



Rays of Hope Center for Breast Cancer Research

Request for Proposals 2015

Environmental factors are responsible for more than 70% of breast cancer risk. These include lifestyle and reproductive factors (pregnancy, obesity, shift work, fatigue) as well as exposure to environmental chemicals. Mechanistic studies designed to understand the complex interactions that alter risk of breast cancer or regulate progression to invasive and metastatic disease are needed to develop approaches to limit the burden of breast cancer. Therefore, the Rays of Hope Center for Breast Cancer Research is inviting research proposals addressing the diverse needs facing patients.

Submissions addressing two broad categories of research are encouraged. Mechanistic studies are needed to identify how to intervene to prevent and treat breast cancer more effectively. Behavioral studies are equally important as they have the potential to improve the lives of breast cancer survivors as well as identify links to mechanisms driving susceptibility and carcinogenesis. Studies examining how environmental/lifestyle exposures alter cellular metabolism, inflammation, epigenetic changes that promote malignancy are of keen interest as the results can guide lifestyle choices and clinical decisions. Studies that utilize the patient-derived cells and tissues curated by the Biospecimen Resources and Molecular Analysis Core at the PVLSI are a priority as these may more accurately reflect the diversity of the disease in women. More fundamental studies will also be considered where they fill a gap in knowledge or address technical advances that presently limit research. Projects designed to improve care and outcomes for breast cancer patients may include modifications of diets or exercise to speed recovery for after treatment. Collaborative studies among investigators using a common set of resources (patients or tissues) to examine multiple endpoints would be an especially productive use of the grant funds that are available. Therefore, investigators with complementary interests are especially encouraged to submit shared projects or note the overlap among independent submissions. The forms and contact information are available at <http://pvlsi.org/featured-stories>.

Background: The Rays of Hope Center for Breast Cancer Research (RoHCBCR) was created in 2011 to support innovative research projects leading to tangible improvements in prevention, diagnosis or treatment of breast cancer. The Center together with the PVLSI has developed a core infrastructure designed to support multiple projects. Projects utilizing these resources will be given preference. A description of the Breast Research Patient Registry and tissue resources is provided below. The Patient Registry offers opportunities to study clinical practice and select patients for studies related to lifestyle and behaviors that can modify breast cancer risk and outcomes. The tissue resources provide a platform to identify novel biomarkers of risk using genome-wide analyses or functional assays. Primary cultures of normal breast tissues can be used to test efficacy and toxicity of treatments. Innovative devices providing point-of-care diagnostics can also be supported through the infrastructure at the Center.

Funding Description: Funding requests should be limited to projects feasible for <\$25,000/year for 1-2 years. Multi-year funding will be contingent on annual review of progress. Interested individuals should feel free to contact Joseph Jerry or Grace Makari-Judson to discuss potential applications. The resources available and list of prior awards is available at <http://pvlsi.org/rays-of-hope>.

January 15, 2016 --- Deadline for applications at 4 pm EST.

March 1, 2016 --- Anticipated notification of awards.

Project start date: May 1, 2016.

We expect to fund 4-8 projects depending on the size and duration of requests.

Format for applications:

- The formatting guidelines for NIH R03 and R21 proposals should be followed (0.5 inch margins, font size of 11 or larger) but limited to a total of 5 pages as described below. Guidelines can be found at http://grants.nih.gov/grants/writing_application.htm.
- Proposals should include the following sections.
 - Specific aims (1 page)
 - Research strategy (limited to 4 pages encompassing the following elements)
 - Background and significance
 - Impact and/or innovation --- Please address how the project is appropriate for funding by the RoHCBCR (local impact, development of resources or expertise). Also address outcomes such as development of intellectual property, grants from federal or industrial sponsors, publications.
 - Experimental overview --- Please describe how the research will be carried out and the expected outcomes. Preliminary data can be included in this section.
 - For human tissue studies, indicate the number of specimens anticipated. Consult Dr. Sallie Schneider (Director, Biospecimen Resources and Molecular Analysis) at the PVLSI for availability of specimens.
- NIH style Biosketch of investigator(s) --- see <http://grants.nih.gov/grants/funding/424/index.htm>.
- Estimated budget for each year (budget template file attached)
 - Personnel – list individually with % effort; list curriculum fees as “Other costs”
 - Fringe benefits – list for each individual
 - Equipment --- list individually
 - Supplies (include major categories in the justification)
 - Indirect costs and curriculum fees are not allowed.
- Compile materials and submit as a single pdf by email to Roxanne Labonte at the PVLSI. Her contact information is Roxanne.Labonte@baystatehealth.org; Telephone 413-794-0523. You can contact her to confirm receipt or for questions.

