“HOW DOES BREAST CANCER DEVELOP?”

PILOT GRANTS AWARDED TO MULTIDISCIPLINARY TEAMS USING THE INTRADUCTAL APPROACH TO ADVANCE BREAST CANCER PREVENTION

SANTA MONICA, California, March 23, 2015 -- Dr. Susan Love Research Foundation awarded four innovative pilot grants to research projects that will explore using next generation technology to investigate the human breast and how it develops cancer. Three of the pilot grants awarded at Dr. Susan Love Research Foundation’s 8th International Symposium on the Breast are funded by the Susan G. Komen breast cancer organization. The fourth grant is funded by Atossa Genetics (NASDAQ: ATOS).

Recent advances in technology have created opportunities for researchers to explore new theories and directions, such as the microbiome of the breast and the relationship between the anatomy of the breast and cancer risk. With its unique approach to multidisciplinary collaboration, the International Symposium on the Breast attracts innovative clinical researchers, advocates, and basic scientists and challenges them to work together on research projects that explore the cause and prevention of breast cancer.

Speaking at the 8th International Symposium on the Breast, Dr. Susan Love said, “This Symposium is a unique assembly of many of the best minds in breast cancer research. Our approach to multidisciplinary collaborations inspires the exploration of ideas that may be too novel or preliminary for traditional funding mechanisms.”

Dr. Susan Love Research Foundation’s International Symposium on the Breast (February 19-21, 2015) was established to gather world-class researchers, clinicians, and advocates in an intimate think-tank environment to stimulate ideation, collaboration, and ultimately, breakthroughs that will end breast cancer. Teams form at the Symposium, where they develop and present research proposals. An expert panel evaluates the proposals and grants are announced at the Award Dinner on the final evening of the three-day program.

In 2015, Susan G. Komen and Atossa Genetics partnered with Dr. Susan Love Research Foundation to fund $50,000 in pilot grants and a single $20,000 award, respectively, to research collaborations formed during the Symposium.

“This is a tremendously exciting approach to granting that fosters the innovative thinking and scientific collaboration that are critical for the future of breast cancer research,” said Komen President and CEO Judith A. Salerno, MD, MS, who awarded the 2015 Pilot Grants. “We expect great results from these teams about this fundamental question: How does breast cancer develop?”
Dr. Susan Love Research Foundation’s 8th International Symposium on the Breast Pilot Grants, funded by Susan G. Komen, were awarded to:

**Immune Profiling of Benign Breast Disease**

Sabina Adhikary, PhD, John Wayne Cancer Institute; Amy Degnim, MD, Mayo Clinic; Peter Sieling, PhD, John Wayne Cancer Institute; Michelle Rakoff and Lissa Levin, Advocates.

Dr. Sabina Adhikary is a research associate at the Laboratory of Translational Immunology at the John Wayne Cancer Institute, which explores the innate and adaptive immunity in breast cancer. Dr. Amy Degnim leads a team that uses the Mayo Clinic Benign Breast Cohort, which includes about 15,000 women to study whether premalignant changes in breast tissue can be used to predict an individual woman’s breast cancer risk. This consortium received $16,000 to explore whether immune profiling of lymphocytes in women with benign breast disease can predict who will go on to develop breast cancer. This research could lead to the identification of new predictive markers for breast cancer risk and opportunities for prevention.

**Optical Coherence Tomography for Breast**

Sheldon M. Feldman, MD, Columbia University; Fatih Levent Balci, MD, Acibadem University (AU), Istanbul in affiliation with Columbia University; Christine P. Fleming, PhD, Columbia University; Linda Wilkes, Advocate.

Dr. Sheldon Feldman and Dr. Fatih Balci study intraductal approaches to breast cancer. They are currently investigating the effectiveness of optical coherence tomography (OCT), which is used in cardiology to look at blood vessels from the inside using light instead of sound (as an ultrasound does) to create three-dimensional images. OCT may be able to identify early changes in the breast duct before ductal carcinoma in situ (DCIS) or cancer forms. This consortium received $17,000 to study whether it is feasible to use OCT to distinguish different types of breast cells and tissues and whether OCT can show features of invasive cancers or DCIS that are detected on ultrasound or mammography. This work could identify reproducible ways to image early changes in the ducts and set the stage for prevention studies.

