrick said.

Bioo Scientific believes ACC students have a shorter on-the-job training time because of the background they have from the Biotechnology Program.
SERVING STARTUPS

Austin Community College benefits startup biotech companies through the creation of its Bioscience Incubator. These small, local companies lease space and hire ACC biotechnology students as interns to provide real-world training and experience. In partnership with the Texas Life-Sciences Collaboration Center, ACC has been able to offer small biomedical companies access to state-of-the-art technology, and as a result, give companies the opportunity to change the industry for the better with new discoveries and industry-wide solutions.

XBIOTECH EMPLOYEE SPOTLIGHT

“I feel like every piece of information I’ve learned there, I use here. I’m glad ACC was there so I could get to this point and wasn’t just stuck. I wouldn’t of wanted it any other way even if I had the funds to go back to school. I got everything I needed there.”

Heather Mays, senior research associate antibody discovery, XBiotech

BIOO SCIENTIFIC EMPLOYEE SPOTLIGHT

“The number one reason Bioo Scientific keeps going back to ACC is practical experience. They have hired people with bachelor degree who have had no hands-on experience, and it’s not the same.”

Craig McCasland, Lab Tech III, Bioo Scientific

About the C³BC:
The Community College Consortium for Bioscience Credentials (C³BC) is a multistate consortium of 12 community colleges engaged in an educational and training initiative funded by the U.S. Department of Labor under grant TC-23761-12-60-A-37. Under the C³BC, 12 Community Colleges nationwide coordinate to support the following strategies to assist grant participants to obtain employment in high-wage, high-skill occupations, such as biotechnology, biomanufacturing, and medical devices:

1. Harmonize a set of core skills across the biosciences and embed stackable and latticed, industry-recognized credentials into training for biosciences jobs that will create career pathways for TAA-eligible and other displaced workers.
2. Improve and expand recruitment, testing and aptitude assessment for trade-impacted workers in tandem with the public workforce system. This will help fill industry demand for biosciences workers.
3. Expand and improve the delivery of education and career training programs at the Community College level. Accelerate completion time in certificate/credentialing programs through improved assessment of prior learning, focused support services, the removal of institutional barriers and development of technology.
4. Build community college capacity for biosciences education and training that meets local, state and national employer needs across subsectors of laboratory skills, biomanufacturing and medical devices.

This product was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, expressed or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.

Community College Consortium for Bioscience Credentials (C³BC):
“It takes so long to get people trained, which is why Ivy Tech is so valuable. You can have somebody walk in off the street, already trained, and you just saved a ton of time and money.”

– Matt Hicks, Quality Assurance Senior Specialist, Cook Pharmica
Ivy Tech students advance quickly within Cook because of their preparedness and experience

With local companies struggling to hire production employees, Ivy Tech Community College’s biotechnology program has helped to adequately supply a pipeline of talent and training to companies in the Bloomington area—a biotechnology hub in the state of Indiana. As part of the Community College Consortium for Bioscience Credentials (c3bc), Ivy Tech developed its biotechnology program, which allows students to earn certificates in biopharmaceutical manufacturing, regulatory affairs, or an associates degree. The program has an applied, hands-on approach to teaching students, largely benefitting local companies, especially Cook Group, a privately held company based in Bloomington, Indiana, primarily involved in manufacturing of medical devices.

“I was shocked at the number of biotechnology students this semester, so I think the new arrangement between Cook and Ivy Tech will encourage and take away a barrier that was there prior to when it was implemented,” said Dean Miller, Associate Professor, Regulatory Affairs, Ivy Tech Community College.

Cook uses Ivy Tech program as hiring source

Cook Pharmica and Cook Medical, subsidiaries of Cook Group, have employees that contribute to the development of curriculum and are instructors within Ivy Tech’s biotechnology program. As workers in the field, Cook instructors are able to provide Ivy Tech students with real-life scenarios and experience. An instructor of several courses, Russ Clinton, Manager at Cook Medical said, “I would use this opportunity to identify students who I would want to potentially hire.” Cook Medical and Pharmica see the program as a recruitment opportunity for open entry-level positions within their company.

The biotechnology program ends with an internship, in which the school works with Cook to place students. Every year, Cook Pharmica requests Ivy Tech interns and has hired almost all of them – around 35 interns since 2006. They recognize that these students bring the skill sets they need, reducing training time. Ivy Tech and Cook have an extremely robust relationship. Not only has Cook contributed to the development of the biotech program by providing curriculum and professors, Cook has also donated equipment to the program. Ivy Tech brings their students to the Cook facility for field trips as well.

“The regulatory affairs department sees Ivy Tech as a feeder for more employees. This new program will reduce on-the-job training.”

