

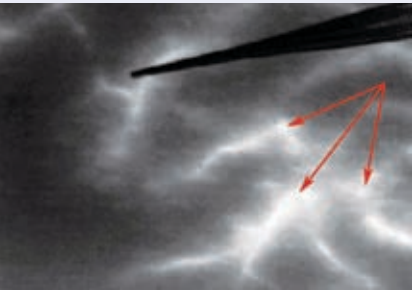
## CLINICAL FIRSTS

### Spying on Blood Vessels

A new intra-operative imaging system at the University's Huntsman Cancer Institute gives plastic surgeon Jayant Agarwal, M.D., the ability to see in real-time if blood is flowing properly within the vessels of newly reconstructed breast tissue.

The SPY Imaging System could potentially improve the efficiency and outcomes of perforator flap reconstructive procedures for post-mastectomy patients.

In this extremely complicated surgery that typically lasts up to 10 hours, microscopic-sized vessels called perforators, which provide the blood supply to a tissue flap, are co-joined



**Muscle Sparing** Three red arrows point to perforators from the deep inferior epigastric artery on the skin surface. These perforators are isolated during the surgery for DIEP breast reconstruction. The advantage of this method over the traditional TRAM flap is that, by carefully isolating and dissecting the perforators, surgeons can spare the rectus muscle, more commonly known as "six pack abs."

to recipient vessels to supply blood to the reconstructed tissue. Agarwal, assistant professor of surgery in the U School of Medicine, uses the fluorescent imaging of SPY to identify the blood vessels and visually assess blood flow and tissue perfusion in realtime.

Since Agarwal began using the imaging system in summer 2008, he has seen a benefit in DIEP

(Deep Inferior Epigastric Artery Perforator) flap breast reconstruction. SPY has enabled him to more accurately identify perforators and determine if the transferred tissue has received enough blood.



**One of the Friendliest** University of Utah Hospital celebrated its official "Baby Friendly" designation by the World Health Organization and United Nations Children's Fund with David Sundwall, M.D., left, director, Utah Health Department, and Peter Corroon, Salt Lake County Mayor. From the U of U are: Karen Buchi, M.D.; Brenda Gulliver, M.S., R.N.; former patient Starlyn Nakos with daughter Wren; Margaret Pearce, Ph.D., M.S.N., M.B.A.; and C. Matthew Peterson, M.D.

### U Hospital First "Baby Friendly" in State

University of Utah Hospital is the first hospital in Utah—and one of only five academic medical centers in the United States—to receive official designation as "Baby Friendly."

The Baby Friendly Hospital Initiative (BFHI), sponsored by the World Health Organization and United Nations Children's Fund, recognizes hospitals and birth centers worldwide whose policies and practices enable parents to make informed choices on feeding and caring for their babies.

Karen Buchi, M.D., U of U professor of pediatrics and a leading Baby Friendly proponent, said University Hospital made a commitment to the initiative four-and-a-half years ago, because "we believe breastfeeding and the natural bond between mother and child are best for both mom and baby. Our pediatricians, family practice physicians, and nurses are fully behind the program and willing to offer support to all families who decide to breastfeed."

A baby friendly hospital must take special steps to create an environment for successful breastfeeding. These include: a written breastfeeding policy; specially trained staff who inform women about the benefits and management of breastfeeding and help them initiate breastfeeding within an hour of birth; and a policy to room babies with moms, rather than in the nursery, around-the-clock.

Research indicates the sooner the baby starts breastfeeding, the longer mom will maintain it after leaving the hospital. Also, breastfed babies are known to have fewer ear infections and fewer problems with food allergies.

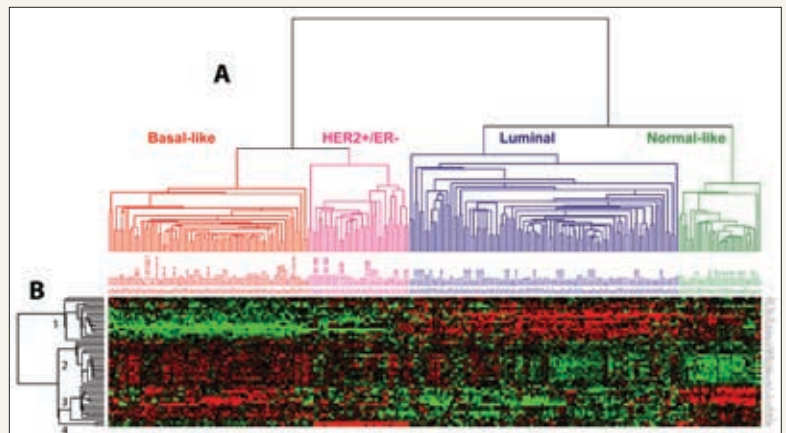
### Tailoring Breast Cancer Treatment

One in eight women in the United States will be diagnosed with breast cancer in her lifetime, and the array of options she is presented can be overwhelming. Now, a new test is helping physicians diagnose breast cancer more accurately and prescribe only the most beneficial treatment.

"Our research shows that there is a subset of women who can be cured with local therapy alone, for example, lumpectomy," said Philip S. Bernard, M.D., associate professor of clinical pathology in the U School of Medicine, investigator at the University's Huntsman Cancer Institute, and a senior author on the multicenter study published in the *Journal of Clinical Oncology*. "In women whose tumors have spread, we can predict with 97 percent accuracy the women who will not benefit from standard chemotherapy."

Physicians and scientists have known that breast cancer is a diverse disease in terms of biology and outcome. Bernard's group has standardized the identification of biological subtypes using a quantitative 55-gene test (50 classifier genes and five control genes). By measuring the expression level of these genes in tumors, they can determine the subtype of the tumor and the risk of relapse when given different therapies.

Their research was translated into a simple test, available nationwide this summer. The study took 10 years to complete and, in addition to the University's HCI, involved: University of North Carolina Lineberger Comprehensive Cancer Center at Chapel Hill; University of British Columbia, Vancouver; and Washington University Siteman Cancer Center in St. Louis.



**Breast Bioclassifier** Gene expression profiles, or signatures, from the 50 genes used in the bioclassifier are shown across several breast cancer patients. Samples and genes are grouped together based on similarities in the expression of these genes. Each group responds differently to chemotherapy and has different prognostic patterns for overall survival, disease-free survival, and relapse. The horizontal axis (A) represents sample association; the vertical axis (B), gene association.