Review criteria:

- Do projects address critical gaps in the research related to breast cancer risk or treatment?
- Will the project represent a productive use of RoHCBCR patient or tissue resources?
- Do projects develop resources that will advance larger projects and collaborations?
- Will the impact be significant for women locally? Nationally?
- Are projects feasible?
- Will results establish novel tools/reagents or intellectual property?
- Is the project likely lead to extramural funding?

Resources available to applicants:

Breast Research Patient Registry

- At present, >500 patients with either benign breast disease or breast cancer have been enrolled. Accrual continues at ~150 patients/year. All patients have been consented allowing access to tissues, re-contact for additional studies and intake/interview data on lifestyle and health history. The questionnaire and summary data can be provided to assist the development of your project. If you need specific information, contact Roxanne Labonte (Roxanne.Labonte@baystatehealth.org).
- Fresh, frozen and fixed normal breast tissues have been collected for a subset of breast cancer patients undergoing mastectomy (~15-20/year). Women undergoing reduction mammoplasty (~15-20/year) can also be enrolled to provide tissues from cancer-free individuals.
- Histological sections of breast tissues (normal and cancer) are available through collaboration with pathologists at Baystate Medical Center.

- IRB protocols are facilitated by the RoHCBCR personnel.

Reduction Mammoplasty Tissue Repository (Drs. Sallie Schneider and Joseph Jerry)

- Breast tissues and relevant health information linked to breast tissues.
- Specimens include fresh frozen and paraffin-embedded tissues from the cohort. Primary cultures of breast epithelium and blood is available from ~50 patients.
- Specimens have been de-identified to ensure patient confidentiality and cannot be recontacted.

Biospecimen Resources and Molecular Analysis (BRaMA, Sallie Schneider, Director)

- Coordinate procurement of tissues and blood, primary cultures and storage of patient specimens at the PVLSI. Technical support for histological services and laser capture microdissection.
- The PVLSI has a library of primary cultures of breast epithelial cells and blood samples from ~100 women. We continue to collect ~50 additional specimens/year.
- An overview of services and costs are available at <http://pvlsi.org/brama>.

Cellular Metabolism Resource (Dr. Nagendra Yadava; <http://pvlsi.org/nagendra-yadava>)

- Facilities and expertise to support studies on cellular metabolism.
- SeaHorse XF24 Analyzer

Rays of Hope Center for Breast Cancer Research Review Board:

MEMBERS: SUSAN HANKINSON, SCD; GRACE MAKARI-JUDSON, M.D.; WILSON MERTENS, M.D.; JAMES MUELLER, M.D.; SALLIE SCHNEIDER, PhD; MARCIA WOODS; KATHERINE COLBECK, MHA, CCRP, CPHT; JOSEPH JERRY, PhD, JAY STEINGRUB, M.D.; RICHARD ARENAS, M.D.; TAMARA WRENN, MBA/HCM, CPHQ, CCRP, KATHLEEN ARCARO, PhD; JILL SCHROEDER AND LUCY DEBORAH BLOOM.

CO-DIRECTORS, RAYS OF HOPE CENTER FOR BREAST CANCER RESEARCH: GRACE MAKARI-JUDSON, M.D. AND D. JOSEPH JERRY, PH.D.