– Chris Kilander, Global Product Manager, Cook Medical
“I don’t see training changing with My Cook Pathway. A lot of the training is very scripted and on-the-job. What does change is the persistency to learn at a faster pace.”

- Kelly Callahan, Manager, Human Resources, Cook Pharmica

Looking to meet the needs of local companies, Ivy Tech has Cook sit on their advisory board to give input on needs, requirements, and improvements. “We created a certificate that was 100 percent developed based on what [Cook] has said,” said Sarah Cotes, Professor of Biotechnology, Ivy Tech Community College. Students have the ability to come out of the Ivy Tech program earning industry-recognized certifications, like the American Society for Quality.

Over the course of years, the relationship between Ivy Tech and Cook has been able to adjust. Students coming out of the Ivy Tech program have the knowledge they need to begin a successful career at Cook Medical and Pharmica.

My Cook Pathway

Ivy Tech partnered with Cook Medical and Cook Pharmica to create “My Cook Pathway,” an education program allowing participants to earn a certificate or two-year degree in Ivy Tech’s biotechnology program at no cost to the employee. Cook Medical and Cook Pharmica send their employees to receive the Regulatory Affairs certificate or the Biopharmaceutical Manufacturing certificate. Students must achieve a ‘C’ or better in their courses in order for Cook to fully fund their program tuition.

There has been a large increase in the number of Cook employees that are taking advantage of the Ivy Tech biotechnology program with the announcement of My Cook Pathway. The knowledge students take away from the program is applicable almost anywhere. The Regulatory Affairs concentration is especially diverse, where students can specialize in a number of different areas. “If you do RA well, you can get your product to the market quicker and have an advantage over your competitors. Being able to position your technology first is key,” Chris Kilander, Global Product Manager, Cook Medical said of the importance of this program. Due to the convenience of the program, Cook has had the ability to hire fewer people from outside of the area and more local candidates.
EMLOYEE SPOTLIGHTS

COOK MEDICAL

Pictured left to right: Maribel and Naomi

“I took about five courses and paid not a dime. I can make a huge difference in regulatory affairs here all the way out to the other aspects of the industry. I thought the program was a great way to be able to see where this path could lead me.”

- Naomi Funkhouser, Regulatory Affairs Specialist

COOK PHARMICA

Tony Roberts has worked in the manufacturing industry for 25+ years. He was the third graduate from the Ivy Tech biotech program, and found a job at Cook Pharmica with the help of two of his professors that worked there. Tony started as a lab technician in 2007 and worked his way up to an associate scientist by 2013. “I could not have taken this job without what I learned at Ivy Tech. As for hands-on skills, there’s no four year university that’s trained people as well as Ivy Tech has.”

Alex Schwab came to Bloomington to attend Indiana University for Chemistry. After deciding this wasn’t the direction she wanted to go in, she heard through a friend about the biotech program at Ivy Tech. Alex began interning at Cook Pharmica in May 2016 for two months before being hired full time. “I think I was very prepared. There was another gentlemen who started before me, and I came in already knowing all the expectations. The difference between the two of us was very dramatic even from day one.”

Matt Hicks moved to Bloomington in 2010 looking for a job. He had CGMP experience and qualified for an entry level manufacturing position. With the determination to advance, Matt was steered towards Ivy Tech and completed the biotech program. Originally wanting to go into regulatory affairs, and after holding four different jobs within Cook, Matt is now focused on quality assurance. “Everything I was learning directly applied to what I was doing. I can’t say that of any other educational experience I’ve had before.”

About the C³BC:
The Community College Consortium for Bioscience Credentials (c³bc) is a multistate consortium of 12 community colleges engaged in an educational and training initiative funded by the U.S. Department of Labor under grant TC-23761-12-60-A-37. Under the c³bc, 12 Community Colleges nationwide coordinate to support the following strategies to assist grant participants to obtain employment in high-wage, high-skill occupations, such as biotechnology, biomanufacturing, and medical devices:

1. Harmonize a set of core skills across the biosciences and embed stackable and latticed, industry-recognized credentials into training for biosciences jobs that will create career pathways for TAA-eligible and other displaced workers.
2. Improve and expand recruitment, testing and aptitude assessment for trade-impacted workers in tandem with the public workforce system. This will help fill industry demand for biosciences workers.
3. Expand and improve the delivery of education and career training programs at the Community College level. Accelerate completion time in certificate/credentialing programs through improved assessment of prior learning, focused support services, the removal of institutional barriers and development of technology.
4. Build community college capacity for biosciences education and training that meets local, state and national employer needs across subsectors of laboratory skills, biomanufacturing and medical devices.

This product was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, expressed or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.

Community College Consortium for Bioscience Credentials (C³BC):