



Research Grant Recipients

Since our inception in 1995, Friends for an Earlier Breast Cancer Test® has given \$3,806,377 to fund seed grants in the specific area of finding a biological test to detect breast cancer in its earliest stage.

2015

Total Grants \$200,000

Fox Chase Cancer Center (Philadelphia, PA)

\$40,000

“Ultra-Deep Sequencing for Detection of p53 and PIK3CA mutations in DCIS and Surveillance of High-Risk Women by Blood as a Liquid Biopsy for Early Diagnosis of Invasive Breast Cancer”

Dr. Paul Cairns

Tulane University (New Orleans, LA)

\$40,000

“Detection of Early Breast Cancer by Circulating HER4 Extracellular Domain ELISA”

Dr. Frank Jones

University of Louisville (Louisville, KY)

\$40,000

“Isolation and Characterization of Circulating Tumor Cells for Detection of Early Breast Cancer”

Dr. Lori Millner

Mayo Clinic (Rochester, MN)

\$40,000

“Pilot Study to Evaluate Dedicated Breast Positron Emission Tomography as a new Imaging Technique for Early Detection of Breast Cancer”

Dr. Michael O’Connor

Indiana University (Indianapolis, IN)

\$40,000

“Quantitative PCR Analysis of Telomere Fragility in Plasma Circulating and Cell-Free DNA for Early Breast Cancer Detection”

Dr. Hiromi Tanaka

2014 **Total Grants \$159,961**

University of Massachusetts (Amherst, MA) **\$40,000**
“Detection of micro-scale tumors and metastases with non-toxic bacteria”
Neil S. Forbes

Cleveland Clinic (Cleveland, OH) **\$40,000**
“Microbiomics for Breast Cancer Detection”
Stephen R. Grobmyer, MD, FACS

Washington University in St. Louis (St. Louis, MO) **\$39,961**
“Development of anti-CD44 scFv’s for Early Detection of Breast Cancer by PET Imaging”
\$39,961
Buck E. Rogers, Ph.D.

Case Western Reserve University (Cleveland, OH) **\$40,000**
“Circulating RNAs for the Early Detection of Breast Cancer”
Cheryl Thompson, Ph.D.

2013 **Total Grants \$200,000**

Mayo Clinic (Rochester, MN) **\$40,000**
“Development and evaluation of a combined molecular breast imaging/breast ultrasound system”
Dr. Carrie Hruska

Ben-Gurion University (Beer-Sheva, Israel) **\$40,000**
“Non-Invasive early detection of breast cancer: developing bi-specific APPI peptides and small molecule conjugates that bind to both avbeta3 integrin and MY1-MMP”
Dr. Niv Papo

Tel Aviv University (Tel Aviv, Israel) **\$40,000**
“Combining genetic and epi-genetic markers for early detection of breast cancer”
Dr. Noam Shomron

Stanford University (Stanford, CA) **\$40,000**
“Highly Sensitive Breast Cancer and Lymphnodes Cereukow Imaging Mediated by Gold Nano-Clusters”
Dr. Lei Xing

University of California, Irvine (Irvine, CA) **\$40,000**
“In vitro evolution of molecular sensors that detect breast cancer at early stage”
Dr. Weian Zhao

2012

Total Grants \$160,000

Roswell Park Cancer Institute (Buffalo, NY) \$40,000

“Identification of Novel MicroRNA biomarkers for Early Detection of Breast Cancer”

Dr. Stefano Rossetti

Harvard University (Cambridge, MA) \$40,000

“Novel Peptides as Candidate Breast Cancer Biomarkers”

Dr. Alan Saghatelian

University of North Carolina – Greensboro (Greensboro, NC) \$40,000

“An Ultrasensitive Detection Platform for Breast Cancer Biomarkers Present in Serum”

Dr. Marinella Sandros

University of California – San Francisco (San Francisco, CA) \$40,000

“Detecting the Early Oncogenic Kinome Signature of Breast Cancer”

Dr. Laura Van’t Veer

2011

Total Grants \$160,000

Mayo Clinic (Rochester, MN) \$40,000

“Evaluation of Low-dose Molecular Breast Imaging for Detection of Breast Cancer”

Dr. Carrie Hruska

Stanford University (Stanford, CA) \$40,000

“X-Ray Stimulated Fluorescence for Early Detection of Breast Cancer”

