BREAST CANCER RESEARCH STAMP PROGRAM

CDMRP
DEPARTMENT OF WAR
CONGRESSIONALLY DIRECTED MEDICAL RESEARCH PROGRAMS

ABOUT THE PROGRAM

As a result of breast cancer advocacy efforts, the Stamp Out Breast Cancer Act, Public Law 105-41,[1] led to the U.S. Postal Service's issuance of a new first-class stamp, the Breast Cancer Research Stamp, or BCRS, in 1998. The BCRS became the first semipostal stamp in U.S. history.

The U.S. Postal Service provides the net revenues from sales of the BCRS, which currently costs 85 cents, to two designated funding agencies, the Department of Defense and National Institutes of Health, to support breast cancer research. By law, the U.S. Postal Service allocates 30% of the total amount raised to the Department of Defense and 70% to the National Institutes of Health. The Breast Cancer Research Stamp Reauthorization Act of 2019 reauthorized the stamp through 2027.

The CDMRP Breast Cancer Research Program received BCRS funding between FY99-FY24 and used the two-tier review process to review and recommend applications for BCRS program funding. See the BCRS facts for FY99 through FY24 on the right.

RELEVANCE TO MILITARY HEALTH

Breast cancer is the most common non-skin cancer in women and is the **deadliest cancer in females under 40.**[2,3] The incidence rate of breast cancer is **higher in female Service Members 40-59 years of age** than in the general population.[4] The incidence rate for active-duty females is **seven times higher** than the average rates of 15 other cancer types across all Service Members.[5] The outcomes of BCRS-funded research ultimately benefit active-duty Service Members and their Families, Veterans and the American public.

TOTAL CONGRESSIONAL APPROPRIATION SINCE INCEPTION

Total FY99-FY24 Breast Cancer Research Stamp proceeds received

$28,806,135

- Research, $27,523,397 or 96%
- CDMRP Management, $1,282,738 or 4%

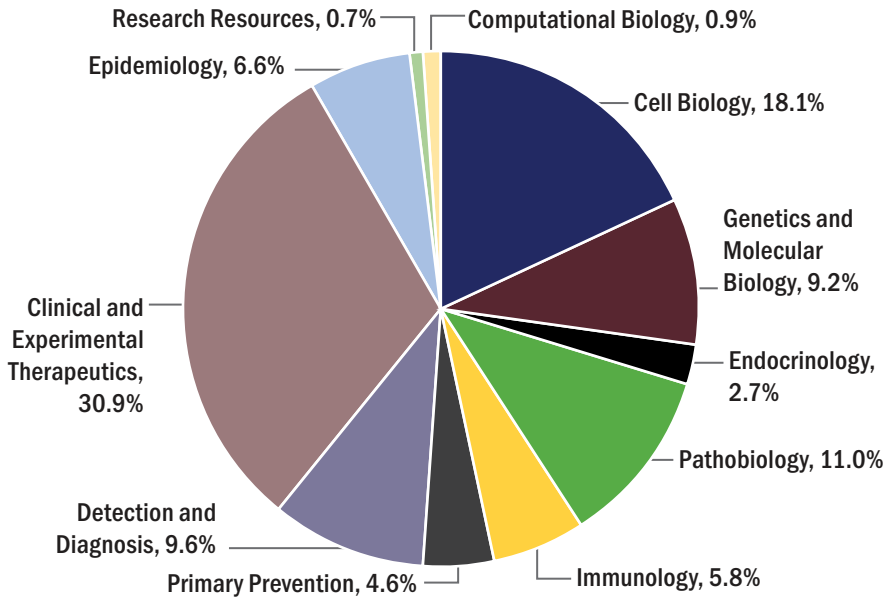
Breast Cancer Research Stamp proceeds used to fully or partially fund

79 Awards

through FY24

PROGRAM PORTFOLIO

Funded awards encompass a diversity of research areas, as shown in the portfolio pie chart below:



[1] https://www.congress.gov/105/plaws/publ41/PLAW-105publ41.pdf
[2] https://gis.cdc.gov/Cancer/USCS/#/AtAGlance/
[3] https://seer.cancer.gov/statfacts/html/aya.html
[4] https://pubmed.ncbi.nlm.nih.gov/37725334/
[5] https://www.health.mil/Reference-Center/Reports/2016/01/01/Medical-Surveillance-Monthly-Report-Volume-23-Number-7

PROGRAM IMPACT AND OUTCOMES

High-Impact Research and Accomplishments Supported by the Breast Cancer Research Stamp

187
Publications

30
Patents, Patent Applications and Invention Disclosures

Environmental Exposures: Demonstrated a relationship between breast cancer incidence and outdoor concentrations of hazardous air pollutants, strongly suggesting that environmental exposure contributes to an increased risk of breast cancer.[6]

