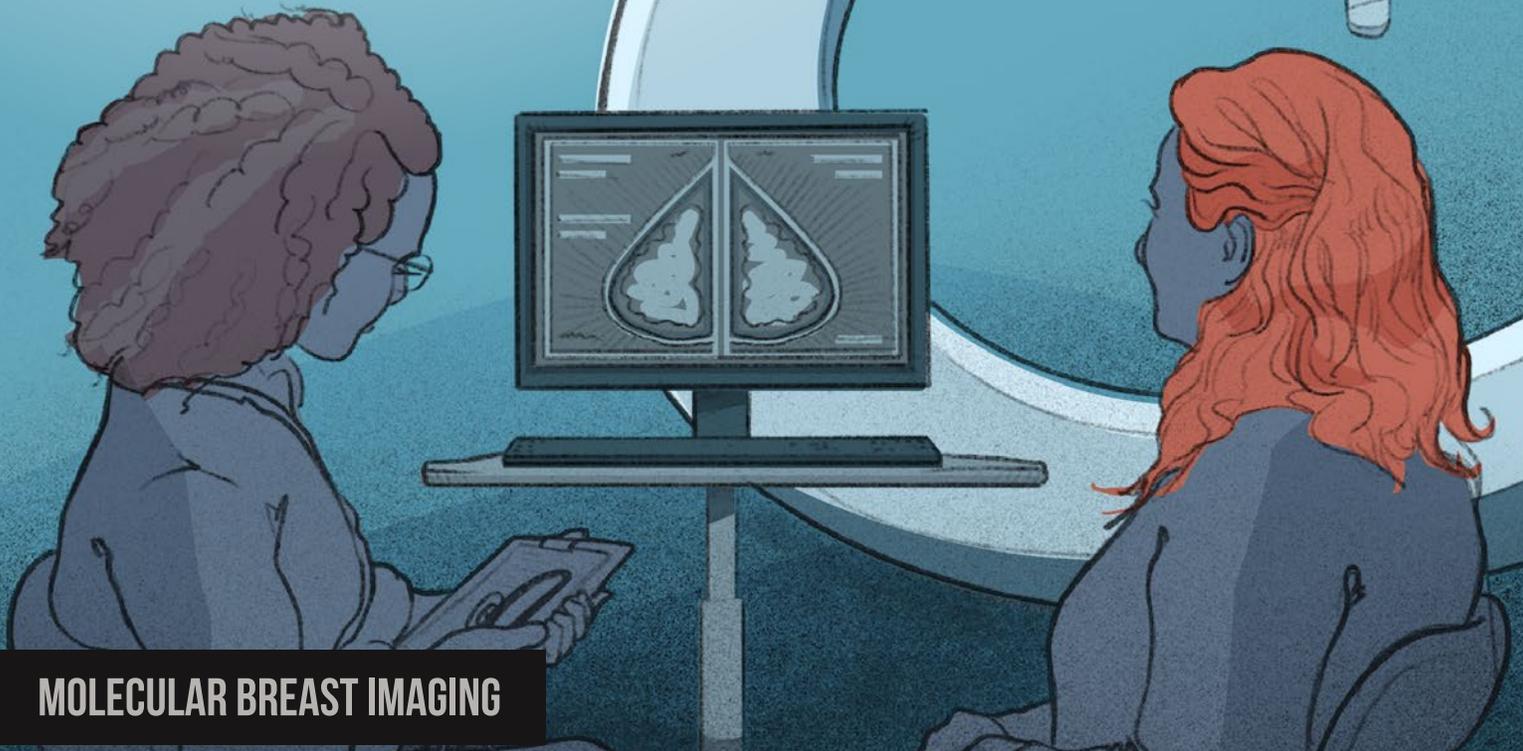


ADVANCING AMERICA *through* TECHNOLOGY TRANSFER

THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY

**TRANSFORMING *the* MEDICAL
IMAGING INDUSTRY**



MOLECULAR BREAST IMAGING

**IMPROVING QUALITY *of* LIFE
WITH EARLY DETECTION *and*
DIAGNOSIS *of* BREAST CANCER**

Jefferson Lab

U.S. DEPARTMENT OF
ENERGY

Office of
TECHNOLOGY TRANSITIONS



How do we apply nuclear research to life-saving nuclear medicine?

Scientists at Thomas Jefferson National Accelerator Facility (Jefferson Lab), in collaboration with industry, advanced conventional breast cancer screening tools with the development of Breast Specific Gamma Imaging, also known as Molecular Breast Imaging (MBI) technology.

Using radiopharmaceutical beacons, MBI's optimized camera form factor improves imaging sensitivity and resolution across all breast cancer risk groups, enabling radiologists to find tumors earlier with greater accuracy. The resulting benefits include reducing unnecessary follow-on diagnostics, allaying patient anxiety, treating cancer less invasively, and improving survival rates and quality of life for patients and their families.

Jefferson Lab at a Glance

Cradled between the James and York Rivers in coastal Newport News and birthplace of the Continuous Electron Beam Accelerator Facility, Jefferson Lab began its first experiments in 1994 as the youngest of the DOE's 17 labs and serves as a forefront nuclear physics research facility to an international scientific user community. With a mission to responsibly enable discoveries and address societal challenges, Jefferson Lab's scientists explore the building blocks of atoms, apply advanced accelerator technologies, and share knowledge through education and public outreach.

U.S. Department of Energy Laboratories

The 17 U.S. Department of Energy (DOE) National Laboratories comprise a preeminent federal research system that executes long-term government scientific and technological missions, often with complex security, safety, project management, or other operational challenges. The National Laboratory system produces the scientific research needed to develop national energy policy and solutions allowing DOE to be one of the largest supporters of technology transfer in the federal government.

Technology Transitions

The mission of the Office of Technology Transitions (OTT) is to expand the commercial impact of the DOE's research and development portfolio to advance the economic, energy, and national security interests of the Nation. The office develops the Department's policy and vision for expanding the commercial impact of its research investments, and streamlines information and access to DOE's National Labs and sites to foster partnerships that will move innovations from the labs into the marketplace.

www.energy.gov/technologytransitions

MBI improves odds of survival by detecting cancers earlier and more accurately

Detection

MBI reduces benign biopsies by 50% over Magnetic Resonance Imaging (MRI).



MBI with mammography results in a nearly threefold increase in invasive cancer detection in at-risk women with dense breast tissue.

Outcomes

MBI enables earlier breast cancer detection when treatment is less invasive, survival rates are higher, and health outcomes are better.

Contact Us

The scientific discovery highlighted on this poster is just one of DOE's many successes advancing America.

Learn more about available resources and partnering opportunities with the National Labs by visiting:

www.energy.gov/technologytransitions

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