Dr. Dimitre Hristov

Fox Chase Cancer Center (Philadelphia, PA) \$40,000

“DNA-Methylation Changes in Premalignant Lesions of the Breast”

Dr. Sandra V. Fernandez

University of North Carolina at Chapel Hill (Chapel Hill, NC) \$40,000

“Epigenetic Field Cancerization in the Development of Basal-like Breast Cancer”

Dr. William B. Coleman

2010

Total Grants \$240,000

Mayo Clinic (Rochester, MN) **\$40,000**
“Evaluation of Molecular Breast Imaging in the Detection of Breast Cancer in Patients with high risk Benign Breast Lesions”
Dr. Judy Boughey

Duke University (Durham, NC) **\$40,000**
“Diagnosis of Aggressive Breast Cancer with Enhanced Microwave Radiometry: Detection of Rapidly Proliferating Tumors by Noninvasive Deep Temperature Mapping”
Dr. Paolo Maccarini

Stanford Univeristy (Stanford, CA) **\$40,000**
“Combined Mammography and X-Ray Activatable Nonophosphor Molecular Imaging for Early Breast Cancer Detction”
Dr. Lei Xing

Technion-Israel Institute of Technology (Haifa, Israel) **\$40,000/2 yrs.**
“Early Diagnosis and Screening of Breast Cancer by an array of Nanosensors”
Dr. Hossam Haick

Roswell Park Cancer Institute (Buffalo, NY) **\$40,000**
“Identification of Unique Breast Pre-Malignant Signatures”
Dr. Nicholetta Sacchi

Roswell Park Cancer Institute (Buffalo, NY) **\$40,000**
“A Blood Test for Early Detection of Breast Cancer”
Dr. Ashwani Sood

2009

Total Grants \$394,694

University of California at San Diego (San Diego, CA) **\$37,250**
“PTHrP: Translation of Molecular Biology to the Development of an Earlier Breast Cancer Test”
Dr. LJ Deftos

Edinburgh Napier University (Edinburgh, Scotland) **\$40,000**
“Potential of Altered AGP Glycosylation As A Marker for Breast Carcinoma”
Dr. Kevin Smith

Sidney Kimmel Cancer Center (San Diego, CA) **\$40,000**
“Evaluation of a Protein Microarray-based Profiling Assay of Enzymatic Activity for Breast Cancer Detection”
Dr. Charles Spruck

2009, continued

Arizona State University (Tempe, AZ) \$40,000
“Discovery and Validation of Artificial Recognition Elements for Detection of MUC1 Breast Cancer Biomaker”
Dr. Kathryn Boltz

Moffitt Cancer Center (Tampa, FL) \$37,500
“Identified of Circulating Serum Biomarkers Via Gene Expression Profiling For Breast Cancer Screening”
Dr. Marie Catherine Lee

University of Texas (Austin, TX) \$40,000
“Hyperspectral Microscopic Imaging of Circulating Tumor Cells (CTSCs) Isolated in Microfluidic Channels for Early Breast Cancer Diagnostics”
Dr. John Zhang

Duke University (Durham, NC) \$39,944
“Assessment of nuclear Snail-1 protein in early stage breast cancer”
Dr. Robin Bachelder

University of Texas - MD Anderson Cancer Center (Houston, TX) \$40,000
“DNA damage as a Biomarker of Risk of Breast Cancer”
Dr. Isabelle Bedrosian

Mayo Clinic (Rochester, MN) \$40,000
“Molecular Breast Imaging for Screening of Women at Average Risk of Breast Cancer”
Dr. Carrie Hruska

University of California at San Diego (San Diego, CA) \$40,000
“Breast Cancer Detection with Targeted DNA Nanoparticles”
Dr. Bradley Messmer

2008

Total Grants \$317,915

University of Virginia (Charlottesville, VA) \$40,000/2 years
“Measurement of Aromatase in the Breast: Use for Breast Cancer Risk Assessment and Early Detection”
Dr. Sarah Aiyar, et al

University of Massachusetts (Amherst, MA) \$39,915/15 months
“Compact Microwave Array Imaging Chamber for Improved Early Breast Cancer Detection”
Drs. Anatoliy Boryssenko and Richard Arenas

