

**New Funding Strategy for the
California Breast Cancer Research Program
The Way Forward**

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To accelerate an end to breast cancer, the California Breast Cancer Research Program (CBCRP) is changing how we fund research. Our strategy will generate new discoveries and approaches for preventing, detecting, and curing breast cancer and for caring for those affected by the disease. In March 2010, after three years of intense analysis, our Breast Cancer Research Council voted for a bold, new funding strategy that will focus on our successes and California's unique research opportunities.

Led by our council, we asked, "How we could best leverage California resources to make an impact on breast cancer?" By implementing the council's conclusions, the CBCRP will undertake new funding initiatives on breast cancer prevention and re-commit our investigations into the environmental causes and the unequal burden of breast cancer. We will support paradigm-shifting research ideas and the most efficient ways to use the knowledge we acquire to end the

suffering caused by breast cancer. For the next five years, the CBCRP will focus our funding on:

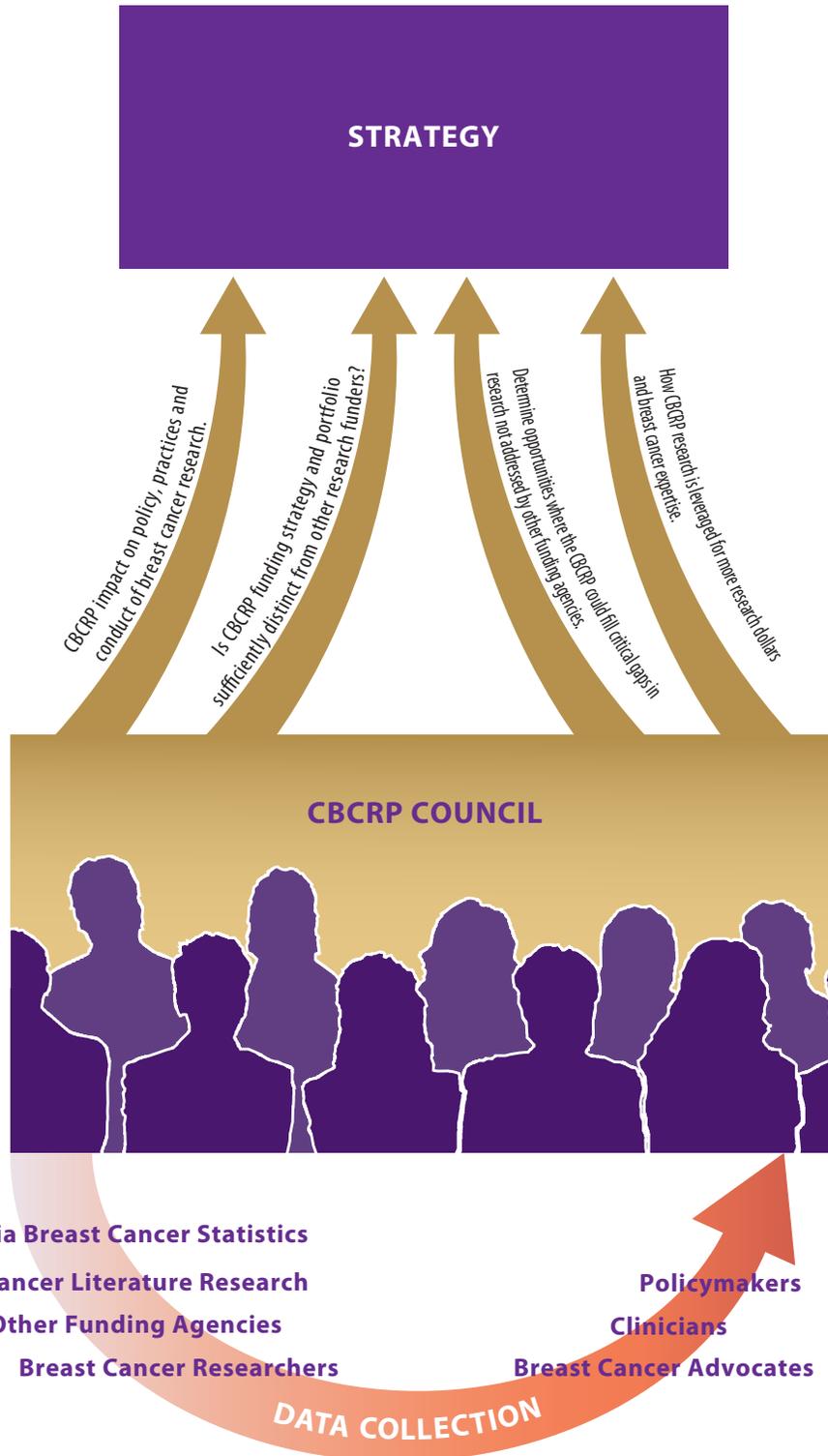
- Special Research Initiatives in primary prevention, environmental links to breast cancer, and disparities
- Community Research Collaborations
- Innovative, Developmental, and Exploratory Awards (IDEAs)
- Translational Research Awards
- Health Policy
- Conferences

