

Request for Proposals (RFP)
Improving Breast Cancer Risk Assessment to Identify High-Risk Individuals

California Breast Cancer Research Program
California Breast Cancer Prevention Initiatives

Deadline to apply
April 8, 2016

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About the California Breast Cancer Research Program and the California Breast Cancer Prevention Initiatives

The **California Breast Cancer Research Program (CBCRP)** was established pursuant to passage by the California Legislature of the 1993 Breast Cancer Act (i.e., *AB 2055 (B. Friedman) [Chapter 661, Statutes of 1993]* and *AB 478 (B. Friedman) [AB 478, Statutes of 1993]*). The program is responsible for administering funding for breast cancer research in the State of 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.

- The CBCRP is the largest state-funded breast cancer research effort in the nation and is administered by the University of California, Office of the President.
- The CBCRP is funded through the tobacco tax, voluntary tax check-off on personal income tax forms, and individual contributions.
- The tax check-off, included on the personal income tax form since 1993, has drawn over \$8.5 million for breast cancer research.
- Ninety-five percent of our revenue goes directly to funding research and education efforts
- The CBCRP supports innovative breast cancer research and new approaches that other agencies may be reluctant to support.
- Since 1994, CBCRP has awarded over \$262 million in 1,006 projects to over 100 academic institutions and community organizations across the state. With continued investment, the CBCRP will work to find better ways to prevent, treat and cure breast cancer.

CBCPI Priority Areas

In 2004, the CBCRP launched its Special Research Initiatives (SRI). The CBCRP's Breast Cancer Research Council devoted 30 percent of CBCRP research funds to support coordinated, directed, and collaborative research strategies that increase knowledge about and create solutions to both the environmental causes of breast cancer and the unequal burden of the disease.

In March 2010, CBCRP's Council decided to build on the existing SRI by devoting 50 percent of CBCRP research funds between 2011 and 2015. This new effort is titled the California Breast Cancer Prevention Initiatives (CBCPI). Approximately \$24 million is being dedicated to directed, coordinated, and collaborative research to pursue the most compelling and promising approaches to:

1. Identify and eliminate environmental causes of breast cancer.
2. Identify and eliminate disparities/inequities in the burden of breast cancer in California.
3. Population level interventions (including policy research) on known or suspected breast cancer risk factors and protective measures.
4. Targeted interventions for high-risk individuals, including new methods for identifying or assessing risk.

To focus these research efforts, the CBCRP issued a Request for Qualifications (RFQ) to fund a team to collaborate with the CBCRP to develop and implement the CBCPI planning process. In 2010, the grant was awarded to Tracey Woodruff, PhD, MPH, Professor and Director of the University of California, San Francisco, Program on Reproductive Health and the Environment (PRHE).

In March 2015, CBCRP's Council approved fifteen (15) concept proposals to stimulate compelling and innovative research in all four topical areas of the CBCPI (environmental causes, health disparities, population-level interventions and targeted interventions for high risk individuals). A series of funding opportunities will be released over the next two years reflecting these concepts.

Improving Breast Cancer Risk Assessment to Identify High-Risk Individuals

Available Funding

This initiative aims to advance the science of breast cancer risk modeling/assessment through funded projects that include a wider range of known and suspected risk factors, and take into consideration cumulative effects and timing of environmental exposure(s).

CBCRP intends to fund two types of projects: those limited to modeling/computational projects, and those that propose original data collection with or without modeling/computational:

- Modeling and computational projects that do not involve new data collection, each with a maximum direct cost budget of \$100,000 and a maximum duration of 2 years
- Projects involving new data collection and laboratory costs, each with a maximum direct cost budget of \$1,000,000 and a maximum duration of 4 years

It is anticipated that up to \$2,400,000 in direct costs is available for this initiative. Indirect (F&A) costs are paid at the appropriate federally approved F&A rate for all institutions except for University of California campuses, which receive 25% F&A.

Completed responses to this RFP are due by the deadline: noon, April 8, 2016. Signed face pages of submitted applications must be emailed to RGPOgrants@ucop.edu by 5pm on Friday, April 8, 2016. The project start date is August 1, 2016.

For more information and technical assistance, please contact:

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Background/Justification

Current risk assessment tools have limited value for predicting individual risk or for targeting preventive interventions. There is a need to improve risk assessment methods to identify individuals and populations at high risk for breast cancer due to environmental risk factors.

This initiative aims to advance the science of risk assessment through inclusion of a wider range of known and suspected risk factors, and answering key questions about the cumulative effects and timing of environmental exposure(s). Successful projects will better identify high-, average- and low-risk women and men; improve methods for including environmental risk factors that account for developmental exposure, cumulative exposure and human genetic variability in environmental response; and identify risks across the life course, including social risk factors, and/or separate pre- and post-menopausal differences.

Risk assessment tools may be used in clinical settings to identify individuals at high risk for breast cancer

in order to recommend screening and prevention. They may also be used to identify the risk factors that offer the best opportunities for preventive intervention.

Currently, clinical risk assessment tools, such as the Gail model, rely on a narrow set of established breast cancer risk factors, and as a result, these methods have limited value for predicting individual risk or for targeting preventive interventions. Improved risk assessment would incorporate a wider range of known and suspected risk factors and take into account cumulative effects and timing of exposure. For suspected risk factors, a range of plausible risk estimates can be evaluated as a basis for advice about intervention. For example, occupational chemical exposures are one of many areas where additional work may identify important predictors of individual high risk.

In addition, many known and suspected breast cancer risk factors have relatively modest effects at the individual level but potentially substantial effects at the population level if exposure is widespread, so risk assessment for larger exposed groups can reveal important opportunities for clinical and public health recommendations to reduce risk. Postmenopausal hormone replacement therapy (HRT) might be considered an example of this scenario. The breast cancer risks to an individual woman taking HRT were considered modest, so HRT was widely prescribed based on assumptions about the benefits for cardiovascular health. When additional evidence showed no cardiovascular benefit with increased breast cancer risk, the modified risk assessment led to revised clinical recommendations that are estimated to have prevented 126,000 breast cancers over eight years.¹ Improved risk assessment for other risk factors may similarly identify significant prevention priorities.

Improved methods are needed to take into account a broader understanding of breast cancer etiology, including these issues:

- Risks associated with radiation and environmental chemicals, including evidence from animal and mechanistic studies as well as limited human research.
- Cumulative exposure to multiple factors in the physical and social environment, including risk and protective factors.
- Differences in effect for exposures during different times in the life cycle.
- Differences in effect due to human genetic variability in environmental response.
- Differences in risk for premenopausal and postmenopausal diagnosis and breast cancer subtypes.

