

SPRINGFIELD

Bio-tech studies help track path to careers

Springfield Technical Community College student Adel Abdel-Maksoud looks forward to finding work after he receives his certificate in biotechnology.

"This field is growing," said Abdel-Maksoud, of Amherst. "There's a lot of discovery and excitement in this field. Every day there's something new."

He and seven other students in the biotechnology program at STCC recently got a close-up look at a biotech company in Western Massachusetts. They visited Berkshire Sterile Manufacturing in Lee where they examined vials and syringes, among other biotech devices, and looked at state-of-the-art equipment designed to produce drugs.

The students donned white lab coats and slipped on disposable blue shoe covers to keep the floors clean in one section of the plant. They observed scientists in action at the 4-year-old company, which is looking to hire.

The company's CEO, Shawn Kinney, offered an interactive tour of his facility, encouraging students to ask questions about everything from the lab equipment and procedures to career prospects in biotechnology.

Berkshire Sterile Manufacturing produces small-scale injectable drugs for clinical use. Pharmaceutical companies ship drug substances to the company to formulate, sterilize and put into vials and syringes. The final drug product is returned to the pharmaceutical company to perform clinical trials to determine if the drug can cure diseases like cancer, Kinney said.

"We've had some fascinating products in here that are in very early clinical phase studies," he said.

Kinney detailed the meticulous process of manufacturing drugs that are safe for humans. His company's mission is to provide the safest sterile drug products possible for clinical use. In addition to



STCC Professor Lisa Rapp, third from left, and her biotechnology students visit Berkshire Sterile Manufacturing.



Berkshire Sterile Manufacturing CEO Shawn Kinney, standing, speaks with STCC biotechnology students who visited the facility in Lee.

being sterile, the drug must have the proper concentration (too much would be harmful, while too little would be ineffective), and the drug must be tested for the presence of endotoxins, which can cause fevers and allergic reactions in humans.

Professor Lisa Rapp, the Biotechnology Department chair at STCC, said she has taught her students some of the same concepts Kinney

was highlighting.

"We have specifically designed our program curriculum with input from industry and academic partners to prepare students for employment in the biotechnology industry," Rapp said. "Our program is very lab intensive and provides hands-on training to students who plan to work in industry or continue their education."

College president John B.

"We find that people with associate degrees have the necessary background in science and math skills, and usually writing skills, and they can do quite well in the position."

Shawn Kinney, CEO, Berkshire Sterile Manufacturing

Cook said, "This is a great example of how our talented faculty put the 'T' in STCC. Biotech is a key industry, and I am pleased our students are gaining industry-direct perspective."

Kinney said biotechnology companies like his have open positions for biotechnology graduates with two-year associate degrees and one-year certificates. His company is seeking workers in manufacturing, quality control, quality assurance and engineering.

"An associate degree is a great starting point for people," Kinney said. "We do also have a tuition reimbursement program. We're very pro-education. We encourage people to go back to school. We'll reimburse them for the cost of that if it's job-related. Basically, we would support a student on any science degree."

"We find that people with associate degrees have the necessary background in science and math skills, and usually writing skills, and they can do quite well in the position," he said.

Kinney said the biotechnology industry continues to boom in Massachusetts, particularly in the Boston area. He leads one of the few biotech companies in Western Massachusetts. Berkshire Sterile has doubled in size, from 35 to 70 employees, since last year.

"We'll be over 100 by the end of this year," he said.

The STCC biotechnology program prepares students for a number of career paths, including jobs in the pharmaceutical industry. Massachusetts has the highest concentration of biotechnology activity in the world. There are more than 500 companies employing over 50,000 people statewide in biotechnology and pharmaceutical companies.

Biotechnology encompasses a broad range of applications that use living organisms such as cells and bacteria to make useful products. Current applications of biotechnology include industrial production of pharmaceuticals such as vaccines and insulin, genetic testing, DNA fingerprinting and genetic engineering of plants.

According to the industry trade group MassBio, jobs in the Massachusetts biotechnology and pharmaceutical (biopharma) industry grew 4.8 percent in 2016. Companies created more than 3,000 new jobs that year.