

2010 CALL FOR APPLICATIONS

CYCLE 16



CALIFORNIA BREAST CANCER RESEARCH PROGRAM



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Key Reminders!

- Applications and LOIs must be submitted online through Altum proposalCENTRAL (<https://proposalcentral.altum.com/>)
- Joining Forces Conference Awards have three submission deadlines: September 3, 2009; January 20, 2010; and April 15, 2010
- Translational Research Award. A letter of intent (two-page project description and PI biosketch) is due by October 21, 2009.
- Community Research Collaboration (CRC) “concept papers” will not be required as a prerequisite prior to submission of an application. We offer an optional pre-application review (for the research plan only) for those teams wishing to receive feedback prior to the actual application submission. Detailed information about this process will be made available in the early Fall.
- IDEA (innovative projects). These are open to both “junior” and established investigators.
- Postdoctoral Fellowship awards are limited to two years duration, and all applicants must have received a doctoral degree in 2008, 2009, or 2010 (expected). M.D. applicants must have finished residency training since 2008.
- Dissertation award applications must include a mentor with research expertise in breast cancer [i.e., current breast cancer-focused funding (2010) or publications since 2008 as either first or senior author with breast cancer in the title or as a major topic].
- Mentor Limit. Each mentor is limited to sponsoring a total of two career development applications (i.e., two postdoctoral fellowships, two dissertation awards, or one of each type).

Introduction

The California Breast Cancer Research Program (CBCRP) is pleased to present our 2010 Cycle 16 Call for Applications. We expect to have available at least \$8 million to award new grants beginning July 1, 2010. The CBCRP funds research only in California.

The mission of the CBCRP is to eliminate breast cancer by leading innovation in research, communication, and collaboration in the California scientific and lay communities.

In 1993, California breast cancer activists joined forces with scientists, clinicians, state legislators, and University of California officials to catapult the state into national leadership for breast cancer research. The activists, most of them women who had survived or currently had breast cancer, were impatient with the slow

pace of progress against the disease. With their allies, they wrote and won passage of statewide legislation to push breast cancer research in new, creative directions. The California Breast Cancer Act, sponsored by Assemblywoman Barbara Friedman, increased the tobacco tax by 2¢ per pack, with 45 percent of the proceeds going to the CBCRP. We also receive support from donations to a designated line on State income tax returns and private contributions. The CBCRP has provided more than \$190 million in research funds since 1995.

We hope the information below will encourage you to apply and to direct your research interests to match the priorities of the CBCRP. Our overall commitment is to fund research that will result in rapid advances in breast cancer prevention, detection, treatment, and cure.

Application Deadlines

Applications and LOIs, except the CRC pre-application research plan, must be submitted “on-line” through [Altum proposalCENTRAL](https://proposalcentral.altum.com/) (<https://proposalcentral.altum.com/>). Forms and instructions for all award types will be available by September 3 on both [proposalCENTRAL](https://proposalcentral.altum.com/) and [CBCRP’s website](http://www.cabreastcancer.org) (www.cabreastcancer.org).

Please note:

- ▶ The **CBCRP has only one funding cycle per year** with the submission deadlines listed in the Table below.
- ▶ The Translational Research Award and IDEA–competitive renewal applications *require* a “letter of intent” (LOI) that must be approved prior to submitting a full application.

Award Types	Application item	Due Date(s)
• Joining Forces Conference Award*	Full application*	September 3, 2009** January 20, 2010 April 15, 2010
• Translational Research Award	LOI (required)	October 21, 2009
• CRC research plan review (optional)	Pre-application research plan	October 28, 2009^
• IDEA–competitive renewal	LOI (required)	January 14, 2010
• Dissertation Award • Postdoctoral Fellowship • IDEA (established and “junior” investigators) • CRC (Pilot & Full)	Full application (LOI <u>not</u> required)	January 14, 2010
• Translational Research Award • IDEA–competitive renewal	Full application	February 11, 2010

*Contact Katherine McKenzie (510-987-9876 or katherine.mckenzie@ucop.edu) prior to submission.