2008, continued

University of North Carolina (Chapel Hill, NC) **\$40,000**
"Contribution of a Novel BRCA1 Promoter Polymorphism to Increased Breast Cancer Susceptibility"
Dr. William Coleman

Duke University (Durham, NC) **\$40,000**
"Validation of Novel Candidate Genes Involved in Early Breast Cancer Progression"
Dr. Joseph Geradts

University of Pittsburgh Cancer Institute (Pittsburgh, PA) **\$40,000**
"Development of Chimeric Biopolymers as Molecular MRI Contrast Agents to Detect Premalignant Breast Lesions, Breast Cancer, and Metastasis"
Dr. Qihong He

University of Texas at Houston (Houston, TX) **\$40,000**
"Developing a New Serum Assay for Detection of a Potential Novel Biomarker in Early Stages of Breast Cancer"
Dr. Wenzheng Zhang

University of Pittsburgh Cancer Institute (Pittsburgh, PA) **\$40,000**
"Biomarkers of Invasive and Metastatic Potential in Breast Cancer in Situ"
Dr. Stephen Grant

University of California at San Francisco (San Francisco, CA) **\$38,000**
"Targeted X-Ray Nano Molecular Imaging Agents for Breast Cancer Early Detection"
Dr. Ella Fung Jones

2007

Total Grants **\$470,550**

University of California at San Francisco (San Francisco, CA) **\$39,977**
"Developing tumor-specific uptake of MR contrast agents in breast cancers"
Dr. Heike E. Daldrup-Link

Washington University School of Medicine (St. Louis, MO) **\$40,000**
"A Serum Assay for the Detection of Breast Cancer"
Dr. Timothy Fleming

Indiana University (Indianapolis, IN) **\$37,000**
"Targeting Telomere Dysfunction for Early Detection of Breast Cancer"
Dr. David P. Gilley

2007, continued

Indiana University (Indianapolis, IN)	\$39,300
<i>"A Cancer Associated Isoform of PCNA in Breast Cancer has Implications as a Potential Biomarker for Disease"</i>	
Dr. Robert J. Hickey	
Mayo Clinic (Rochester, MN)	\$34,300
<i>"Serum Biomarkers for Early Detection of Basal-Like Cancer of the Breast"</i>	
Dr. Eric W. Klee	
Robert H. Lurie Comprehensive Cancer Center (Chicago, IL)	\$40,000
<i>"A Composite DNA Methylation Biomarker for Detection of Breast Cancer"</i>	
Dr. Victor V. Levenson	
Purdue University (West Lafayette, IN)	\$40,000
<i>"Breast Cancer-Specific tNOX Isoform for Early Detection and Diagnosis"</i>	
Dr. D. James Morré	
Mayo Clinic (Rochester, MN)	\$40,000
<i>"Comparison of Magnetic Resonance Imaging and Molecular Breast Imaging in Breast Diagnostic Evaluation"</i>	
Dr. Michael K. O'Connor	
MD Anderson Cancer Center at the University of Texas (Austin, TX)	\$40,000
<i>"Proteomic Detection and Validation of Proteins Produced Human Breast Tumors at the Earliest Time for Detection"</i>	
Dr. Fredika Robertson	
Mayo Clinic Comprehensive Cancer Center (Jacksonville, FL)	\$40,000
<i>"Defining Protein Kinase D1 As An Early Marker For Breast Cancer"</i>	
Dr. Peter Storz	
Russian Academy of Medical Sciences (Moscow, Russia)	\$40,000/2 yrs.
<i>"Development and validation of a differential methylation screening technology applicable for the identification of early breast cancer diagnostic markers"</i>	
Dr. Vladimir Strelnikov	
Mayo Clinic College of Medicine (Rochester, MN)	\$39,973
<i>"Candidate Gene Approach for Identification of Novel Breast Cancer Susceptibility Genes"</i>	
Dr. Csilla Szabo	

2006

Total Grants \$144,664

University of North Carolina at Chapel Hill (Chapel Hill, NC) \$39,914

"Detection of a +ACA BRCA1 Promoter Polymorphism in Constitutional DNA Identifies Individuals at Increased Risk for Breast Cancer"

Dr. William Coleman

University of Washington School of Medicine (Seattle, WA) \$40,000

"Identifying the Immunologic Signature of Breast Cancer for Use in the Early Detection of Disease"

