

Wanted: 25-year-olds with 30 years of experience

BC3's new apprenticeship program develops workers, helps precision manufacturer avert looming retirement crisis

January 30, 2017

(Freeport, PA) Inside its facilities, Oberg Industries' employees make complex, precision components for the aerospace, medical and energy sectors, as well as others, and specialized tooling used to produce food and beverage cans for the metal-packaging industry.

Inside Oberg Industries' on-site Apprentice Training Center, Butler County Community College is helping to educate Oberg's young employees to become highly trained and skilled workers upon whom Oberg will rely for future success.



Oberg Industries in Freeport, PA is using the expertise of BC3 to train its precision manufacturing apprentices and address a looming crisis in retirements in the next 15 years.

The Freeport-based global precision manufacturer is facing the retirement of 80 of its 650 local employees – machinists, grinders and CNC operators – within 15 years. It has turned to BC3 to create gold-collar workers – “people who have to be technically proficient as well as being able to physically and actively be able to work with their hands and be creative,” says Greg Chambers, Oberg Industries' director of corporate compliance.

Meet the Haley Vakulicks, the Logan Adamses, the Jeremy Gohns – gold-collar workers being formed at Oberg Industries by BC3's Karen Riethmiller and Oberg apprentice training center administrators Linda Wood, Roger Paul, Tom Siebert, Jason Falkner and Dayne Stauffer, through BC3's new Apprenticeship Technology Workplace Certificate.

BC3's 26-credit program – launched last fall and sanctioned through the U.S. Department of Labor – is taught entirely at Oberg Industries.

“That makes it so much more convenient,” says Vakulick, 19, of Natrona Heights. “We don't have to drive the whole way out to the Butler main campus.”

“This is a real rarity”

Riethmiller is a BC3 professor of STEM (Science, Technology, Engineering, Mathematics) and coordinator for BC3’s Computer Aided Machining Technology program. She instructs 23 of 26 credits in the program at Oberg Industries, one of Butler County’s largest precision manufacturers, and covers topics such as blueprint reading, computer numerical control programming and geometric dimensioning and tolerancing. BC3’s Patricia Pritchard teaches a three credit English class at Oberg.

Fifteen Oberg Industries employees – Vakulick, Adams and Gohn among them – sit behind two long tables inside the apprentice training center classroom, their fifth-edition Metallurgy Fundamentals textbooks open and their eyes on Riethmiller, who with a black marker sketches an iron-carbon phase diagram on a whiteboard and on this morning discusses cryogenics.

Oberg Industries pays for its employees’ BC3 tuition, fees and books. Classes are held on company time.

Wood spent 20 years in secondary education in four states, including Texas, North Carolina and Florida, before becoming Oberg Industries’ training and learning experience coordinator.

“And I worked at schools that had vocational-type curriculums,” she says. “I have never seen or been in a situation where I saw an actual college instructor coming to my company in order to teach my apprentices. This was something that was brand new to me when I took this position at Oberg. I had never heard of it before. This is a real rarity. To have a company pay a college to come to their campus and teach classes.”

“People sacrificed their future for their present”

Sandwiched between economic recessions in the late 1980s and mid-2000s, companies nationwide “started killing their training programs,” Chambers says.

“People started treading water,” he says, “and they sacrificed their future for their present.”

After the economic recovery in June 2010, manufacturers started specializing in their core competencies but did not develop their workforce.



An employee of Oberg Industries in Sarver works on the floor of the precision manufacturer on Jan. 24.

“Consequently, over time, people had a need, but there were fewer and fewer people to choose from internally so they had to go externally, and the pool is only so large.”

The shortage of locally skilled workers is a result of public negativity about the trades following the collapse of the steel industry and reduced machining and grinding programs at the few regional technical schools that existed, Wood and Chambers say. Companies such as Oberg found themselves recruiting employees from outside of Western Pennsylvania, Wood says.

“We looked as far away as Michigan,” she says. “We looked in Texas. We looked in the New England states, trying to find qualified machinists and grinders and toolmakers. We seemed to have lost interest in that area of manufacturing from an educational standpoint.”

“Everybody woke up”

Jobs are plentiful. “There are 2,000-plus openings just in our type of manufacturing alone, let alone all manufacturing,” Chambers says.

Qualified workers are not. “You don’t have enough people to go around and that is kind of where we are today,” Chambers says. “Today we are in a dilemma because in the last 20 years people haven’t been investing internally.”

However, Oberg in the early 1950s began to invest in apprentice training and has used instructors from BC3 for more than 20 years to supplement its training staff. Oberg also realized that finding qualified people to work in advanced manufacturing jobs was difficult.

Recognizing a crisis on the horizon, Ron Bullock, vice chair of the National Association of Manufacturers’ Manufacturing Institute Board, told his colleagues at a conference in Dayton, Ohio, in 2011, that “Employers have to make their own employees” and that they now need “25-year-olds with 30 years of experience.”

“That,” Riethmiller says, “summarizes everything.”

Apprenticeship programs leading to two-year degrees are needed, according to Bullock.

“That is when it started,” Chambers said. “Everybody woke up and started realizing we needed people. Not only that, you have this “silver tsunami” – older, experienced people going out the back door and no younger people coming in the front door.”

