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Technology to detect, treat breast cancer is evolving, improving say researchers, experts

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(PhysOrg.com) -- Although breast cancer remains one of the most-often diagnosed cancers in women each year, methods to improve the detection and elimination of cancerous cells are being discovered, developed and tested each day around the world with plans to deliver them to tomorrow's markets, say researchers at the Purdue Research Park of West Lafayette.

October is the 25th anniversary of National Breast Cancer Awareness Month. The American Cancer Society. estimates that more than 190,000 American women will be diagnosed with invasive breast cancer and that there will be more than 40,000 deaths from breast cancer in 2009.

"The gold standard of breast cancer detection, the mammogram, has helped to increase breast cancer patients' survival rate and life expectancy because diagnoses can be made earlier," said Dan Raftery, a Purdue University professor of analytical and physical chemistry and founder Matrix-Bio Inc., a company that is developing technology to improve detection of breast cancer cells. "But as with any medical process, it can be improved upon."

Ron Ellis, president and CEO of Endocyte Inc., and Richard F. Mussmann, CEO of Nano-Rad LLC, echoed this sentiment.

"Some cancer-fighting drugs harm healthy cells when they enter the body," said Ellis, whose company is developing receptor-targeted therapeutics, or "smart drugs," by using the vitamin folate. "The delivery

of breast cancer therapies will be improved when only cancerous cells are eliminated by these drugs."

Mussmann's company is developing technology to deliver low-dose rate radiation precisely at tumor margins immediately following their surgical removal.

"Implanting catheters and other devices to deliver radiation directly to the diseased cells is effective in fighting breast cancer," he said. "But there are adverse side effects to this method, including sending radiation beams - by necessity - through healthy tissue."

All new technologies and processes being created and developed at the Purdue Research Park of West Lafayette and throughout the world have one thing in common, Ellis said.

"From the concept to delivery of breast cancer diagnostics and therapies, the primary question researchers and entrepreneurs ask is, 'How can we improve the patient's quality of life?' That is our goal."

Provided by Purdue University (news : web)