**Applications must be submitted at least six months prior to your planned meeting.

^ Optional, only if the applicants wish to receive feedback prior to a full submission.

Where to Start—Overview

Before applying to the CBCRP for grant funding, you should consider our program’s background, funding philosophy, and existing portfolio. Our focus is specifically targeted to breast cancer, so researchers outside this field should cultivate collaborations or develop preliminary data in breast cancer *prior to applying*. Make sure our **Priority Issues** and **Award Types** presented in this booklet match your research interests, type of project (e.g., Is your IDEA award proposal high risk/high reward?), and career level.

We encourage applicants to contact the CBCRP Research Administrators at 888-313-2277 or apply@cabreastcancer.org to discuss any questions about the selection of priority issue and award type.

Inspect the CBCRP-funded portfolio on our website (<http://www.cabreastcancer.org/research/>) to get a feel for our funding interests. We are interested in funding novel topics not yet represented in the CBCRP’s or

other agencies’ portfolios. It is especially important for applicants who have received prior CBCRP funding to distinguish a newly submitted project from past projects. We also encourage you to inspect your topic area on the International Cancer Research Portfolio (ICRP) website: <http://www.cancerportfolio.org/>

Applicants should carefully consider our evaluation and funding process. The CBCRP has a two-tiered system that includes both a peer review for scientific merit and a programmatic evaluation to establish responsiveness to our priorities. Approximately 50 percent of submitted applications will be “triaged” and will not receive a full peer review discussion and scientific merit score. It is a **combination of scientific merit and programmatic responsiveness** that determines a decision to offer funding. Applicants will receive a detailed peer review evaluation summary with key points from the review committee discussion and information on the programmatic review/funding decision.

Previous Year’s (2008-2009) Results

Award type	Number of Applications	Grants funded (success rate)	Amount Awarded	Percentage of Total Funding
Dissertation	16	9 (56%)	\$680,245	7.8%
Postdoctoral Fellowship	40	9 (22.5%)	\$809,996	9.3%
IDEA	96	19 (20%)	\$3,901,192	44.9%
IDEA-competitive renewal	4	2 (50%)	\$608,000	7.0%
Translational	6	2 (33%)	\$1,958,190	22.6%
Community Research Collaboration (CRC)	4	2 (50%)	\$672,614	7.7%
Joining Forces Conference	2	2 (100%)	\$50,000	0.6%

Note: The final tally of grants funded for 2008-2009 will be published in CBCRP’s *Compendium of Awards* in September 2009 (<http://www.cabreastcancer.org/publications/>).

CBCRP's Research Priority Issues

To be *responsive and eligible for funding*, each applicant must explain how their proposed research addresses one or more of our priority issues. The descriptions below are intended to cover broad breast cancer research topics and the *examples* provided are not all inclusive.

1. The Community Impact of Breast Cancer: the social context

Overview: What are factors that contribute to the unequal burden of breast cancer among diverse communities? Are there policy alternatives that would contribute to reducing disparities in access to prevention, detection, treatment, support, and/or survivorship services for California's underserved populations? What is the influence of poverty, race/ethnicity, and environmental factors on breast cancer? What are the sociocultural, behavioral, and psychological issues of those affected by breast cancer and what services are needed to reduce the suffering caused by the disease? We encourage health policy; health services; and sociocultural, behavioral, and psychological research that address disparities and the burden of breast cancer among California's diverse communities. *Specific topics include:*

• Health Policy

We encourage research examining the impact of public and private health policy on issues related to prevention, detection, and treatment of breast cancer as well as research into the formulation of policy alternatives that would reduce disparities related to prevention, detection, and treatment of breast cancer.

• Health Services

We encourage research examining the delivery of breast cancer-related services and how to most effectively deliver services, especially to the underserved.

• Sociocultural, Behavioral and Psychological Issues Relevant to Breast Cancer: The Human Side

We encourage research into the sociocultural, behavioral, and psychological issues of those affected by breast cancer or at high risk for the disease. Research that examines patient and practitioner interactions, enhancing quality of life, long-term survival, and participation in clinical research is encouraged, especially research addressing the needs of high-risk and underserved populations.

