

Combating Breast Cancer



Sarah Blair
Professor of Surgery

CURRENT RESEARCH

Using nanoparticles to localize and resect tumors

Breast cancer is a serious and debilitating disease that can leave physical, emotional, and psychological damage on its survivors. It will affect an average of one in eight American women annually, while it can also affect men, and survival rates drop dramatically as the stage of cancer progresses. Early detection is becoming more common as smaller tumors are being discovered at earlier stages, but this presents challenges to surgeons tasked with removing tumors that cannot be felt or seen with the naked eye. To overcome this obstacle, Dr. Sarah Blair, Professor Surgery at the University of California, San Diego and a surgeon who focuses mainly on breast cancer, is using gas-filled nanoparticles to localize and remove tumors in only one procedure. The nanoparticles are injected by radiologists, and stimulated by ultrasound to identify the locations of tumors, making it easier for surgeons to remove the cancer during surgery. This is a more efficient and effective way of removing breast cancer, and is improving the surgical process for surgeons while also introducing a less-invasive process for the patients.

Dr. Sarah Blair is an active surgeon involved in research aimed at developing new ways for identifying breast cancer tumors and surgically removing them. Her lab is using gas-filled nanoparticles to locate small tumors in breast tissue, which cannot be seen by the naked eye, for surgical removal. These particles have been mostly developed, but are in the process of being scaled-up for and mass -production for use in practical applications. These nanoparticles are injected, guided by mammography, by radiologists sometime between diagnosis and a week before surgery. The particles are filled with a gas that...

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AFFILIATION

 University of California, San Diego

EDUCATION

- Surgical Oncology Fellow: 1999 – 2001 .City of Hope
- Surgical Resident: 3rd to 5th year 1996 – 1999 .University of Massachusetts Coordinated Surgical Program
- Research fellowship: 1994 – 1996 .Surgical Metabolism and thoracic Laboratory at Memorial Sloan Kettering Cancer Center
- Surgical resident: 2nd year: 1993 – 1994, University of Massachusetts Coordinated Surgical Program
- Surgical internship: 1992 – 1993 .University of Massachusetts Coordinated Surgical Program
- and 2 more.

RESEARCH AREAS

Life Science, Oncology / Cancer, Oncology / Cancer, Women's Health

FUNDING REQUEST

Your contributions will allow the technologies Dr. Blair is developing to be tested in the clinical setting and scaled for use in humans. Her lab has seen success using animal models, but further funding is needed for good laboratory testing at an FDA approved laboratory, which will in turn allow for application for FDA approval to begin trials in humans.