Pregnancy-Associated Breast Cancer: Advanced understanding of the immune-modulated microenvironment of postpartum breast involution that promotes pregnancy-associated breast cancer, revealing new therapeutic strategies to target immunosuppression and enhance the anti-tumor immune response.[7]

Predicting Metastatic Disease: Development of a high-resolution imaging technique to analyze tumor structural changes and predict metastasis of breast cancer.[8]

Biomarkers to Predict Therapeutic Response: Identified predictive biomarkers for response of triple-negative breast tumors to current therapies, providing an opportunity for new targeted therapeutics.[9]

Recent Publications Resulting from Breast Cancer Research Stamp Funded Research

Holley, Susan O., Daniel Cardoza, Thomas P. Matthews, et al. 2025. "Artificial Intelligence and Consistency in Patient Care: A Large-Scale Longitudinal Study of Mammographic Density Assessment." *BJR Artificial Intelligence* 2 (1): ubaf004. https://doi.org/10.1093/bjrai/ubaf004.

Sprenger, Ashabari, Heather S. Carr, Arzu Ulu, Jeffrey A. Frost. 2023. "Src Stimulates Abl-Dependent Phosphorylation of the Guanine Exchange Factor Net1A to Promote Its Cytosolic Localization and Cell Motility." *Journal of Biological Chemistry* 299 (7): 104887. https://doi.org/10.1016/j.jbc.2023.104887.

Krishnakumar, Akshay, Sachin Kadian, Ulisses Heredia Rivera, et al. 2023. "Organ-on-a-Chip Platform With an Integrated Screen-Printed Electrode Array for Real-Time Monitoring Trans-Epithelial Barrier and Bubble Formation." *ACS Biomaterials Science & Engineering* 9 (3): 1620-1628. https://doi.org/10.1021/acsbiomaterials.2c00494.

Karaayvaz-Yildirim, Mihriban, Rebecca E. Silberman, Adam Langenbucher, et al. 2020. "Aneuploidy and a Deregulated DNA Damage Response Suggest Haploinsufficiency in Breast Tissues of BRCA2 Mutation Carriers." *Science Advances* 6 (5): eaay2611. https://doi.org/10.1126/sciadv.aay2611.

Shivange, Gururaj, Tanmoy Mondal, Evan Lyerly, et al. 2020. "Analyzing Tumor and Tissue Distribution of Target Antigen-Specific Therapeutic Antibody." *Journal of Visualized Experiments* May 16 (159). https://dx.doi.org/10.3791/60727.

Zareei, Amin, Hongjie Jiang, Shirisha Chittiboyina, et al. 2020. "A Lab-on-Chip Ultrasonic Platform for Real-Time and Nondestructive Assessment of Extracellular Matrix Stiffness." *Lab on a Chip* 20 (4): 778-788. https://doi.org/10.1039/c9lc00926d.

Chhetri, Apekshya, Shirisha Chittiboyina, Farzaneh Atrian, et al. 2019. "Cell Culture and Coculture for Oncological Research in Appropriate Microenvironments." *Current Protocols in Chemical Biology* 11 (2): e65. https://doi.org/10.1002/cpch.65.

Ervin, Samantha M., Hao Li, Lauren Lim, et al. 2019. "Gut Microbial Beta-Glucuronidases Reactivate Estrogens as Components of the Estrobolome That Reactivate Estrogens." *Journal of Biological Chemistry* 294 (49): 18586-18599. https://doi.org/10.1074/jbc.RA119.010950.

Parashar, Deepak, Anjali Geethadevi, Miriam R. Aure, et al. 2019. "miRNA551b-3p Activates an Oncostatin Signaling Module for the Progression of Triple-Negative Breast Cancer." *Cell Reports* 29 (13): 4389-4406. https://doi.org/10.1016/j.celrep.2019.11.085.

Yin, Hongran, Gaofeng Xiong, Sijin Guo, et al. 2019. "Delivery of Anti-miRNA for Triple Negative Breast Cancer Therapy Using RNA Nanoparticles Targeting to Stem Cell Marker CD133." *Molecular Therapy* 27 (7): 1252-1261. https://doi.org/10.1016/j.ymthe.2019.04.018.

[6] Public and Technical Abstracts: Hazardous Air Pollutants and Breast Cancer: An Unexplored Area of Risk

[7] Public and Technical Abstracts: The Immune Modulatory Program of Post-Partum Involution Promotes Pregnancy-Associated Breast Cancer

[8] Public and Technical Abstracts: Prediction of Metastasis Using Second Harmonic Generation

[9] Public and Technical Abstracts: Stabilization of 53BP1 in Triple-Negative and BRCA-Deficient Breast Tumors: A Novel Therapeutic Strategy

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