

## **LABORATORY/SCIENCE CHALLENGE**

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To pursue the science program planned at Jefferson Lab enhanced particle detection capabilities were needed.

## **TECHNOLOGY SOLUTION: *MOLECULAR BREAST IMAGING***

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In the late 90s Jefferson Lab's Detector group looked for ways that detector technology developed for nuclear physics might be used for benefits outside science and began exploring the potential of applying the technology as a novel gamma camera as a tool for imaging breast cancer.

## **APPLICATION:**

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- In 1997, two local businessmen licensed Jefferson Lab's nuclear imaging technology for use in Breast-Specific Gamma Imaging (BSGI).
- They procured investor funding, setting up a fledgling company, which they named Dilon Technologies, Inc.
- Dilon and JLab signed a Cooperative Research and Development Agreement (CRADA), to adapt the technology into a compact, user-friendly system, easily integrated into breast imaging centers.

## **INDUSTRY PARTNER:**

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## **RESULTS:**

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- First production unit, the Dilon 6800, sold in September 2004.
- Dilon now sells cameras around the world to diagnostic centers.
- As an adjunct to mammography, MBI results in an almost fourfold increase in invasive cancer detection in women with dense breast tissue.
- MBI has a higher specificity than MRI and has proven to reduce benign biopsies by 50%.
- With a negative predictive value of 98% MBI is the beacon in dense breast tissue.
- Worldwide, more than 250,000 patients have been screened with BSGI/MBI.