Several reviews identify important areas for incorporating additional exposures into breast cancer risk assessment. The State of California has concluded that environmental tobacco smoke increases breast cancer risk, especially with exposure at a young age.² A recent review of chemicals shown to cause mammary tumors in animal studies found that 62 biomarkers of exposure have been measured in humans, 45 of them in a non-occupationally exposed population.³ Most of these chemicals are genotoxic.⁴ In addition, several environmental chemicals have been shown to alter the normal development of the mammary gland in animal studies. These chemicals include atrazine, bisphenol A (BPA), dibutylphthalate (DBP), dioxin, methoxychlor, nonylphenol, polybrominated diphenyl ethers (PBDE) and perfluorooctanoic acid (PFOA) (Reviewed in Rudel *et al.* 2011).⁵ Some of these alterations have been associated with development of tumors during the animal's adult life.⁶

Although most chemicals with biological activity relevant to breast cancer have never been included in a human breast cancer study, a few epidemiological studies provide risk estimates for selected chemical exposures. For example, elevated risk has been observed for women exposed to DDT in girlhood,⁷ PCBs in genetically susceptible women,⁸ PAHs at younger age and in

genetically susceptible women, and organic solvents in women workers exposed before a first pregnancy.⁹

To date, little has been done to incorporate the impact of these chemicals (known and suspected mammary gland carcinogens, mammary gland toxicants, endocrine disruptors, and/or chemicals with similar properties or similar mechanisms of action) into risk assessments for breast cancer. And the cumulative risk of all these exposures together has yet to be assessed. Chemical risk assessment is traditionally conducted on a chemical-by-chemical basis and seeks to identify a chemical exposure that would be considered safe for human health or the environment. The concept of “safe” varies with the agency regulating the chemical (e.g. US Environmental Protection Agency, US Food and Drug Administration). However, in reality, humans are exposed to many chemicals throughout the life cycle.

In addition to chemical exposures, there are other non-chemical stressors and protective factors that could also influence breast health. For instance, early puberty is associated with increased breast cancer risk and pregnancy at young age has been associated with decreased risk. These risk factors may in turn be influenced by chemical exposures and socioeconomic factors, and they may modify the effects of later exposures. For example, the breast remains more vulnerable to carcinogens prior to the first pregnancy, so timing of pregnancy may be an important risk factor primarily in the presence of early life carcinogen exposure, and its effect might be mitigated by reducing chemical carcinogens. Recent research also indicates that interactions between genes and environmental factors play a role in breast health.¹⁰⁻¹²

Cumulative risk assessment

Recognizing the need to incorporate scientific and technical advances into the risk assessment process, in 2009 the National Research Council (NRC) of the National Academy of Sciences released a report recommending practical improvements to the risk assessment process.¹³ One of the proposed changes included modifications to cumulative risk assessment to incorporate interactions between chemical and nonchemical stressors, which would be added to the combined risks posed by aggregate exposure (i.e. all routes, pathways and sources) to multiple chemicals.

One of the challenges of assessing cumulative risk posed by more than one chemical is to select a method to group the chemicals. For instance, the Food Quality Protection Act of 1996 mandated the EPA to assess the cumulative risks to human health posed by pesticides exposure and other chemicals that are toxic by a common mechanism. One method EPA¹⁴ uses to group chemicals within a class focuses on the mechanism of action by which they cause toxicity. An example is inhibition of acetylcholinesterase, a mechanism of toxicity shared by organophosphate pesticides. The study of molecular mechanisms by which chemicals exert toxicity is an active research field and consensus has yet to be reached among scientists. Another NRC committee¹⁵ reviewing the health effects of phthalates and whether a cumulative risk assessment for this class of chemicals should be done recommended an approach focused on health outcomes rather than the pathways that may lead to them. They reasoned that there was limited knowledge about chemicals’ molecular mechanisms of action; however, their health effects were evident. More recently, the European Food Safety Authority (EFSA)¹⁶ released its methodology to identify pesticides with similar toxic effects. The EFSA grouping approach emphasizes common adverse outcomes such as decreased circulating levels of thyroid hormone, even if these occur by diverse mechanisms.

A second challenge to performing cumulative risk assessment is the limited, publicly available, chemical exposure information. However, biomonitoring data has the potential to fill in some of the information gaps. Biological samples may help characterize simultaneous exposures to multiple chemicals; in addition data on non-chemical stressors may be available from the sampled populations. Both the National Health and Examination Survey (NHANES) and California biomonitoring programs provide valuable and complementary exposure information.

Another challenge is to consider genetic variability, which is an inherent characteristic of a population. Variability can be better characterized. For instance, Lock et. al.¹⁷ has developed a novel *in vitro* system to test chemical toxicity based on inter-individual genetic variability. It used 81 lymphoblast cell lines obtained from 27 trios (father, mother, and child with known genetic polymorphisms) to test 240 chemicals. The study concluded that the effects of toxicity pathways (e.g. apoptosis and cytotoxicity) were different among the individuals and that variability could be extended to a population level, since each cell line could be matched with a susceptibility profile.

Another research need is to model or perform cumulative risk assessment for chemicals known to affect the mammary gland in animal studies and for which there is known human exposure based on biomonitoring data, and to incorporate the contribution from non-chemical stressors to breast cancer risk. This information would be important to identifying potential targets for prevention strategies.

It is important to note that, from a public health perspective, high risk to a population can occur if there is widespread exposure to a risk factor, even if the relative risk for an individual is low or moderate. This means that prevalence of exposure is an important component to consider in risk analysis to guide targeted interventions.

The CBCRP “paradigm project” illustrates a conceptual and computational framework for considering breast cancer as a complex disease.^{18,19} Improvements in risk assessment methods can help to address data and conceptual gaps in this model. While important progress is being made with these efforts, there remains a great need to strengthen risk assessment methods, especially those methods that can take into account a broader understanding of breast cancer etiology.

Project Guidelines and Example Research Topics

Projects may take a variety of approaches to improving breast cancer risk assessment, including modeling and analysis of existing data or targeted studies *in vitro* or *in vivo* to provide new data to fill specific knowledge gaps.

Proposed budgets should be appropriate to the nature of the proposed work. With this Request for Proposals, investigators are encouraged to propose methods to take into account a broader understanding of breast cancer etiology, including but not limited to these issues:

- Risks associated with radiation and environmental chemicals, including evidence from animal and mechanistic studies as well as limited human research.
- Cumulative exposure to multiple factors in the physical and social environment, including risk factors and protective factors.

- Differences in effect for exposures during different times in the life cycle.
- Differences in effect due to human variability in environmental response.
- Differences in risk for premenopausal and postmenopausal diagnosis and breast cancer subtypes.

The main goal of this RFP is to develop and apply novel risk assessment tools that address the limitations in breast cancer risk assessment and better represent the etiology of breast cancer as a complex, multifactorial disease.

