Welcome to the 40th Anniversary of San Antonio Breast Cancer Symposium

Welcome to the 2017 San Antonio Breast Cancer Symposium (SABCS), a joint presentation of the UT Health Cancer Center, Baylor College of Medicine, and the American Association for Cancer Research (AACR).

We celebrate our 40th anniversary with an expanded program including additional education sessions, new workshops, a special anniversary award lecture and an Oxford-style debate.

SABCS 2017 presents new knowledge and data that will both affect immediate clinical practice and point toward new possibilities for enhancing patient care. Much of the research is focused on discovering and applying specific molecular properties of individual breast tumors to select their most effective therapies, and to exploring and targeting new pathways for treatment. There are promising clinical and laboratory studies of mechanisms underlying resistance to existing treatments, and exciting new findings in immune therapy and in genomics, along with studies of surgery and radiotherapy in local treatment, and of survivorship and economic issues. In addition, there are valuable sessions and presentations on basic science and translational research on a wide range of topics that will fuel the next generation of clinical advances.

All of this will be packed into 5 days. Tuesday begins with another of our international sessions focused on dealing with breast cancer in settings with various economic and cultural challenges around the world. Also, new this year, there will be two workshops, one on molecular biology in breast oncology and one on methods in breast cancer clinical research. The day will continue with a rich menu of educational sessions on a variety of clinical and translational issues, and will end with a reception recognizing this year’s 40th anniversary of SABCS.

The following 3 days will feature submitted research in 6 oral sessions, 6 poster sessions, and 8 “spotlight” poster discussion sessions, interspersed with invited plenary talks and award lectures, mini-symposia, clinical and basic science forums, and case discussions. Friday afternoon will also offer for the first time a structured debate, on whether or not all women diagnosed with metastatic breast cancer should receive next-generation sequencing. And Friday evening will include a panel discussion, introduced last year, called “View from the Trenches: What Will You Do on Monday Morning?”

Saturday morning will conclude this year’s symposium with a final poster session and continental breakfast, and then the annual “Year in Review”, in which four distinguished speakers provide a synthesis of major developments in breast cancer during the past year – one of the most popular events of the week.

Our symposium program strives to inform all breast cancer professionals about the expanding frontiers of our knowledge, and to show the way to future

Continued to Page 2
Plenary Lecture #1: Potential of Radiation Therapy to Convert the Tumor into an In Situ Vaccine
Silvia C. Formenti, MD
Weill Cornell Medicine

Wednesday, Dec 6 • 9:00 AM • Hall 3

On Wednesday morning, Silvia C. Formenti, MD, from Weill Cornell Medicine in New York, will present the first of three plenary lectures at this year’s symposium. Dr. Formenti will discuss the potential of radiation therapy to convert a tumor into an in situ vaccine, and the underlying mechanism of this immunogenic response.

The work of Dr. Formenti and her group involved the application of local radiotherapy with and without immunotherapy on mice with metastatic breast cancer. They found that with certain radiotherapy doses, the combination of radiation and immunotherapy resulted in an enhanced systemic response, thus demonstrating the ability to convert the irradiated tumor into an individualized in situ vaccine.

One of the key steps to converting the tumor into an in situ vaccine is the induction of interferon type I (IFN-I), a molecule that recruits dendritic cells and triggers cross-priming of T cells. Induction of IFN-I occurs when double-stranded DNA is generated after radiation, and DNA fragments reach the cytoplasm of irradiated cells. These cytosolic DNA fragments stimulate cGAS, a synthase, and STING, its adapter protein, triggering IFN-I.

As Dr. Formenti will explain in greater detail, her group found that the initiation of this immunogenic pathway depends largely on radiotherapy dosing and fractionation. Radiotherapy doses that are too high may induce Trex1, an exonuclease that degrades the cytoplasmic DNA fragments that lead to the stimulation of cGAS/STING and induction of IFN-I, thus blocking key steps in the conversion of the tumor to a vaccine. Conversely, radiotherapy doses that are too low may not generate enough of the substrate of double-stranded DNA fragments needed to be “sensed” by cGAS/STING, thus blocking the signal for IFN-I induction.

This underlying mechanism of dose-dependence is an important finding for trial design and clinical applications as patient selection and optimal dosing are currently being studied. As studies continue to look at the effects of radiotherapy in combination with immunotherapy, investigators can now design trials based on findings that a single large dose of radiotherapy may not be as effective in eliciting an enhanced immune response as 3 to 5 radiation doses of a certain size. These effective doses are compatible in the clinical setting, though the strategy aims to enhance immunotherapy in the setting of metastatic cancer rather than to control local recurrence in the breast. The work of Dr. Formenti and her team continues to advance the understanding of the interaction between metastatic breast cancer and the immune system.
Three programs provided scholarships designed to promote the education and professional development of early-career scientists who are actively pursuing research in breast cancer by facilitating their attendance at SABCS. Scholarships were awarded to graduate students, medical students, residents, and clinical and postdoctoral fellows whose abstracts were accepted for presentation, based on the quality of the abstracts. This year’s awardees are:

**SABCS CLINICAL SCHOLARS:**  
For clinical scientists-in-training who are actively pursuing clinical or clinical/translational research in breast cancer.