Keeping the CBCRP Funding Strategy Relevant

By investing more than \$200 million in breast cancer research through targeted and thoughtful efforts, the CBCRP has been able to influence the research directions of larger funding organizations and make a significant impact on the field. The key to maximizing our ability to adapt to the changing landscape of breast cancer

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Evaluation Process



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research has been to review and evaluate the approaches that we use to fund research and to act on the analysis of the information. This is critical for keeping CBCRP funding relevant and for effectively utilizing California's resources.

The council began its review of the CBCRP's funding strategy by setting goals for the program and measuring how well the current funding strategy met those goals. They also considered the funding projections for the next five years and evaluated how sustainable the current strategy would be in that environment.

The council's goals are to take advantage of resources particular to California; encourage new collaborations; recruit high quality researchers to the field; examine and create solutions for disparities/inequities; feed innovation; inform breast cancer-related policies; and promote translational and/or outcome driven research.

Taking a Hard Look

Having set the criteria for defining a successful program, the council engaged in an intensive data collection and evaluation process to determine whether the CBCRP's current strategy was

The council identified ten goals that the CBCRP should achieve through our funding strategy.

California Specific: Fund research that utilizes resources particular to California and/or addresses a breast cancer need that is specific but not necessarily unique to the burden of breast cancer in California.

Career Development: Fund research that helps recruit, retain, and develop high-quality California-based investigators who engage in breast cancer research.

Collaboration: Fund research that uses multi-disciplinary approaches and helps foster collaboration among California scientists, clinicians, advocates, community members, patients, survivors, and others.

Disparities: Fund research that addresses disparities, inequalities and/or underserved populations in California.

Innovation: Fund innovative research (e.g., new drugs, new strategies, new paradigms, new applications of tested strategies in new populations and contexts).

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achieving those goals. This evaluation process included:

- identifying the impact that CBCRP research has had on the policy, practice, and conduct of breast cancer research through literature searches and funded investigator interviews;
- analyzing the ways in which CBCRP research has been leveraged to bring in more research dollars and increase breast cancer expertise through fiscal analysis and funded investigator interviews;
- determining whether the CBCRP funding strategy and portfolio was sufficiently distinct from the portfolios of other research funders by comparing them to the International Cancer Research Partners (US, UK, Canada, and European funders, including Komen for the Cure, Department of Defense Breast Cancer Research Program, American Cancer Society, National Cancer Research Institutes [UK], the Oncology Nurses Society, and the National Cancer Institute);
- identifying opportunities where the CBCRP could fill critical gaps in research by reviewing the portfolios of funding agencies, surveying our stakeholders (breast cancer advocates, breast cancer researchers, clinicians and policy makers), analyzing California breast cancer statistics, and drawing on the expertise of the council.

Non-duplicative: Fund research that complements, builds on, and/or feeds into, but is not duplicative of other research programs.

Outcome Driven: Fund research that will improve public health outcomes (e.g. preventing breast cancer, detection of breast cancer, effective treatments and quality of life).

Policy: Fund research and evaluation that will have policy implications for breast cancer in California.