Project guidelines

1. Projects must include strategies for effectively disseminating and communicating research findings and translating them into guidance for regulatory, medical, public health and individual decision-making.
2. Projects are encouraged to integrate expertise in risk modeling/assessment and basic and population science, and to include advocates, community stakeholders, and regulators.

Example research topics

Examples of modeling and computational projects that do not involve new data collection

1. Model or assess cumulative breast cancer risk for a group of chemicals known to affect mammary gland development or induce tumors in animal models (known and suspected mammary gland carcinogens, mammary gland toxicants, endocrine disruptors, and/or chemicals with similar properties or similar mechanisms of action.). Chemical selection should be relevant to human California exposures as shown in California biomonitoring, NHANES, or another exposure prediction method. The assessment could seek to consider a) chemicals that alter susceptibility to breast cancer or breast carcinogens; b) population variation in susceptibility/response; or c) qualitative and quantitative differences in exposure response relationships depending on life stage. Examples of this type of project include the NRC assessment of cumulative exposure to phthalates¹⁴ and the work by Crofton to develop a model of thyroid effects that shows how diverse biological perturbations are linked to a single outcome.²⁰
2. Use risk estimates from epidemiology or animal studies of chemicals and breast cancer together with data on population exposures to estimate individual and population risks from chemicals of concern, and compare these risks with risks from established breast cancer risk factors, such as age at first birth, alcohol use, and body size parameters. Consider a range of estimates of the increased risk associated with the chemical exposures. The comparison of the influence of lead exposure and preterm birth on IQ provides an example of this type of analysis.²¹

Examples of experimental or human studies that involve collecting new data

1. Conduct experiments to better understand and quantify how exposure-effect relationships are modified by developmental status, genetic variability, or co-exposures.²² For example, how does *in utero* hormone or endocrine disruptor exposure alter mammary gland susceptibility to later-life carcinogens.

3. Assess chemical exposures in high-risk women in order to provide inputs to population-level risk assessments and identify targets for intervention. High risk women include, for example, those with high-risk genetic variants, high mammographic density, DES exposure, postmenopausal weight gain, or reproductive risks, such as nulliparity or never lactating. Novel exposure measurement strategies (e.g. metabolomics, other omics, and epigenetics) are encouraged. Opportunities to compare biomarkers in high-, average- and low-risk women are of interest.

Budget

Applicants should consider the following elements when constructing their budgets:

- **Expertise:** Proposals must involve researchers with appropriate proficiency for the research questions (e.g. epidemiologist, breast cancer biologist, statistician, toxicologist)
- **Capacity:** Applicants should demonstrate possession of or access to appropriate tools and technologies (e.g. laboratory facilities and equipment, animal facilities, etc.)

Details on allowable costs can be found in section *Budget Summary* section on page 18 of this RFP.

References

- ¹ Roth *et al.* Economic return from the Women's Health Initiative estrogen plus progestin clinical trial: a modeling study. 2014. *Annals of Internal Medicine* 160:594---602
- ² Miller *et al.* The association between exposure to environmental tobacco smoke and breast cancer: a review by the California Environmental Protection Agency. 2007. *Preventive Medicine* 44:93---106
- ³ Rudel *et al.* New exposure biomarkers as tools for breast cancer epidemiology, biomonitoring, and prevention: A systematic approach based on animal evidence. 2014. *Environmental Health Perspectives*. Advanced publication: May 12. <http://dx.doi.org/10.1289/ehp.1307455>
- ⁴ Rudel *et al.* Chemicals causing mammary gland tumors in animals signal new directions for epidemiology, chemicals testing, and risk assessment for breast cancer prevention. 2007. *Cancer* 109(12 Suppl):2635---2666
- ⁵ Rudel *et al.* Environmental Exposures and Mammary Gland Development: State of the Science, Public Health Implications, and Research Recommendations. 2011. *Environmental Health Perspectives* 119:1053---1061
- ⁶ Murray *et al.* Induction of mammary gland ductal hyperplasias and carcinoma in situ following fetal bisphenol A exposure. 2007. *Reproductive Toxicology* 23:383---390
- ⁷ Cohn *et al.* DDT and breast cancer in young women: new data on the significance of age at exposure. 2007. *Environmental Health Perspective* 115:1406---1414
- ⁸ Brody *et al.* Environmental pollutants and breast cancer: epidemiologic studies. 2007. *Cancer* 109:2667---2711
- ⁹ Ekenga *et al.* Breast cancer risk after occupational solvent exposure: the influence of timing and setting. 2014. *Cancer Research* 74:3076---3083
- ¹⁰ Committee on Breast Cancer and the Environment: The Scientific Evidence, Research Methodology, and Future Directions; Institute of Medicine. Breast Cancer and the Environment: A life course approach. 2011. The National Academies Press. Washington, DC
- ¹¹ Nickels *et al.* Evidence of Gene-Environment Interactions between Common Breast Cancer Susceptibility Loci and Established Environmental Risk Factors. 2013. *PLoS Genetics* 9(3) e1003284. doi:10.1371/journal.pgen.1003284
- ¹² Wadia *et al.* Low-Dose BPA Exposure Alters the Mesenchymal and Epithelial Transcriptomes of the Mouse Fetal Mammary Gland. 2013. *PLoS ONE* 8(5): e63902. doi:10.1371/journal.pone.0063902
- ¹³ Committee on Improving Risk Analysis Approaches used by the U.S. EPA. National Research Council of the National Academy of Sciences. Science and Decisions. Advancing Risk Assessment. 2009. The National Academies Press. Washington, DC.
- ¹⁴ U.S. Environmental Protection Agency. Guidance for identifying pesticide chemicals and other

Substances that have a common mechanism of toxicity. 1999.

See http://www2.epa.gov/sites/production/files/2015-07/documents/guide-2-identify-pest-chem_0.pdf

¹⁵ Committee on the Health Risks of Phthalates, National Research Council. Phthalates and cumulative risk assessment. The task ahead. 2008. The National Academies Press. Washington, DC.

¹⁶ EFSA Panel on Plant Protection Products and their Residues (PPR). Scientific Opinion on the identification of pesticides to be included in cumulative assessment groups on the basis of their toxicological profile. 2013. EFSA Journal 11(7):3293. See <http://www.efsa.europa.eu/en/efsajournal/pub/3293.htm>

¹⁷ Lock *et al.* Quantitative High-Throughput Screening for Chemical Toxicity in a Population-Based In Vitro Model. 2012. *Toxicological Sciences* 126:578-588

¹⁸ California Breast Cancer Research Program. University of California. A model of breast cancer causation. 2014. See <http://www.cabreastcancer.org/causes>

¹⁹ Hiatt RA *et al.* A multi-level model of postmenopausal breast cancer incidence. 2014. *Cancer Epidemiology, Biomarkers and Prevention*. Published Online First July 13. doi: 10.1158/1055-9965.EPI-14-0403

²⁰ Crofton K. Adverse outcome pathways and their unifying role in developmental toxicology. 2013. PPDC 21st Century Workshop. See <http://www.epa.gov/pesticides/ppdc/testing/2013/july/workshop/session1.pdf>

²¹ Bellinger DC. A Strategy for Comparing the Contributions of Environmental Chemicals and Other Risk Factors to Neurodevelopment of Children. 2011. *Environmental Health Perspective* 120:501-507

²² Churchill *et al.* The diversity outbred mouse population. 2012. *Mammalian Genome* 23(9-10):713-718

How We Evaluate RFPs

CBCRP uses a two-tier evaluation process: peer review and programmatic review. It is a combination of, (i) the peer review rating, (ii) the programmatic rating, and (iii) available funding that determines a decision to recommend funding.