Chambers worked with Matt Kovac, BC3 dean of STEM, and Riethmiller to get BC3 in the front door and into its on-site Apprenticeship Training Center.

Riethmiller's experience "benefits us a lot"

Riethmiller holds a master's degree in higher education-educational leadership from Geneva College in Beaver Falls, a bachelor's degree in applied science from Slippery Rock University, and attained three associate degrees from BC3 – in mechanical design, industrial management and architecture – and has been a full-time BC3 instructor since 1995.



Karen Riethmiller, a BC3 STEM professor and coordinator of BC3's Computer Aided Machining Technology program, teaches metallurgy to Oberg Industries apprentices in Freeport on Jan. 24.

Her expertise has been summoned by companies such as GE Transportation in Grove City, Indspec Chemical Corp. in Petrolia and AK Steel Corp. in Butler, in CNC programming, blueprint reading and in industrial math.

"She not only teaches the books, but she has the in-field experience, and I feel that benefits us a lot," says Adams, 19, of Kittanning.

Gohn says Riethmiller also taught his father – and his colleagues.

"She's been to different companies and knows almost every stage of the manufacturing process. Any question I have ever had in class, she is able to answer it. Just like that," Gohn, 23, of Butler, says as he snaps his fingers for effect.

Riethmiller has taught noncredit courses at Oberg for 20 years, including those in heat treating, applied mathematics and geometric dimensioning and tolerancing.

It was only natural that Oberg select Riethmiller for its new endeavor.

"I am well aware of Karen's expertise and her dedication to education," Chambers says.

"Karen's reputation and Karen herself were a big factor in this. I knew Matt, but not as long, and I know a lot of people up at BC3, but Karen I have known for decades. All the people I have met from BC3 have been quality people."

Within three months, a course of action

Chambers and Riethmiller began discussing a formalized program in April 2015. The next month they met at BC3 with Kovac.

“He (Chambers) was interested to see if maybe there was a way we could start doing credit courses at Oberg and have the courses be part of an apprenticeship program,” Kovac says.

Initial Oberg employees were enrolled in fall 2015 into the 26-credit CNC Programming Technology Workplace Certificate first offered in fall 2006.

The CNC Programming Technology Workplace Certificate for Oberg, whose first class of employees will graduate from BC3 this spring, was designed so that its coursework would fold into its successor, the Apprenticeship Technology Workplace Certificate that launched last fall. Credits from both stack into BC3’s Associate in Applied Science degree in Computer Aided Machining Technology.

“That’s the ladder that the Department of Labor is looking for,” Kovac says.

“In order to take advantage of their willingness to get this jump-started (in fall 2015), we put them in the CNC Technology Workplace Certificate, which is fine. But they will be in the Apprenticeship Technology Workplace Certificate going forward.”

And it can be shared, Chambers says.

“As far as the program that BC3 put together for us, we helped them develop it for the industry,” Chambers says. “It is great that Oberg is using it but it is not something that can only be used by Oberg. It is a template that can be used by any industry in the area. Even our competitors could use it.”

Apprentices develop critical thinking skills

Riethmiller, Wood says, is opening the minds of her workforce.

“By going through these classes that they take with Karen, they are masters at troubleshooting their own issues at the machine,” Wood says. “And that is our bottom line. That’s what we need our apprentices and journeymen to be able to do. If they run into an issue on the machine, we don’t need them stopping and waiting for a manager or a lead or a supervisor to come over and help them. We need them to be able to figure out what’s wrong, fix it and continue on with their production.”

BC3 is also opening the doors to higher education for the 65 percent of Oberg Industries employees who have studied under Riethmiller.

“It’s wonderful that we have an opportunity to play a role and provide that pathway to higher academic achievement,” Kovac says. “This is the whole stackable model, in which the credit courses apply to the classroom part of the apprenticeship program as well as a BC3 workplace certificate, and most of the credits can lead to an associate degree.”

And BC3 is opening possibilities for potential future grinders, machinists and CNC operators. “I don’t know what would happen to our apprenticeship if we did not have this particular relationship,” Wood says. “It would not be the apprenticeship that it is today, if we didn’t have this kind of partnership with BC3. We are able to attract the best talent, based on the fact that we offer through BC3 the college courses and the college credits, and it is going to allow Oberg Industries to remain a leader in this area in the machining world for years to come.”

Kovac and Riethmiller also credit the level of BC3 administrative support that the initiative with Oberg Industries received, including that of Jake Friel, Josh Novak, Morgan Rizzardi, Karen Fair, Barb Gade, Margaret Ashenden, Amy Pignatore, Rebecca Smith, Charlene Eckert, Nicole Potter, Bill Stegner, Gloria Sabatelli, Bill Miller, Dr. Nick Neupauer, Dr. Bruce Russell and Jim Hrabosky. Friel is BC3 controller; Novak is dean of student development; Rizzardi is associate director of admissions; Fair is the STEM division secretary; Gade is grant director of the adult literacy program; Ashenden is education coordinator-instructor; Pignatore is director of records and registration; Smith is assistant director of financial aid; Eckert is student accounts secretary; Potter is bookstore assistant; Stegner is system support specialist; Sabatelli is coordinator of educational technology; Miller is interim associate vice president for academic affairs and dean of humanities and social sciences; Neupauer is BC3 president; Russell is interim vice president for academic affairs and Hrabosky is vice president for administration and finance.