



News Release

FOR IMMEDIATE RELEASE:

UNM Cancer Center Research in the News

UNM Cancer Center Researchers Pioneering Nanotechnology Method to Detect Breast Cancer Cells

Albuquerque, NM—March 14, 2011—*The Wall Street Journal* recently reported on research by Dr. Edward Flynn, Adjunct Professor of Physics at the University of New Mexico and a member of the Women's Cancers Research Program at the UNM Cancer Center. Dr. Flynn and UNM colleagues are developing a new technique to detect breast cancer cells using nanoparticles of iron oxide attached to certain antibodies. Injected into a patient, the nanoparticle-"tagged" antibodies would recognize and bind to the HER-2 receptor in cancer cells. (About 30-40% of breast cancers contain HER-2.) The patient would then be placed between magnetic coils that generate a small magnetic field and cause the nanoparticles to align in one direction. When the magnetic field is removed, the nanoparticles emit an electromagnetic signal that can be measured by sensitive magnetic sensors known as SQUID to indicate how many metal particles, and therefore how many cancer cells, are present, and where in the breast they are located.

As the *Wall Street Journal* article points out, this pioneering new technology could allow doctors to detect breast cancers up to 2½ years sooner than conventional mammography. By detecting smaller tumors at earlier stages of the illness, the SQUID technology could improve the prognosis for breast cancer patients. While challenges remain in the refinement of the technology for use in clinical

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settings, Dr. Flynn and his team have already demonstrated how SQUID can be used to assess the progress of leukemia patients by counting cancer cells before and after chemotherapy treatment. The results of that earlier research were published in the scientific journal *Cancer Research*. Once the technology is refined for its current targets, HER-2 receptors, the team will work to identify more cancer-specific receptors to expand the technology's utility—and increase the range of breast cancers that can be detected.

About Dr. Edward Flynn

A retired fellow and former nuclear physicist at the Los Alamos National Laboratory, Dr. Edward Flynn is an Adjunct Professor of Physics at the University of New Mexico and a member of the UNM Cancer Center. Dr. Flynn also serves as the chief executive of Senior Scientific, a nanomedicine firm in Albuquerque, NM.

About UNM Cancer Center

The UNM Cancer Center is the Official Cancer Center of the State of New Mexico and the only National Cancer Institute (NCI)-designated cancer center in the state. One of just 66 NCI-designated cancer centers nationwide, the UNM Cancer Center is recognized for its scientific excellence, contributions to cancer research and delivery of medical advances to patients and their families. It is home to 85 board-certified oncology physicians representing every cancer specialty and more than 125 research scientists hailing from such prestigious institutions as M.D. Anderson, Johns Hopkins and the Mayo Clinic. Learn more at cancer.unm.edu.

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