Dr. Mary Disis

University of Melbourne (Melbourne, Australia) \$8,250

"Targeting the Novel Glucose Transporter GLUT12 for the Early Detection of Breast Cancer"

Dr. Suzanne Rogers

State University of New York – Downstate (Brooklyn, NY) \$39,000

"BC200 RNA: A Novel Molecular Indicator of Invasiveness for Breast Cancer"

Dr. Anna Iacoangeli

Wake Forest University Baptist Medical Center (Winston-Salem, NC)

Dr. Steven Akman

\$17,500

Grant funded in conjunction with *Golfers Against Cancer*

2005

Total Grants \$316,354

Dana-Farber Cancer Institute (Brookline, MA) \$40,000

"Using Protein Microarrays to Identify Early Biomarkers in DCIS"

Dr. Karen Anderson

SUNY Stony Brook (Stony Brook, NY) \$40,000

"Breast Cancer Detection and Screening Using Testes Specific Protein 50 (TSP 50) Antibodies"

Dr. Vladimir Jurukovski

Columbia University (New York, NY) \$40,000

"Gene Methylation in Tumor DNA in Blood"

Dr. Regina Santella

2005, continued

University of California at Davis (Davis, CA) \$37,900

"Serum Glycan Profiling as a Diagnostic Aid in Breast Cancer"

Suzanne Miyamoto

University of Kansas (Lawrence, KS) \$40,000

"Centrosomal Biomarker For Early Detection of Human Breast Cancer"

Dr. Jonathan Li

Mayo Clinic (Rochester, MN) \$40,000

"Visual and Computer Aided Analysis of Real-time Ultrasound Strain Image Sequences for Non-invasive Diagnosis of Breast Lesions"

Dr. Nicholas Hangiandreou

Winship Cancer Institute at Emory University (Atlanta, GA) \$40,000

"Targeted Magnetic Nanoparticle Probes for Non-invasive Imaging of Breast Cancer Using MRI"

Dr. Lily Yang

Wake Forest University School of Medicine (Winston-Salem, NC) \$38,458

"BARC (SCGF) in Breast Cancer Growth and Detection"

Dr. Suzy Torti

2004

Total Grants \$193,489

Fox Chase Cancer Center (Philadelphia, PA) \$40,000

"Benign Breast Registry to Assess Valid Endpoints"

Dr. Mary Daly

Mayo Clinic (Rochester, MN) \$39,900

"Prediction of Invasive Breast Cancer and Breast Cancer Risk in DCIS and Benign Breast Disease by Analysis of Methylated Gene Markers"

Julian R. Molina, MD, PhD and Lynn Hartman, MD

Purdue University (West Lafayette, IN) \$35,289

"Using the local bright feature algorithm to monitor the distribution of the nuclear protein NuMA. A novel approach for earlier detection of breast cancer"

Sophie A. Lelievre, D.V.M.

2004, continued

Washington University (St. Louis, MO) **\$38,300**
"PET Imaging for Early Detection of Breast Cancer with a Radioactive Peptide"
Buck E. Rogers, PhD

University of Missouri at Columbia (Columbia, MO) **\$40,000/2 years**
*"DNA Methylation Pattern in Breast Cancer Tissue and matched Nipple Aspirate
Fluid/Serum"*
Dr. Weizhu Zhu

2003

Total Grants \$177,052

Dana-Farber Cancer Institute (Brookline, MA) **\$38,000**
"A Proteomic Approach to Early Diagnosis of Breast Cancer"
Drs. Alexander Miron and Lyndsay Harris

Duke University School of Medicine (Durham, NC) **\$20,000**
"Acoustic Radiation Force Impulse (ARFI) imaging of Breast Cancer"
Dr. Kathryn Nightingale

Georgetown University, Lombardi Cancer Center (Washington, DC) **\$40,001/2 yrs.**
*"Imaging of Carcinogenesis and Cancer Prevention: A study of changes which occur in
early breast cancer and how they look on MRI scans"*
Dr. Matthew Freedman

The Chaim Sheba Medical Center (Tel Hashomer, Israel) **\$40,000**
*"Nanotechnology for Early Detection of Breast Cancer: Development of Tailored Magnetic
nanoparticles"*
Dr. Nave Epstein

Wayne State University (Detroit, MI) **\$39,051**
"Detection of Breast Cancer by Protein Arrays"
Drs. Kathryn Carolin and Michael Tainsky

