



# Breast Cancer Research Semipostal Program

## PROGRAM HISTORY

As a result of the efforts of breast cancer advocates, the Stamp Out Breast Cancer Act (Public Law 105-41) led to the U.S. Postal Service's issuance of a new first-class stamp, the Breast Cancer Research Semipostal (BCRS) in 1998. It was the first semipostal in U.S. history. Net revenues from sales of the BCRS, which currently costs 65 cents, are provided to two designated funding agencies, the Department of Defense Breast Cancer Research Program (BCRP) and the National Institutes of Health (NIH), to support breast cancer research. By law, 30 percent is allocated to the BCRP, and 70 percent of the total amount raised is allocated to the NIH. The Breast Cancer Research Stamp Reauthorization Act of 2015 reauthorized the stamp through 2019. The BCRS received more than \$25.3 million through fiscal year 2018 (FY18).

## MILITARY HEALTH

Breast cancer is the most common non-skin cancer in women, causing the most cancer-related deaths in women under the age of 40<sup>1</sup>. Female active duty Service members have a 20-40% higher incidence rate of breast cancer than the general public<sup>2</sup>. The incident rate of breast cancer for active duty women is seven times higher than the average incident rate of fifteen other cancer types across all Service members<sup>3</sup>. The outcomes of BCRP-funded research will ultimately benefit military Service members, Veterans, military beneficiaries, and the general public.

## HIGH-IMPACT RESEARCH AND ACCOMPLISHMENTS SUPPORTED BY THE BCRS

- Demonstrated a relationship between breast cancer in a large prospective cohort of women and estimated outdoor concentrations of hazardous air pollutants, strongly suggesting that environmental exposure could contribute to an increased risk of breast cancer.
- Advanced understanding of the immune modulated microenvironment of post-partum breast involution that promotes pregnancy-associated breast cancer, revealing new therapeutic strategies to target immunosuppression and enhance the anti-tumor immune response.
- Second harmonic generation: a high-resolution optical microscopy technique for analyzing tumor structural changes and predicting metastasis of estrogen receptor-positive, lymph node-negative human breast cancer. Harmonigenic™ Corporation has retained the option for this patent.
- Identified predictive biomarkers for response of triple-negative breast tumors to chemo- and radio-therapy, providing the opportunity for new targeted therapeutics to resensitize breast tumors to chemotherapy and radiation treatments and ultimately reduce metastatic burden in patients.
- 158 publications
- 23 patents



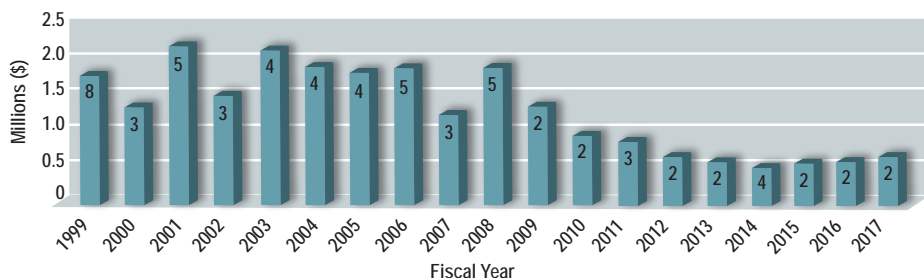
<sup>1</sup> [www.cdc.gov/cancer/dataviz](http://www.cdc.gov/cancer/dataviz)

<sup>2</sup> Zhu et al. 2009. Cancer Epidemiol Biomarkers Prev 18(6): 1740-1745.

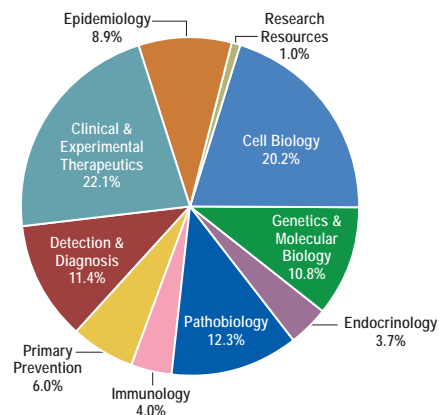
<sup>3</sup> Lee et al. 2016. MSMR 23(7): 23-31.

## PROGRAM PORTFOLIO

Breast cancer stamp funding received by the BCRP between FY99 and FY17 has been used to fully or partially fund 65 awards. These awards were funded under mechanisms that support innovative, high-risk, high-reward research that could lead to major advancements in breast cancer. Applications funded through the BCRS program were reviewed and recommended for funding according to the two-tier review system implemented by the BCRP. An evaluation of the awards funded through the BCRS program shows that the projects encompass a diversity of research areas.



**BCRS Funding and Number of Awards Supported by Fiscal Year**



**BCRS Award Portfolio Composition by Percent of Funding Invested**

## RECENT BCRS-FUNDED PROJECTS

FY	PI	Institution	Proposal Title
FY13	Seth Rubin	University of California, Santa Cruz	Inhibition of Retinoblastoma Protein Inhibition
	Geoffrey Luke	Dartmouth College	Noninvasive Label-Free Detection of Micrometastases in the Lymphatics with Ultrasound-Guided Photoacoustic Imaging
FY14	Dan Shu	Ohio State University	Ultrastable Nontoxic RNA Nanoparticles for Targeting Triple-Negative Breast Cancer Stem Cells
	Leif Ellisen	Massachusetts General Hospital	Defining High-Risk Precursor Signaling to Advance Breast Cancer Risk Assessment and Prevention
	Edward Brown	University of Rochester	Prediction of Metastasis Using Second Harmonic Generation
	David DeNardo	Washington University	Reprogramming the Metastatic Microenvironment to Combat Disease Recurrence
FY15	Ricardo Bonfil	Wayne State University	Discoidin Domain Receptors: Novel Targets in Breast Cancer Bone Metastasis
	Carl Maki	Rush University Medical Center	Targeting Prolyl Peptidases in Triple-Negative Breast Cancer
FY16	Sridhar Mani	Albert Einstein College of Medicine	Inhibition of Microbial Beta-Glucuronidase as a Strategy Toward Breast Cancer Chemoprevention
	Sophie Lelievre	Purdue University	Risk-on-a-Chip for Tailored Primary Prevention of Breast Cancers
FY17	Jogender Tushir-Singh	University of Virginia	A Highly Superior and Selective Cancer Immunotherapy-Based Approach for Triple-Negative Breast Cancers
	Pradeep Chaluvally-Raghavan	Medical College of Wisconsin	Targeting miR551b to Prevent Tumor Formation and Metastasis of Triple-Negative Breast Cancer