CHELMSFORD Technology once used for welding damaged tanks will soon be used to treat cancer patients, thanks to a partnership between a local business and UMass Lowell.


When Triton researchers wanted to find out how to use their technology to attack cancer cells, they found Dr. Susan Braunhut at UMass Lowell, who has been researching breast cancer treatments for 15 years.

The new treatment is unique for two reasons, said Braunhut: It is targeted to affect only cancer cells; and the length of treatment can be controlled by doctors.

The treatment works by attaching antibodies to bioprobes and injecting them into the patient. The antibodies directly attach to cancer cells.

"This specificity allows us to discriminate between malignant and benign cells," Braunhut said.

When a doctor activates a magnetic field, the bioprobes heat up and kill cancer cells but spare the surrounding healthy tissue.

"It gives us laser-like precision, and so far, has shown no side effects," Braunhut said. Results for studies of the treatment done on mice are due in the next few months.

Meanwhile, Triton BioSystems is preparing the treatment for breast cancer and prostate cancer for clinical trials with the U.S. Food and Drug Administration. UMass Lowell researchers continue to work on adapting the treatment for use in patients with lung, pancreatic, ovarian and renal cancers.

In developing the first treatments for breast cancer and prostate cancer, researchers hope to treat a large population of patients and take advantage of available antibodies and effective animal testing processes, Braunhut said.


"Some of the best technology and business innovations come from defense."

Congressman Marty Meehan.

Much of the technology was already developed by the Department of Defense before it was adapted for cancer treatment, and the use of UMass Lowell expertise and facilities accelerated product development, Straface said.

"We have a lot of research and know-how on this project," he said.

The partnership also cut costs for the project by as much as 75 percent, he said. Meehan secured a $1 million grant for the project.

The congressman said he regularly visits businesses that get federal money for research, and often asks them which university they are working with, in order to encourage such partnerships.

While visiting Triton BioSystems, he learned of its work with UMass Lowell, and began to pursue the grant, which is specifically aimed at ways to make defense-related technology useful in medicine.

"The economic future of our region is dependent upon application of this technology," Meehan said.

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