<u>2002</u>	<u>Total Grants</u>	<u>\$276,747</u>
Georgetown University, Lombardi Cancer Center(Washington, DC)		\$37,544/2 yrs
<i>"Use of Invadopodia Antigens for Clinical Detection or Metastatic Cancer in Serum and Tissue Samples"</i>		
Drs. Ozge Alper and Susette Mueller		
Georgetown University, Lombardi Cancer Center(Washington, DC)		\$39,389
<i>"Mitochondrial DNA Mutations in Nipple Aspirate Fluid as Molecular Markers for Detection of Breast Cancer"</i>		
Dr. Lee-Jun C. Wong		
University of California at Los Angeles (Los Angeles, CA)		\$40,000
<i>"Nipple Aspiration in Diagnosis of Breast Cancer"</i>		
Mai Nguyen		
University of California at San Francisco (San Francisco, CA)		\$40,000
<i>"Protein Signatures of Nipple Aspirate Fluid for Individualized Risk Assessment"</i>		
Drs. Maria Pallovicini and Laura Esserman		
University of Manitoba (Manitoba, Canada)		\$40,000
<i>"CTM-OPT: Computed Tomographic mammography One Photon at a Time"</i>		
Dr. Richard Gordon		
University of Manitoba (Manitoba, Canada)		\$39,814
<i>"hSBEM in serum: a new marker for the early detection of breast cancer"</i>		
Drs. Yvonne Myal and Etienne Leygue		
Wake Forest University School of Medicine (Winston-Salem, NC)		\$40,000
<i>"Serum level of cytotoxic cytokines as indicators for the tumor burdens and stages of breast cancers: an immunological approach for an early detection of breast cancer"</i>		
Dr. Zheng Cui		

<u>2001</u>	<u>Total Grants</u>	<u>\$116,364</u>
Georgetown University, Lombardi Cancer Center (Washington, DC)		\$36,364
<i>"Profiling immune responses in patients with breast cancer: Identify anti-tumor antigens/antibodies found in the serum of patient with early breast cancer"</i>		
Dr. Peter D. Burbelo		
University of Alabama at Birmingham (Birmingham, AL)		\$40,000
<i>"Technetium-99m-labelled Human Anti-EGFR Single-chain Antibody for the Early Detection of Breast Cancer"</i>		
Dr. Kevin P. Raisch		
University of Iowa Cancer Center		\$40,000/2 yrs.
<i>"Diagnosis and Prognosis Value of Circulating Breast Carcinoma"</i>		
Dr. Emil Racila		
<u>2000</u>	<u>Total Grants</u>	<u>\$159,548</u>
AMC Cancer Research Center (Denver, CO)		\$32,000
<i>"A Novel Tumor Marker in Early Detection of Breast Cancer"</i>		
Dr. Margaret Hanausek		
Duke University Cancer Center (Durham, NC)		\$20,000
<i>"Prediction of Breast Cancer Risk from Parenchymal Patterns in mammograms"</i>		
Dr. Cary Floyd		
Georgetown University Lombardi Cancer Center (Washington, DC)		\$83,870
<i>"Electrical Impedance Imaging of the Breast: Explorations"</i>		
Dr. Matthew Freedman		
University of Pennsylvania Medical Center (Philadelphia, PA)		\$23,678
<i>"Tissue and Serum Markers of Breast Cancer Development"</i>		
Dr. M. Anne Blackwood		

1999 **Total Grants \$79,000**

Georgetown University Lombardi Cancer Center (Washington, DC) **\$19,000**
"A Non-invasive Approach to Early Detection Using State of the Art Genetic techniques"
Dr. Bassem Haddad

Mayo Clinic Foundation (Rochester, MN) **\$20,000**
"Circulating sErbB1 and sErbB2 Levels as Breast Cancer Biomarkers"
Dr. Andre T. Baron

Wake Forest University School of Medicine (Winston-Salem, NC) **\$40,000**
"Genetic Polymorphisms in Drug Metabolic Enzymes as Risk Factors for p53 Gene Mutations"
Dr. Mark Miller

1997- 1998 **Total Grants \$40,000**

Wake Forest University School of Medicine (Winston-Salem, NC) **\$40,000**
"Biologically-based Early Detection of Breast Cancer"
Dr. Steven Akman