• Disparities: Eliminating the Unequal Burden of Breast Cancer

We encourage research that aims to reduce disparities in breast cancer incidence, morbidity, and mortality; access to prevention, treatment, and/or survivorship services based on factors related to race/ethnicity, socioeconomic status, geographic location, sexual orientation, ability, age, occupation, and/or other factors. Intervention research that reduces disparities is encouraged.

2. Etiology and Prevention: finding the underlying causes

Overview: What environmental and biological factors interact to increase the risk of developing breast cancer? What approaches can be used to reduce or eliminate breast cancer risk? We especially encourage new California-based studies that seek an understanding of the environmental and lifestyle causes of breast cancer, and how these increase risk and impact different communities in California.

Specific topics include:

• Etiology: The Role of Environment and Lifestyle

We encourage studies on breast cancer initiation that may be due to environmental exposures that subject women to agents that they, as individuals, cannot control. Other key topics of interest include breast cancer causes related to lifestyle (e.g., diet, exercise) and the underlying metabolic, hormonal, and environmental interactions. Studies on causative gene-environment interactions specific to breast cancer, especially those having the potential to lead to prevention strategies, are encouraged.

• Prevention and Risk Reduction: Ending the Danger of Breast Cancer

Research exploring methods to prevent breast cancer or reduce risk, including elimination of external causative factors and the identification of surrogate markers for use in prevention trials are encouraged. Examples include nutritional factors, xenoestrogens, exercise, studies of genetic variation, and methods to modify known breast cancer genes and risk factors.

Note: Basic science research (e.g., using molecular, cell, and animal models) on the genetic, "mechanistic" causes of breast cancer (e.g., p53 and BRCA genes) should be submitted under the **Biology of the Breast Cell** topic.

3. Biology of the Breast Cell: the basic science of the disease

Overview: Although basic science research in cancer is well-supported by other agencies, there remains a critical need to understand the pre-neoplastic, causative events of breast cancer at the tissue level, including the stroma. The genetic changes in disease progression and the tumor heterogeneity need clarification at the basic science level. Breast cancer stem cell research is especially encouraged.

Specific topics include:

• Biology of the Normal Breast: The Starting Point

Research should explore aspects of normal breast biol-

ogy (e.g., aging) that are linked to the earliest stages of breast cancer, and which could provide insights into new approaches to prevent, detect, or treat the disease.

• **Pathogenesis: Understanding the Disease**

Research must specifically focus on breast cancer tumor and stromal biology, including: (1) studies of relevant proteins and genes with an emphasis on their relationship to the actual disease, and (2) elucidating key cell signaling, growth control, cell cycle, and apoptosis pathways. We especially encourage new research on the process of metastasis and the development of tools and models to better understand the key metastatic events that impact patient survival.

Note: We encourage basic science hypothesis-building projects. We welcome researchers from other cancer types and fields of biology to apply, but obtaining breast cancer data and establishing breast cancer relevance must be the primary aims of the project. The CBCRP is less interested in basic science research that involves (1) the incremental advance of an established basic science hypothesis, or (2) a lateral study from another cancer type. We discourage applications with an entirely “reductionist” rationale (i.e., the concept that the entire subject of breast cancer can be understood solely by analysis at the molecular level)

4. Detection, Prognosis and Treatment: delivering clinical solutions

Overview: Clinical advances for breast cancer will utilize novel imaging technologies, new biomarkers, and genomic/proteomic approaches for more accurate diagnosis and prognosis. We encourage projects whose aims are on the critical path for translation. We support research into less toxic and more individualized therapies, mechanisms of drug resistance, and studies to evaluate alternative medicines and natural products. *Specific topics include:*

• **Imaging, Biomarkers, and Molecular Pathology: Improving Detection and Diagnosis**

We encourage research into new, cost-effective technological and biological approaches for molecular imaging and new approaches for tumor analysis at the individual patient level. This includes advanced types of molecular classification, new biomarker development, and improved technologies for patient diagnosis and prognosis, especially using techniques to replace the current practice of screening mammography and biopsy.