Peer Review

All applications are evaluated by a peer-review committee of individuals from outside of California. The committee is comprised of scientists from relevant disciplines and breast cancer advocates and other community representatives.

- **Innovation:** Extent to which the project explores new and potentially useful methods for improving assessment of risk of breast cancer. Are the concepts and hypotheses speculative and exploratory? Are methods novel and original? Has(ve) the investigator(s) thought creatively about possible mechanisms, pathways and/or addressing multiple factors relevant to breast cancer?
- **Impact:** Potential for the project, if successful, to advance the science of breast cancer risk modeling/assessment that will include a wider range of known and suspected risk factors, and incorporate cumulative effects and timing of exposure. Does the research address relevant mechanisms, methods and/or models for improving risk assessment? Will the models yielded by the research be useful in predicting individual and/or population risk or targeting preventive interventions?
- **Approach:** The quality, organization, and presentation of the research plan, including methods and analysis plan. Will the research planned answer the research questions? Are the design, methods and analyses well-developed, integrated and appropriate to the aims and stated milestones of the project? Does the application demonstrate an understanding of the research question and aims?
- **Feasibility:** The extent to which the aims are realistic for the scope and duration of the project; adequacy of investigator's expertise and experience, and institutional resources; and availability of additional expertise and integration of multiple disciplines. Does the investigator (and do co-investigators) have demonstrated expertise and experience working in the topic area? Can the project be completed as proposed given the available funding, time frame and the staff knowledge, skills, experience, and institutional resources?

Programmatic Review

This review is conducted by the Breast Cancer Research Council and involves reviewing and scoring applications with sufficient scores from the peer review process based on the criteria listed below. The individuals on the Council performing this review include advocates, clinicians, and scientists from a variety of disciplines. In performing the Programmatic Review the advisory Council evaluates only a portion of the application materials (exact forms are underlined). Pay careful attention to the instructions for each form. The Programmatic criteria include:

- **Responsiveness.** How responsive are the project and PI to the stated intent of the selected Initiative? Compare the PI's statements on the Other Review Criteria template and the content of the Lay and Scientific abstracts to the CBCPI topic area. (A score of "0" for Responsiveness is an automatic disqualification.)
- **Dissemination and translation potential.** The degree to which the applicant's statement on the Other Review Criteria template provides a convincing argument that the proposed research has the potential to: be more broadly distributed; applicable to other communities and the general California populations.
- **Quality of the lay abstract.** Does the Lay Abstract clearly explain in non-technical terms the research background, questions, hypotheses, and goals of the project? Is the relevance to the research initiative understandable?
- **Addressing the Needs of the Underserved.** Do the project and the PI's statements on the Other Review Criteria template demonstrate how this research will address the needs of the underserved (including those that are underserved due to factors related to race, ethnicity, socioeconomic status, geographic location, sexual orientation, physical or cognitive limitations, age, occupation and/or other factors)?
- **Advocacy Involvement.** Are the named advocate(s) and advocacy organization appropriate for the proposed research project? Were they engaged in the application development process? Are meetings and other communications sufficient for substantive engagement? Are the roles and responsibilities of the PI and the advocate(s) clearly outlined and is the agreement for advocate compensation and reimbursement clear? [The Advisory Council will examine the PI's statements on the Lay and Scientific Abstracts and Advocacy Involvement forms.]

Application Process and Instructions

Submission Deadline: Applications must be submitted through proposalCENTRAL (<https://proposalcentral.altum.com/>) by **Friday, April 8, 2016 at 12 noon Pacific Standard Time.**

Signed face pages of submitted applications must be emailed to RGPOgrants@ucop.edu by 5pm on **Friday, April 8, 2016.**

The application materials will be available on proposalCENTRAL by **December 1, 2015.**

proposalCENTRAL Online Submission Instructions

Formatting Instructions

All submissions must be in **English.**

Follow these format requirements for written text (consistent with NIH/PHS 398 form):

- The height of the letters must not be smaller than 11 point. Times New Roman or Arial are the suggested fonts.
- Type density must be no more than 15 characters per inch (cpi).
- Page margins, in all directions, must be at least 1/2 inch.
- PI(s) last names and first initials must be in a header, on each page, flush right.

Deviations from the page format, font size, specifications and page limitations are grounds for the CBCRP to reject and return the submission without peer review.

Online Application (Proposal) Management

The CBCRP requires applications be submitted via an online system: proposalCentral. Following are instructions on how to register and how to submit your response to the RFP. The submission deadline is **12 noon Pacific Time on Friday, April 8, 2016.** *Note:* the proposalCENTRAL site shows East Coast times. Do NOT wait until the deadline to submit your application; if you miss the deadline, the system will not allow you to submit.

If you have any problems using proposalCENTRAL, please contact the proposalCENTRAL help line at (800) 875-2562.

Online Registration

The PI as well as the institution's signing official, contracts & grants manager and fiscal contact must be registered in proposalCENTRAL: <https://proposalcentral.altum.com/>. Start with "Click here to register". Fill out all the necessary fields on the registration page: First Name, Last Name, Email Address, User ID (can be your name), Password (case-sensitive), Challenge Question, and Answer.

Click BOTH BOXES on the bottom of the page to confirm your agreement with their “Terms of Service” and “Acceptable Use Policy.” Click on the “Register” button. ProposalCENTRAL will send you an email with your username, password and a confirmation number. Once confirmed, you can login and the first time you enter the system, it will ask you to enter the confirmation number. You won’t need that number again.

Online Forms and Fields

Once logged on, select the “Grant Opportunities” (gray) tab on the top of the page. Open up the filter and scroll down to California Breast Cancer Research Program. Sort the available funding by CBCRP and all of the funding opportunities for CBCRP will be showing. Choose the Risk Assessment Initiative and click on “Apply Now” at the far right of the line.

Portions of the application are prepared using pre-formatted web pages in proposalCENTRAL (Proposal Sections 1 and 3-8). To move from section to section you can click the “Next” button to both save your work and go to the next section, or click “Save” and then click on the next section.