Matteo Lambertini, MD  
Adrienne Waks  
Ryan Powles, MS  
Courtney Williams, MPH

**SABCS BASIC SCIENCE SCHOLARS:**  
For laboratory-based investigators-in-training whose work focuses on the biology of breast cancer and preclinical models of its development and progression.

Karam Asleh-Aburaya, MD  
Looket Dihge, MD  
Bastien Nguyen  
Matt Paul  
Borbala Szekely, MD

**AACR SCHOLAR-IN-TRAINING AWARDS:**

Carmine DeAngelis  
Sangeetha Reddy  
Anne-Sophie Hamy-Petit, MD  
Nur Zeinomar, PhD, MPH  
Koichi Ito, PhD  
Nolan Priedigk, BS  
Tanya Keenan, MD, MPH  
Sreeja Sreekumar, PhD  
Douglas Marks, MD  
Maki Tanioka, MD
PRODUCT THEATRE SCHEDULE

WEDNESDAY, DEC 6TH

12:15 PM
Case-Based Preoperative Considerations in HER2+ Breast Cancer: A Multidisciplinary Approach
Presented by Genentech

2:00 PM
Analytical and Clinical Validation of DEPArray for HER2 Status Determination
Presented by Menarini Silicon Biosystems

3:30 PM
Breast Cancer 360: Decode the Complexity of Breast Cancer Biology
Presented by NanoString Technologies

THURSDAY, DEC 7TH

12:15 PM
Clinical Consensus: Recommendations on Extended Endocrine Therapy
Presented by Biotheranostics

2:00 PM
Expanded Indication for a First-in-Class Oral Therapy for the Treatment of a Broad Range of Women With HR+/HER2- Metastatic Breast Cancer
Presented by Pfizer Oncology

3:30 PM
Now Approved: NERLYNX™ (neratinib) tablets
Presented by Puma Biotechnology

FRIDAY, DEC 8TH

12:15 PM
Managing ER+, HER2- Early-stage Breast Cancer Patients with Recurrence Score Results < 25
Presented by Genomic Health

2:00 PM
A Treatment Option for Patients With HR+/HER2- Advanced or Metastatic Breast Cancer
Presented by Lilly Oncology

3:30 PM
Key Considerations for Treatment With a CDK4/6 Inhibitor for Postmenopausal Women With HR+/HER2- Advanced Breast Cancer
Presented by Novartis Oncology

Conference Grants

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Educational Grants

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Awards

WILLIAM L. MCGUIRE MEMORIAL LECTURE
WEDNESDAY, DEC 6 • 11:15 AM • HALL 3

The Early Breast Cancer Trialists’ Collaborative Group
Sir Richard Peto, FRS
University of Oxford
Oxford, United Kingdom

Sir Richard Peto, Professor of Medical Statistics and Epidemiology at University of Oxford and co-director of the Clinical Trial Service Unit and Epidemiology Studies Unit in Oxford, is this year’s William L. McGuire Memorial Lecturer. Sir Richard is perhaps best known for being one of the founders of the meta-analysis method, which takes raw data from each patient from all randomized studies addressing a particular question to produce a combined analysis with thousands of patients to correct false positives and false negatives of individual trials which are often too small for meaningful interpretation. Using this method, his contributions have been practice changing. He and Richard Doll helped to discover the many hazards of smoking tobacco, premature deaths from many diseases including cancer caused by smoking, and that stopping smoking can prevent these premature deaths. The breast cancer community knows Sir Richard best for his work leading the Early Breast Cancer Clinical Trials Group, which required contacting academic centers around the world and convincing them to send patient specific data to Oxford for a meta-analysis of early breast cancer which has been updated every five years now for several decades. He has also conducted very important studies in cardiac disease and stroke. Indeed, Peto’s research has contributed immensely to public health around the world.
Awards

SUSAN G. KOMEN® BRINKER AWARDS FOR SCIENTIFIC DISTINCTION LECTURES
WEDNESDAY, DEC 6 • 2:15 PM • HALL 3

Established by Komen in 1992, the Brinker Awards for Scientific Distinction recognize the efforts of pioneers in two critically important areas of the fight to end breast cancer: Clinical Research and Basic Science. Advances both in the clinical setting and in our understanding of the underlying mechanisms of breast cancer are essential to combating the disease.