• **Innovative Treatment Modalities: Search for a Cure**

Promising leads from biology-based studies are encouraged to begin the critical path to clinical translation. Examples include immunotherapy, delivery technologies, gene therapy, new drug development/testing, and new approaches to clinical decision-making. Testing investigational anti-breast cancer agents for mechanism of action and identifying target patient populations are encouraged.

CBCRP's Award Types

1. Community-based Collaborative Research and Conference Awards

► **Community Research Collaboration (CRC) Awards**

Project Duration & Budget Caps: There are **two levels of CRC support**.

- **Pilot Award:** To support developmental and pilot work necessary to lead to an application for a full award. The maximum duration is 18 months, and the direct costs budget cap is \$150,000. Indirect (F&A) costs are allowed for all institutions, except UC campuses.
- **Full Research Award:** To support scientifically rigorous research project performed in partnership. The maximum duration is 3 years, and the direct costs budget cap is \$600,000. Indirect (F&A) costs are allowed for all institutions, except UC campuses.

Purpose/Requirements: To support a research partnership between community organizations/members and experienced, traditional researchers. The breast cancer-related research issues should be: (1) important to specific communities in California, (2) use methods that are relevant, acceptable, culturally sensitive, and appropriate to the community, and (3) likely to produce results that are meaningful to the community.

Technical Assistance: Resources are available at the CBCRP to help CRC applicants with finding a partner, thinking through research ideas or partnership plans, and preparing applications for the CRC awards. We will offer one-on-one assistance, teleconference workshops and an *optional* pre-application research plan review for those teams wishing to receive feedback prior to the actual application submission. Visit www.CABreastCancer.org/community/techAssist.php or contact Katherine McKenzie at crcinfo@cabreastcancer.org to learn more about technical assistance opportunities.

► Joining Forces Conference Awards

Purpose/Requirements: To support a conference, symposium, retreat, or other structured meeting to link breast cancer researchers, non-breast cancer investigators, and community members for the purpose of *stimulating new ideas and collaborations*. **The budget cap is \$25,000**, and no indirect (F&A) costs are allowed. Funding decisions for these awards are made directly by the CBCRP's advisory council. Applications must be submitted at least six months prior to the planned meeting. It is highly recommended that you contact the Program before submitting an application to confirm its programmatic responsiveness. You may be asked to submit a Letter of Intent.

2. Translational Research Award

For more information on this award type: (<http://www.cbcrp.org/apply/aboutAwards.php>)

Project Duration & Budget Caps: 3 years and \$750,000 total direct costs. Indirect (F&A) costs are allowed for all institutions, except UC campuses.

Purpose/Requirements: The CBCRP is committed to supporting research that is on a **“critical path” for practical application**. Translational research to be supported by the CBCRP should have the potential for major impact in the areas of: (1) prevention, detection, diagnosis, or treatment of breast cancer; (2) improved quality of life for survivors; (3) reduction in the community and social burden caused by the disease in California, or (4) advances in medical practices, health systems changes, health policies, or environmental modifications. To distinguish “translational research” from other types of research funding, the CBCRP will require the applicant to present a “critical path” that maps how the project fits along a defined research continuum leading to practical applications. We welcome applicants from all disciplines, including: basic/clinical sciences, behavioral/social sciences, public health/community-based health sciences, and health policy.

To qualify for full application a “letter of intent” must be submitted by October 21, 2009. The translational projects presented in the LOI must:

- delineate translational potential and impact specific to breast cancer in the designated topic
- focus on the study of human subjects. *Support for projects using cell or animal models is not allowed.*
- show evidence of PI qualifications for translational research and propose a project not fully supported by the PI's other funding

LOI decisions and invitations to submit a full grant application will be communicated to PIs by the end of November 2009.