Proposal Section 2 allows you to download the Templates and Instructions for the CBCRP forms. After completing the forms on your computer, Proposal Section 9 allows you upload each one as PDF to attach it to your application.

Title Page

On the “Title Page” enter the Project Title in the space provided (do not exceed 60 characters). Enter the total budget amount requested for the project, including indirect costs, if eligible. The projected start date for this project is June 1, 2016. Enter the end date of the project (up to 3 years).

Download Templates & Instructions

This section includes these instructions as well as the relevant application forms. You will need these forms in order to respond to this RFP.

Enable Other Users to Access this Proposal

Note: A person must be registered in proposalCentral before s/he can be given access.

Read the instructions on this page thoroughly to understand the different levels of access. At the bottom of that page, in “Proposal Access User Selection,” type in the email address of other individuals who will be working on the RFP, then click “Find User.” Select the desired level of access and Click “Accept Changes” to save.

Applicant/PI

Click on “Applicant/PI” and make sure that all required fields (identified with a red asterisk) are complete. (Click “Edit Professional Profile” to enter any missing data.)

Click “Return to Proposal” after entering missing data. Enter the % effort that the PI will devote to this project. The minimum effort is 10% FTE. Click “Save.”

A required field entitled “ORCID ID” has been added to Professional Profile Page, at the bottom of Section 4: Personal Data for Applications. ORCID provides a persistent digital identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities

ensuring that your work is recognized. If you have not already obtained an ORCID ID number, you may do so here: <http://orcid.org/>. Once you have done so, please enter your 16-digit identifier in the space provided on your profile page in the following format: xxxx-xxxx-xxxx-xxxx.

Institution & Contacts

On the “Institution & Contacts” page, make sure that all required fields (identified with a red asterisk) are complete, including the Signing Official, Contracts and Grants Official, and Fiscal (Accounting) Contact for the applicant institution. To complete these fields select the name or enter the email address of the individual in each of those roles and click “Add.”

If you add someone, the “Contact Screen - Applicant Institution” screen will open. Make sure that all required fields (identified with a red asterisk) are completed. Click “Save”, then click “Close Window”. Then click “Save” on the Institution & Contacts page.

Abstracts

Copy each the Lay Abstract and the Scientific Abstract from the CBCRP templates into the appropriate boxes on the proposalCENTRAL page. **Note:** symbols or other special text will not copy.

On this page you should also select and add CSO codes. At <https://www.icrpartnership.org/CSO.cfm> you will find the seven major CSO categories, each with 4-9 sub-categories. Choose a major heading for your research and read the subcategory description. Choose the one that most closely fits. If your project fits under more than one CSO category, add a second code. The second code should represent a different, but integral, part of the research and about half of the total effort.

Budget

Provide the total costs for the entire funding request for each grant year on this page. Make sure the budget numbers are exactly the same as those in the provided Excel Budget Summary form that you upload.

Organization Assurances

Provide any required information for Human Subjects. If assurances will be required and have not yet been received, mark “pending” and enter the (proposed) date of submission in the “Approved or Pending Date”.

Upload RESEARCH PLAN and Other Attachments

This page contains a duplicate list of the forms and instructions that are in Download Templates and Instructions (above and Proposal Section 2). This is where you will upload the CBCRP forms and any other attachments to your proposal; the required items are listed.

To upload attachments, fill in the fields at the top of the page:

- **Describe Attachment:** Provide a meaningful description, such as Jones CV.
- **Select Attachment Type:** From the drop down menu, select the type of form that is being attached.
- **Allowable File Type:** Only Adobe PDF document may be uploaded. Do not Password Protect your documents. Help on converting files to PDF can be found on the proposalCentral site at <https://proposalcentral.altum.com/FAQ/FrequentlyAskedQuestions.asp>.
- **Select File From Your Computer to attach:** The Browse button allows you to search for the PDF on your computer; click Open to select the file.

Note: Explicit instructions on the content of the documents to be uploaded follow in the “Instructions for CBCRP Forms” section.

ORCID ID number

This section is a reminder to returning investigators to obtain and enter an ORCID ID number by editing your professional profile using the link that appears here. At the bottom of Section 4 in your profile (Personal Data for Applications), you will find the space to enter your 16 digit ORCID ID number and a link to obtain one if necessary. Please enter the information in the following format: xxxx-xxxx-xxxx-xxxx.

Validate

This function allows you to check whether all required items have been completed and attached. Don't wait until the last minute to check! Validate often during the course of completing your application so you have time to address missing items. Clicking the “Validate” button will either result in a link to missing items so you can easily go to the page and complete them, or a message at the top of the page “Has been validated and is ready to submit.”

Print Face Page When Application Complete

Applicants must print application's Face Page and obtain the necessary PI and institutional signing official signatures within a week of the electronic submission (see below).

Submit

Submission is only possible when all required items have been completed and all required forms have been attached. Once an applicant hits “Submit,” the application cannot be recalled.

Email Face Page Submission

The PI, institution's signing official, Contract and Grants official and Fiscal (or Accounting) official all must sign the printed Face Page. Scan the signed form as a PDF and email to RGPOGrants@ucop.edu before 5 pm (Pacific Time) by Friday, April 8, 2016.

CBCRP Uploaded Form Instructions

Lay Abstract (REQUIRED)

This item is evaluated mainly in the programmatic review. The Lay Abstract is limited to one page and must include the following sections:

- A non-technical introduction to the research topics
- The question(s) or central hypotheses of the research in lay terms
- The general methodology in lay terms
- Innovative elements of the project in lay terms

The abstract should be written using a style and language comprehensible to the general public. Avoid the use of acronyms and technical terms. The scientific level should be comparable to either a local newspaper or magazine article. Avoid the use of technical terms and jargon not a part of general usage. Place much less emphasis on the technical aspects of the background, approach, and methodology. Ask your advocate partner to read this abstract and provide feedback.

Scientific Abstract (REQUIRED)

This item is evaluated mainly in the peer review. The Scientific Abstract is limited to one page and should include:

- A short introductory paragraph indicating the background and overall topic(s) addressed by the research project
- The central hypothesis or questions to be addressed in the project.
- A listing of the objectives or specific aims in the research plan
- The major research methods and approaches used to address the specific aims
- A brief statement of the impact that the project will have on breast cancer.

Provide the critical information that will integrate the research topic, its relevance to breast cancer, the specific aims, the methodology, and the direction of the research in a manner that will allow a scientist to extract the maximum level of information. Make the abstract understandable without a need to reference the detailed research plan.

Other Review Criteria (REQUIRED)

This item is evaluated in the programmatic review. Limit the text to two pages. The CBCRP Council (who conducts the programmatic review) will NOT see your Research Plan. The information on this template allows the CBCRP Research Council to rate the application for adherence to the objectives of the CBCPI research area as outlined in the specific RFP and by the CBCRP Council/SRI Steering Committee (see www.cabreastcancer.org/funding-opportunities/sri).