Two leading breast cancer investigators today join the ranks of an esteemed group of scientists who have been recognized for advancing breast cancer research and medicine with the prestigious Brinker Awards – the highest scientific honor awarded by Susan G. Komen, the world’s leading breast cancer organization.

The Development of Synthetic Lethal Treatments for Cancer
This year’s Brinker Award for Scientific Distinction in Basic Science will be presented to Alan Ashworth, Ph.D., F.R.S., President of the UCSF Helen Diller Family Comprehensive Cancer Center and Senior Vice President for cancer clinical services at UCSF Health, Professor of Medicine in the Division of Hematology/Oncology, Department of Medicine, and E. Dixon Heise Distinguished Professor in Oncology.

For the last two decades, Dr. Ashworth’s research has focused on exploiting genetic deficiencies in cancer to develop new therapeutic approaches to the disease. In 1995, he was a key part of the team that identified the BRCA2 gene and BRCA2 mutations associated with elevated risk of developing breast and other cancers. These discoveries paved the way for genetic testing for BRCA1 and BRCA2, which has helped women at high risk of developing breast and ovarian cancer make informed decisions about preventive treatment. Dr. Ashworth also discovered a way to kill BRCA1- and BRCA2-related tumor cells by treating them with a new class of drugs called poly(ADP-ribose) polymerase inhibitors or “PARP inhibitors.” These findings provided the foundation for many clinical trials using PARP inhibitors to treat cancer. His continuous focus on translating his laboratory finding to the clinic has paved the way for more personalized treatment options for patients with BRCA mutations, and will have a lasting impact for years to come.

“We are thrilled that Dr. Ashworth is being recognized and honored for his pioneering work, which has been instrumental in the development of PARP inhibitors, drugs that show great promise in the treatment of breast, ovarian, and other cancers among individuals who carry BRCA1/2 mutations. Dr. Ashworth’s seminal discoveries have opened up innovative areas of research at the intersection of biochemical mechanisms of DNA repair and development of targeted therapies for individuals with breast cancer,” said Jennifer Pietenpol, Ph.D., Komen Chief Scientific Advisor and Benjamin F. Byrd Jr. Professor of Oncology and director of Vanderbilt-Ingram Cancer Center.

Molecular Diversity of Human Breast Cancer: Biologic and Therapeutic Implications
Dennis Slamon, M.D., Ph.D., Director of Clinical and Translational Research and Director of Revlon/UCLA Women’s Cancer Research Program at Jonsson Comprehensive Cancer Center, and Professor of Medicine, Chief of the Division of Hematology-Oncology, and Executive Vice-Chair for Research, Department of Medicine, David Geffen School of Medicine at UCLA, will receive the Brinker Award for Scientific Distinction in Clinical Research.

Dr. Slamon is being honored for his influential contributions in laboratory and clinical research that helped define the role of the HER2/neu gene in breast cancer and laid the groundwork for the development of targeted therapies, including trastuzumab (the first targeted therapy for HER2+ breast cancer) and palbociclib (a CDK4/6 inhibitor used to treat estrogen receptor positive [ER+] breast cancer). Dr. Slamon led everything from pre-clinical studies to the clinical trials that led to the Food and Drug Administration (FDA) approval of trastuzumab for treatment of HER2+ metastatic breast cancer in 1988, and later for its use on all HER2+ breast cancers – a contribution that has saved many lives. In 2007, Dr. Slamon expanded his focus to investigate the biology of other breast cancer subtypes in a quest to find and target their Achilles’ heels (as he did with HER2+ disease). He conducted preclinical and clinical studies that resulted in FDA approval of the drug palbociclib in combination with letrozole (an aromatase inhibitor) in women with ER+/HER2- metastatic breast cancer in 2015. To this day, Dr. Slamon and colleagues continue to optimize the use of palbociclib and HER2 targeted therapies for the treatment of breast cancers and investigate mechanisms of resistance to these drugs.

“Few individuals have had as great an impact on the lives of breast cancer patients as Dennis Slamon. From his pioneering early work defining a role for HER2 as a driver of breast cancer, to the establishment of trastuzumab as an effective therapy, his studies changed forever how we treat this breast cancer subtype, with incalculable benefit for large numbers of patients,” said Komen Chief Scientific Advisor George Sledge Jr., MD, Professor of Medicine and Pathology, and Chief of the Division of Oncology in the Department of Medicine at Stanford University. “The more recent work Dr. Slamon and his UCLA colleagues performed in identifying CDK 4/6 as an important target for ER-positive breast cancer led directly to FDA approvals of three new drugs for ER-positive disease.”
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