3. Innovative Research

To inspire creative new approaches in breast cancer research, the CBCRP will continue to offer the IDEA funding mechanism. Both established researchers and “junior investigators” (see below) are welcome to apply.

► IDEAs (Innovative, Developmental, and Exploratory Awards)

- **18 months** maximum duration
- **Budget cap for total project direct costs is either \$100,000 or \$150,000** (higher cap is for projects using animal or human subjects). Indirect (F&A) costs are allowed for all institutions, except UC campuses.

Purpose/Requirements: To support speculative, exploratory, high-risk/high-reward projects with a *primary focus on breast cancer*. Applications for this award type should challenge existing paradigms, represent a new direction for the PI, and encourage innovation by the incorporation of techniques and approaches not yet well represented in mainstream breast cancer research. We encourage researchers to attempt breakthroughs that, if successful, could be leveraged into more substantial funding.

Examples of research **not responsive** to the IDEA are projects that: (1) propose incremental advances for the underlying topic, (2) duplicate the aims of completed or funded research to the PI derived from non-breast cancer studies without incorporating detailed breast cancer-specific justification, (3) overlap in topic and aims with current grant support to the applicant, or (4) represent portions of existing grants or are derived from cut-down larger, R01-type projects. *To be maximally responsive to the IDEA funding mechanism, the applicant must either be previously trained and have published in breast cancer or collaborate with an established breast cancer researcher.* IDEA applicants will be required to explain how the research project is on a “critical path” to substantially advance the topic under investigation.

IDEAs for “junior investigators”: Researchers at a career level beyond postdoctoral training and less than three years as independent investigator, or entering research from another field, are encouraged to apply for IDEA grants. During the peer review process the applicant's prior research history and accomplishments will be rated less stringently than for IDEAs from established investigators.

Note: Only individuals who submitted IDEA applications that were not funded in 2009 (Cycle 15) are eligible to submit revised applications. Previously-funded PIs are eligible to apply for new IDEA projects with project aims distinct from their prior CBCRP grants.

► IDEA–competitive renewals

Project duration & Budget Caps: Up to 2 years and \$250,000. Indirect (F&A) costs are allowed for all institutions, except UC campuses.

Purpose/Requirements: To allow for additional support for especially promising projects supported by recent CBCRP IDEA funding. To compete for a renewal, the PI must achieve expected milestones in the initial IDEA and satisfy proof-of-principle for the central topic under investigation. The competitive renewal IDEA submission will consist of a shorter application containing a progress report with revised aims. These will go through the same two-step process of peer and advisory council review to qualify for funding.

Note: Recipients of CBCRP IDEA grants having received initial funding disbursements after January 1, 2008, and not having previously applied for an IDEA–competitive renewal are eligible to apply for a competitive renewal in 2010.

4. Career Development Awards

Note: Each mentor is limited to sponsoring a *total* of two applications (i.e., two postdoctoral fellowships, two dissertation awards, or one of each type).

► Dissertation Awards

Project Duration & Budget Caps: 2 years with a cap of \$38,000 per year for stipend/fringe benefits, tuition/fee remission, supplies, and travel. No indirect (F&A) costs are allowed.

Purpose/Requirements: To support the completion of dissertation research for Masters or Doctoral-level graduate students. The applicant (PI) is the student, who must prepare the application and should have advanced to the appropriate degree candidacy level by the award start date (July 1, 2010). The mentor must be an independent, full-time faculty (or equivalent) at the institution. **The mentor must be a breast researcher** [i.e., current breast cancer-focused funding (2010) or publications since 2008 as either first or senior author with breast cancer in the title or as a major topic].

► Postdoctoral Fellowship Awards

Project Duration & Budget Caps: 2 years with an average of \$45,000 per year. No indirect (F&A) costs are allowed.