CBCPI Focus: Provide a clear, brief summary for the CBCRP Council (1 or 2 paragraphs) of how your proposed research addresses the specific RFP topic area, by increasing or building on specific scientific knowledge; by pointing to additional solutions to identify and eliminate environmental causes, and or disparities in, breast cancer; and/or, by helping identify or translate into potential prevention strategies.

Dissemination and Translation Potential: Describe how research findings will be shared with various stakeholder audiences (i.e., policymakers, community members, breast cancer advocates, other researchers/agencies, health care providers, funders etc.). Describe the potential for how the research findings will be translated into interventions, policy and/or other practice.

Addressing the Needs of the Underserved: Describe how this research will address the needs of the underserved (including those that are underserved due to factors related to race, ethnicity, socioeconomic status, geographic location, sexual orientation, physical or cognitive limitations, age, occupation and/or other factors)?

Advocacy Involvement (REQUIRED)

This item is evaluated in the programmatic review. Follow the instructions on the form, and address the requested three items (Advocacy Organization/Advocate(s) Selection and Engagement to Date, Advocate(s) Role in Proposed Research and Meeting and Payment Plans). Limit the text to one page.

Letter(s) of Commitment (REQUIRED)

This item is evaluated in the programmatic review. Please use the template as a basis for commitment letters from the advocate, scientific and/or subcontracting individuals/institutions. Limit the text to two pages.

Budget Summary (REQUIRED)

Please enter the budget for the presented categories by year into the summary sheet (Excel format). Additional instructions are presented on the form.

The maximum duration and direct costs may not exceed the following for the RFP *Improving Breast Cancer Risk Assessment*:

Projects involving new data collection:	4 Years & \$1,000,000
Project not involving new data collection:	2 Years & \$100,000

Note: The amount of the subcontracted partner's F&A costs can be added to the direct costs cap. Thus, the direct costs portion of the grant to the recipient institution may exceed the award cap by the amount of the F&A costs to the subcontracted partner's institution.

Personnel. List the PI for the application and "individuals who contribute in a substantive way to the scientific development or execution of the project, whether or not salaries are requested." (NIH definition). Include those at the level of postdoctoral fellow and higher. Upload a NIH "Biographical Sketch and Other Support" form for each individual listed. The minimum "Months Devoted to Project" required for each CBCPI PI is 1.2 months (= 10% FTE).

Other Project Expenses. Enter the costs associated with each category presented on the template (description to be provided in Budget Justification).

Advocate(s) Expenses. Include any travel, meeting, and consultation costs/fees associated with advocate engagement.

Equipment. Purchases up to \$10,000 are allowed. Only include individual items >\$5,000. Any items less than \$5,000 must be purchased under the "supplies" budget category above.

Travel Expenses. Requested travel costs must be broken down and justified as Project-related, Annual meeting (third year only) or Scientific meeting (PI only capped at \$2,000 per year).

Subcontracts. In the case of University of California applicants, subcontracts need to be categorized and broken out as one of two types, University of California-to-University of California (UC to UC) sub agreements or transfers; or, Other. Both categories require additional description (Budget Justification) and documentation (Appendix).

Service Agreements and Consultants. Both categories require additional description (Budget Justification) and documentation (Appendix).

Indirect (F&A) costs. Non-UC institutions are entitled to full F&A of the Modified Total Direct Cost base (MTDC); UC institutional F&A is capped at 25% MTDC*

**Allowable expenditures in the MTDC base calculation include salaries, fringe benefits, materials and supplies, services, travel, and up to the first \$25,000 of each subgrant or subcontract (regardless of the period covered by the subgrant or subcontract). Equipment, capital expenditures, charges for patient care and tuition remission, rental costs, scholarships, and fellowships as well as the portion of each subgrant and subcontract in excess of \$25,000 shall be excluded from the modified total direct cost base calculation.*

Please see the RFP under **Allowable Indirect (F&A) Costs** for more information.

Budget Justification & Facilities (REQUIRED)

This item is evaluated in the peer review. Limit the text to two pages. Follow the instructions on the template. The minimum “Months Devoted to Project” required for each CBCPI PI is 1.2 months (= 10% FTE).

Key Personnel (REQUIRED)

This item is evaluated in the peer review. Limit the text to one page. Follow the instructions on the template.

Biographical Sketch & Other Support (REQUIRED)

This item is evaluated in the peer review. Use the NIH form. Limit the length of each biosketch to *no more than* four (4) pages.

Research Plan (REQUIRED)

This section is the **most important** for the peer review. Note carefully the page limits, format requirements, and suggested format.

Page limit: 12 pages

An additional 3 pages is allowed for References.

Format issues: Begin this section of the application using the template. Subsequent pages of the Research Plan and References should include the principal investigator’s name (last, first, middle initial) placed in the upper right corner of each continuation page.

The Research Plan and all continuation pages must conform to the following four format requirements:

1. The height of the letters must not be smaller than 11 point; Times New Roman or Arial are the suggested fonts.
2. Type density, including characters and spaces, must be no more than 15 characters per inch (cpi).
3. No more than 6 lines of type within a vertical inch;
4. Page margins, in all directions, must be at least ½ inch.

Use the appendix to supplement information in the Research Plan, not as a way to circumvent the page limit.

Suggested content:

Introduction and Hypotheses: Provide a brief introduction to the topic of the research and the hypotheses/questions to be addressed by the specific aims and research plan. The relationship of the project to the expectations outlined within the RFP should be clear.

Specific Aims: List the specific aims, which are the steps or increments deemed necessary to address the central hypothesis of the research. The subsequent research plan will detail and provide the approach to achieving each of these aims.

Background and Significance: Make a case for your project in the context of the current body of relevant knowledge and the potential contribution of the research.

Preliminary Results: Describe the recent work relevant to the proposed project. Emphasize work by the PI and data specific to breast cancer and policy analysis.

Research Design and Methods: Provide an overview of the experimental design, the methods to be used, and how data is to be collected and analyzed. Describe the exact tasks related to the Specific Aims above. Provide a description of the work to be conducted during the award period, exactly how it will be done, and by whom. Include a letter of commitment if the applicant PI will be using a data set that they do not control/own. Recognition of potential pitfalls and possible alternative approaches is recommended. How will technical problems be overcome or mitigated? Cover all the specific aims of the project in sufficient detail. Identify the portions of the project to be performed by any collaborators. Match the amount of work to be performed with the budget/duration requested. A timeline at the end will demonstrate how the aims are interrelated, prioritized, and feasible. Explain the use of human subjects and vertebrate animals and show their relationship to the specific aims.