**Intraductal Therapy & Prevention of Breast Cancer: De-Jamming JAM-A**

Sara Sukumar, PhD, Johns Hopkins University School of Medicine (JHUSOM); Ann Hopkins, PhD, Royal College of Surgeons in Ireland; David Euhus, MD and Vered Stearns, MD, JHUSOM; Kim Wright, MS, Advocate.

Dr. Sara Sukumar studies the safety and effectiveness of intraductal therapy in animal models of breast cancer. Dr. Ann Hopkins has conducted research on a tight junction protein called Junctional Adhesion Molecule-A (JAM-A), which has been found to drive functional behaviors associated with breast cancer progression and directly regulate HER2 protein levels. The overexpression of JAM-A has been shown to be predictive of an aggressive tumor and a poor prognosis. Early preclinical data suggests a drug that targets JAM-A has the potential to be an effective breast cancer treatment. This consortium received $17,000 to analyze overexpression of JAM-A in ductal carcinoma in situ (DCIS); determine if this expression correlates with clinical factors; and investigate whether treatments delivered directly into the breast ducts could target
JAMA-A and prevent or reduce DCIS in animal models of breast cancer. This research could lead to prevention of invasive breast cancer through a local means.

The $20,000 Atossa Award was given to:

**TLR5 Agonist-Antitumor Immunity**

Peter Sieling, PhD, John Wayne Cancer Institute (JWCI); Sara Sukumar, PhD, Johns Hopkins University School of Medicine; Maggie DiNome, MD, JWCI; Lissa Levin and Michelle Rakoff, Advocates.

Peter Sieling is the assistant director of the Laboratory of Translational Immunology at the John Wayne Cancer Institute, where he studies the innate and adaptive immunity of breast tumors. Many breast tumors contain inflammatory cells, particularly CD8 lymphocytes. Patients with these tumor-infiltrating CD8 lymphocytes have been found to have a better outcome. Toll-like receptor 5 (TLR5) helps the immune system recognize specific pathogens. It also activates an innate antimicrobial immune response. Laboratory studies have shown that a TLR5 agonist, flagellin, inhibits the growth of breast cancer cells. Dr. Sara Sukumar’s research has explored the safety and effectiveness of intraductal therapy in animal models of breast cancer. This consortium received $20,000 to study the safety and effectiveness of intraductal flagellin in animal models, with the ultimate goal of conducting a clinical trial of intraductal flagellin in breast cancer patients. This may serve as a way to prevent invasive breast cancer from developing.

###

**About Dr. Susan Love Research Foundation**

Dr. Susan Love Research Foundation is dedicated to achieving a future without breast cancer by engaging the public and the scientific communities in innovative research on cause and prevention. We do this through performing and facilitating innovative and collaborative research, translating science to engage the public as informed partners, and inspiring novel research. Learn more at [www.DrSusanLoveResearch.org](http://www.DrSusanLoveResearch.org).

**About Susan G. Komen**

Susan G. Komen is the world’s largest breast cancer organization, funding more breast cancer research than any other nonprofit while providing real-time help to those facing the disease. Since its founding in 1982, Komen has funded more than $847 million in research and provided more than $1.8 billion in funding to screening, education, treatment, financial and psychosocial support programs serving millions of people in more than 30 countries worldwide. Komen was founded by Nancy G. Brinker, who promised her sister, Susan G. Komen, that she would end the disease that claimed Suzy’s life. Visit komen.org or call 1-877 GO KOMEN. Connect with us on Facebook at [www.facebook.com/susangkomen](http://www.facebook.com/susangkomen) and Twitter @SusanGKomen.

**About Atossa Genetics**

Atossa Genetics Inc. is focused on improving breast health through the development of laboratory services, medical devices and therapeutics. The laboratory services are being developed by its subsidiary, The National Reference Laboratory for Breast Health, Inc. The laboratory services and the Company's medical devices are being developed so they can be used as companions to therapeutics to treat various breast health conditions. Atossa’s medical devices have not been cleared nor approved by the U.S. Food and Drug Administration for the potential uses and treatments identified in the above proposed studies. For more information, please visit [www.atossagenetics.com](http://www.atossagenetics.com).