Purpose/Requirements: To support individuals with doctoral degrees to obtain postdoctoral training under a designated mentor. **The mentor must be experienced and have published in breast cancer or collaborate**

with a breast cancer researcher. The mentor must include a training plan focused on breast cancer. The research project can be supported in part by the mentor's existing funding, but should incorporate innovative aims tailored to the skills and career development of the applicant. We encourage physicians continuing their research activity, or those individuals in transition to breast cancer research from another field. **All applicants must have received their doctoral degree in 2008 or more recently.** In the case of Ph.D./M.D. or "combination" doctoral degrees, the most recent degree must be received in 2008 or later. M.D. applicants must have finished residency training since 2008. The applicant must be employed as a postdoctoral fellow to qualify for the award.

General Information

Note the following eligibility requirements and conditions for receiving grant support from the CBCRP.

Who May Apply

1. Any individual or organization in California may submit an application. The research must be conducted primarily in California. We welcome investigators from community organizations, public or privately-owned corporations and other businesses, volunteer health organizations, health maintenance organizations, hospitals, laboratories, research institutions, colleges, and universities.

2. We encourage researchers new to breast cancer to apply. We recommend that applicants who have limited experience in scientific research or in scientific grant-writing collaborate with established breast cancer researchers in order to maximize specificity and impact on breast cancer.

3. Re-submissions and previously funded PIs: *Resubmissions.* Individuals who submitted “not funded” applications in 2009 (Cycle 15), except for IDEA-competitive renewals, are eligible to submit revised applications in 2010 (Cycle 16). The CRC awards are open to re-submission from any previous grant cycle.

Previously-funded PIs are eligible to apply for new projects with distinct aims from the previous CBCRP grants.

4. IDEA–competitive renewal eligibility: Recipients of CBCRP IDEA grants *having received initial funding disbursements* after January 1, 2008 *and* having not previously applied for an IDEA–competitive renewal are eligible to apply for a competitive renewal in 2010.

5. Multiple applications and grant limits: *A PI may submit more than one application, but each must have unique specific aims. For Cycle 16 a PI is limited to a maximum of two (2) grants either as PI or co-PI, and these must be in different award types.* Each mentor is limited to two (2) fellowship/dissertation applications.

Conditions of Awards

1. All grant recipients must satisfy the standard requirements for receiving an award or modified requirements, if appropriate, as determined by the University of California. These requirements include fiscal management, accounting practices, liability insurance, bonding, indemnification of the UC Regents, non-discrimination in employment, and assurances regarding the treatment of animal or human subjects. Applicants do not have to meet these requirements at the time an application is reviewed, but no grant will be awarded until they are satisfied. Also, before an award is disbursed, a prospective grant recipient must satisfy certain stipulations (see application information packet). The CBCRP staff will provide information to assist prospective recipients in satisfying these stipulations.

2. Grant recipients are required to attend the 2010 CBCRP Research Symposium and must include travel costs for this in the grant budget. In addition, grant recipients may be asked to present their work at other CBCRP-related functions.

3. Intellectual Property: CBCRP does not retain rights to a funded grant’s intellectual property. Patentable inventions or discoveries conceived or reduced to practice shall belong to the grant recipient. Copyright works are the property of the recipient. Other discoveries made or reduced to practice which may not be protected by patent or copyright, such as biological materials, plasmids, and cell lines, remain the property of the recipient to be licensed in the public interest. The recipient shall use reasonable efforts to achieve expeditious practical application of the patents, copyrights, and tangible research results.

Support the CBCRP!

We need your support because our principal source of revenue from the State tax on tobacco decreases every year. Here’s how to help:

- **Donate Online.** Go to our website: www.CABreastCancer.org/ and select the “Donate Online” link
- **California State Income Tax Return.** Use the appropriate line on Form 540 to contribute to the California Breast Cancer Research Fund
- **Other donations.** Send checks payable to “The Regents of the University of California” with a letter

designating the funds for the California Breast Cancer Research Program to:

**California Breast Cancer Research Program
University of California, Office of the President
300 Lakeside Drive, 6th Floor
Oakland, CA 94612-3550**

We encourage you to participate in events that designate the California Breast Cancer Research Program (CBCRP) as a featured beneficiary.

*The CBCRP appreciates your
generous contributions!*