Resources and Facilities: Describe the resources and facilities to be used (e.g., laboratory space, core facilities, major equipment, access to populations, statistical resources, animal care, and clinical resources) and indicate their capacities, relative proximity and extent of availability. Include an explanation of any consortium/ contractual arrangements with other organizations regarding use of these resources or facilities. Describe resources supplied by subcontractors and those that are external to the institution. Make sure all of the research needs described in the research plan are addressed in this section.

Human Subjects (OPTIONAL)

This item is evaluated in the peer review. **This form is required only for applications that use Human Subjects, including those in the "Exempt" category. Use additional pages, if necessary. For applications requesting "Exemption" from regular IRB review and approval provide sufficient information in response to item #1 below to confirm there has been a determination that the designated exemptions are appropriate. The final approval of exemption from DHHS regulations must be made by an approved Institutional Review Board (IRB).**

Documentation must be provided before an award is made. Research designated exempt is discussed in the NIH PHS Grant Application #398 http://grants2.nih.gov/grants/peer/tree_glossary.pdf. Most research projects funded by the CBCRP falls into Exemption category #4. Although a grant application is exempt from these regulations, it must, nevertheless, *indicate the parameters of the subject population* as requested on the form.

For applications needing full IRB approval: If you have answered “YES” on the Organization Assurances section of the CBCPI Application Face Page and designated no exemptions from the regulations, the following **seven points** must be addressed. In addition, when research involving human subjects will take place at collaborating site(s) or other performance site(s), provide this information before discussing the seven points. Although no specific page limitation applies to this section, be succinct.

1. Provide a detailed description of the proposed involvement of human subjects in the project.
2. Describe the characteristics of the subject population, including its anticipated number, age range, and health status. It is the policy of the State of California, the University of California, and the CBCRP that research involving human subjects must include members of underserved groups in study populations. Applicants must describe how minorities will be included and define the criteria for inclusion or exclusion of any sub-population. If this requirement is not satisfied, the rationale must be clearly explained and justified. Also explain the rationale for the involvement of special classes of subjects, if any, such as fetuses, pregnant women, children, prisoners, other institutionalized individuals, or others who are likely to be vulnerable. Applications without such documentation are ineligible for funding and will not be evaluated.
3. Identify the sources of research material obtained from individually identifiable living human subjects in the form of specimens, records, or data. Indicate whether the material or data will be obtained specifically for research purposes or whether use will be made of existing specimens, records or data.
4. Describe the plans for recruiting subjects and the consent procedures to be followed, including: the circumstances under which consent will be sought and obtained, who will seek it; the nature of the information to be provided to the prospective subjects; and the method of documenting consent.
5. Describe any potential risks —physical, psychological, social, legal, or other. Where appropriate, describe alternative treatments and procedures that might be advantageous to the subjects.
6. Describe the procedures for protecting against, or minimizing, any potential risks (including risks to confidentiality), and assess their likely effectiveness. Where appropriate, discuss provisions for ensuring necessary medical or professional intervention in the event of adverse effects on the subjects. Also, where appropriate, describe the provision for monitoring the data collected to ensure the safety of subjects.
7. Discuss why the risks are reasonable in relation to the anticipated benefits to subjects, and in relation to the importance of knowledge that may be reasonably expected to result.

Documentation of Assurances for Human Subjects

In the appendix, if available at the time of submission, include official documentation of the approval by the IRB, showing the title of this application, the principal investigator's name, and the approval date. Do not include supporting protocols. Approvals obtained under a different title, investigator or organization are *not* acceptable, unless they cross-reference the proposed project. Even if there is no applicant institution (i.e., an individual PI is the responsible applicant) and there is no institutional performance site, an USPHS-approved IRB must provide the assurance. If review is pending, final assurance should be

forwarded to the CBCRP as soon as possible, but **no later than August 1, 2016**. Funds will not be released until all assurances are received by the CBCRP. If the research organization(s) where the work with human subjects will take place is different than the applicant organization, then approvals from the boards of each will be required.

Data and Safety Monitoring Boards (DSMB)

Applications that include Phase I-III clinical trials may be required to provide a data and safety monitoring board (DSMB) as described in the NIH policy release, <http://grants.nih.gov/grants/guide/notice-files/not98-084.html>. This ensures patient safety, confidentiality, and guidelines for continuing or canceling a clinical trial based on data collected in the course of the studies. The CBCRP may require documentation that a DSMB is in place or planned prior to the onset of the trial.

Vertebrate Animals (OPTIONAL)

This item is evaluated in the peer review. **This form is required only for applications that use Vertebrate Animals. Limit the text to two pages.**

If you have answered “**YES**” to the Vertebrate Animals item on the Organizations Assurances section of the CBCPI Application Face Page, then following **five points** must be addressed. When research involving vertebrate animals will take place at collaborating site(s) or other performance site(s), provide this information before discussing the five points.

1. Provide a detailed description of the proposed use of the animals in the work outlined in the Research Plan. Identify the species, strains, ages, sex, and numbers of animals to be used in the proposed work.
2. Justify the use of animals, the choice of species, and the numbers used. If animals are in short supply, costly, or to be used in large numbers, provide an additional rationale for their selection and numbers.
3. Provide information on the veterinary care of the animals involved.
4. Describe the procedures for ensuring that discomfort, distress, pain, and injury will be limited to that which is unavoidable in the conduct of scientifically sound research. Describe the use of analgesic, anesthetic and tranquilizing drugs, and/or comfortable restraining devices, where appropriate, to minimize discomfort, distress, pain, and injury.
5. Describe any methods of euthanasia to be used and the reasons for its selection. State whether this method is consistent with the recommendations of the Panel on Euthanasia of the American Veterinary Medical Association. If it is not, present a justification for not following the recommendations.

Documentation of Assurances for Vertebrate Animals

Grants will not be awarded for research involving vertebrate animals unless the program for animal care and welfare meets the standards of the AAALAC or the institution has a U.S. Public Health Service assurance. In the appendix, if available at the time of submission, include official documentation of institutional review committee approval showing the title of this application, the principal investigator's name, and the inclusive approval dates. Do not include supporting protocols. Approvals obtained under a different title, investigator or institutions are not acceptable unless they cross-reference the proposed

project. If review is pending, final assurances should be forwarded to the CBCRP as soon as possible, but **no later than August 1, 2016**. Funds will not be released until all assurances are received by the CBCRP.

Appendix List (OPTIONAL)

Follow the instructions and items list on the template. **The appendix may not be more than 30 pages in length.**

Note that the *research plan must be self-contained* and understandable without having to refer to the appendix. Only those materials necessary to facilitate the evaluation of the research plan or renewal report may be included.

General Funding Policies

Eligibility and Award Limits

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. Applicants who have limited experience in breast cancer research should collaborate with established breast cancer researchers.
3. PIs who have previously been funded by CBCRP are welcome to apply, but the research aims must be distinct from their previous CBCRP grants.
4. Multiple applications and grant limits for PIs. A PI may submit more than one application, but each must have unique specific aims. For Cycle 22 applicants are limited to a maximum of two (2) grants either as PI or co-PI, and these must be in different award types. The Research Initiative grants are not included in this limit. A PI may have more than one Research Initiative grant in a year.

Policy on Applications from PIs with Delinquent CBCRP Grant Reports

PIs with current CBCRP grant support will not be eligible to apply for additional funding unless the required scientific and fiscal reports on their existing grants are up-to-date. This means that Progress/Final Scientific Reports or Fiscal Reports that are more than one month overdue may subject a Cycle 22 application to possible disqualification unless the issue is either, (i) addressed by the PI and Institution within one month of notification, or (ii) the PI and Institution have received written permission from the CBCRP to allow an extension of any report deadlines.

Application Revision Guidelines

A revised application must have the same principal investigator as the original application. When possible it should have the same title as the original application. However, if the specific aims of the project have changed sufficiently, then a modified title may be chosen. A revision submission for all eligible award types (except CRCs) must include a section of not more than 2 pages uploaded as a part of the Research Plan. This section is a summary of the substantial additions, deletions, and changes that have been made. It must also include responses to criticisms in the previous Review Committee evaluation. This material does not count towards the normal page limit for the Research Plan. We also recommend emphasizing in the Research Plan any relevant work done since the previous application. CRC applicants should follow the directions in the CRC application materials regarding resubmissions.

Confidentiality

The CBCRP maintains confidentiality for all submitted applications with respect to the identity of applicants and applicant organizations, all contents of every application, and the outcome of reviews. For those applications that are funded the CBCRP makes public, (i) the title, principal investigator(s), the name of the organization, and award amount in a "Compendium of Awards" for each funding cycle, (ii) the costs (both direct and indirect) in the CBCRP's annual report, (iii) the project abstract and progress

report abstracts on the CBCRP Web site. If the Program receives a request for additional information on a funded grant, the principal investigator and institution will be notified prior to the Program's response to the request. Any sensitive or proprietary intellectual property in a grant will be edited and approved by the PI(s) and institution prior to release of the requested information.

No information will be released without prior approval from the PI for any application that is not funded.

Human Subjects and Vertebrate Animal Use

If a project proposes activities that pose unacceptable potential for human and animal subject risks, then a recommendation either not to fund or to delay funding until the issue is resolved may result.

IRB approval, human subject "exemption" approval, or animal assurance documentation must be provided prior to funding, but is not needed for application review. Applicants are encouraged to apply to the appropriate board or committee as soon as possible in order to expedite the start of the project, and you must do so before or within 21 days of notification that an award has been offered. If all reasonable efforts are not made to obtain appropriate approvals in a timely fashion, funds may be reallocated to other potential grantees' proposed research projects.

Award Decisions

Applicants will be notified of their funding status by June 30, 2016. The written application critique from the review committee, the merit score average, component scores, percentile ranking, and programmatic evaluation are provided at a later time. Some applications could be placed on a 'waiting list' for possible later funding.

Appeals of Funding Decisions

An appeal regarding the funding decision of a grant application may be made only on the basis of an alleged error in, or deviation from, a stated procedure (e.g., undeclared reviewer conflict of interest or mishandling of an application). Details concerning the appeals procedure may be obtained from the appropriate Research Administrator (with whom the applicant is encouraged to discuss his/her concerns), the CBCRP Director, or by contacting us through the CBCRP Web site: www.cabreastcancer.org/. The period open for the appeal process is within 30 days of receipt of the application evaluation from the Program office. Contact the CBCRP to obtain full information on the appeals process.

Final decisions on application funding appeals will be made by the UCOP Research Grant Program Office (RGPO) Executive Director Dr. Mary Croughan. Applicants who disagree with the scientific review evaluation are invited to submit revised applications in a subsequent grant cycle with a detailed response to the review.

Pre-funding Requirements

Following notification by the CBCRP of an offer of funding, the PI and applicant organization must accept and satisfy normal funding requirements in a timely manner. Common pre-funding items include:

- Verification of Principal Investigator status from an appropriate institutional official.
- Documentation of 501(c)(3) non-profit organization status for the organizations.
- Documentation of the DHHS-negotiated (or equivalent) indirect cost rate for non-U.C. institutions.

- Supply up-to-date documentation for approved indirect rate (F&A costs) agreements as of the grant's start date and any derived calculations, if applicable.
- Supply any missing application forms or materials, including detailed budgets and justifications for any subcontract(s).
- IRB applications or approvals pertaining to the award.
- Resolution of any scientific overlap issues with other grants or pending applications.
- Resolution of any Review Committee and Program recommendations, including specific aims, award budget, or duration.
- Modify the title and lay abstract, if requested.

Open Access Policy

As a recipient of a California Breast Cancer Research Program (CBCRP) grant award, you will be required to make all resulting research findings publicly available in accordance with the terms of the Open Access Policy of the Research Grants Program Office (RGPO) of the University of California, Office of the President (UCOP). This policy, which went into effect on April 22, 2014, is available below:

RGPO Open Access Policy

The UCOP Research Grants Program Office (RGPO) is committed to disseminating research as widely as possible to promote the public benefit. To that end, all RGPO grantee institutions and researchers grant RGPO a nonexclusive, irrevocable, worldwide license to exercise any and all rights under copyright and in any medium for all scholarly articles and similar works generated as a result of an RGPO grant award, and agree to authorize others to do the same, for the purpose of making their articles widely and freely available in an open access repository. This policy does not transfer copyright ownership, which remains with the author(s) or copyright owners.

Scope and Waiver (Opt-Out)

The policy applies to all scholarly articles and similar works authored or co-authored as a result of research sponsored by an RGPO grant, except for any articles published before the adoption of this policy and any articles for which the grantee institution and/or researchers entered into an incompatible licensing or assignment agreement before the adoption of this policy. Upon express written request of the institutional grantee and/or researcher, RGPO will waive the license for a particular article or delay "open access" to the article for a specified period of time.

Deposit of Articles

To assist the RGPO in disseminating and archiving the articles, the grantee institution and all researchers to the grant award will commit to helping the RGPO to obtain copies of the articles that are published as a result of an RGPO sponsored grant award. Specifically, each author will provide an electronic copy of his or her final version of the article to the RGPO by the date of its publication for inclusion in an open access repository, subject to any applicable waiver or delay referenced above. Notwithstanding the above, this policy does not in any way prescribe or limit the venue of publication.

Grant Management Procedures and Policies

Details concerning the requirements for grant recipients are available in a separate publication, the University of California, Office of the President, "RGPO Grant Administration Manual." The latest version of the Manual and programmatic updates can be obtained from the Program's office or viewed on our Web site: <http://www.ucop.edu/research-grants-program/grant-administration/index.html>.