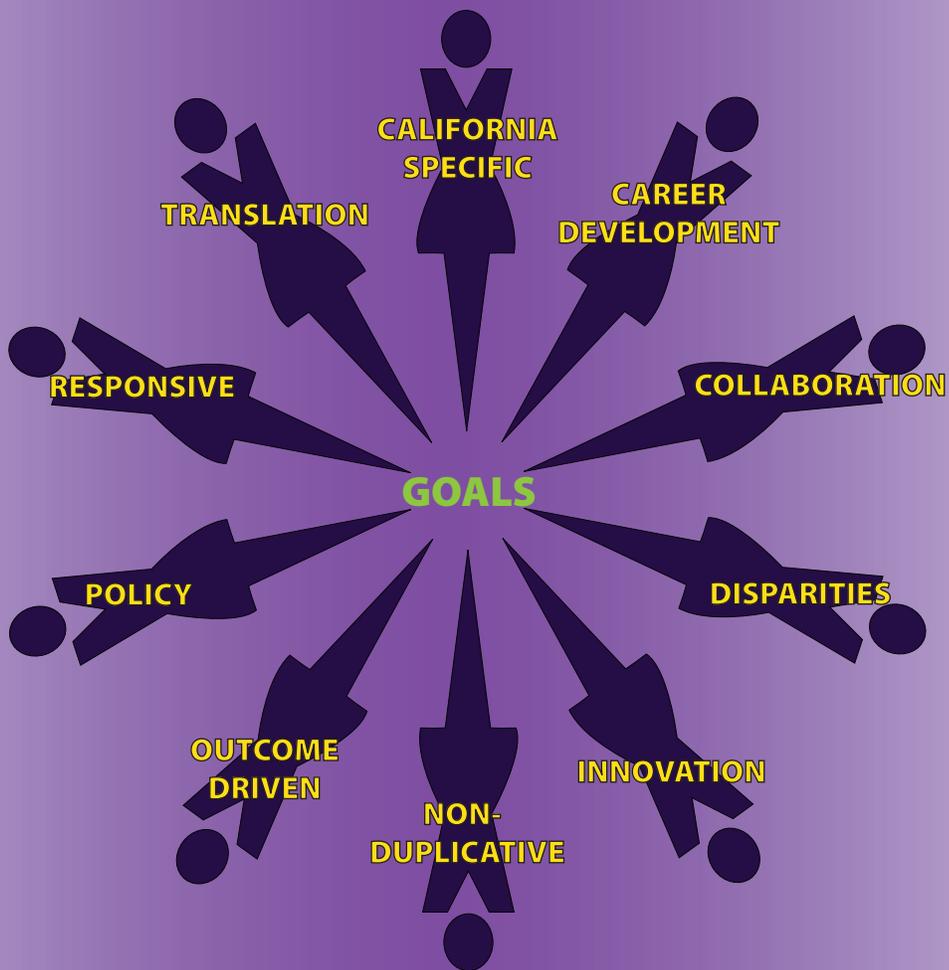
Responsive: Fund research that is responsive to the perceived breast cancer research needs, opportunities, and expectations of CBCRP as identified by scientists and the public in California.

Translation: Fund research that is on a critical path for practical application and leads to more effective products, technologies, interventions, or policies and their application/delivery to Californians.



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Goals to be Addressed through Funding Strategy



Making an Impact on the Breast Cancer Research Field

The evaluation revealed exciting achievements realized by the current CBCRP funding strategy. The program successfully targeted California-specific research primarily through the Community Research Collaboration (CRC) awards, the program-directed Special Research Initiatives on Environmental Causes and the Unequal Burden of Breast Cancer (SRI), and the Joining Forces Conference awards. Findings in these mechanisms moved into practice quickly and tended to address research questions that were particularly important for Californians. These mechanisms also established and developed new collaborations between groups that traditionally do not work together.

Grants made under the community impact priority areas especially focus the CBCRP's funding efforts on California specific research. From health access for rurally isolated women to risk intervention plans for ethnically diverse women, the community impact priority research area included community-based collaborative mechanisms as well as innovative awards and career development awards.

The council found that the CBCRP was also making strides in probing under-researched areas of breast cancer.

Almost a third of CBCRP grants addressed, at least in part, issues related to breast cancer disparities, and most successful outcomes improved access and services for underserved populations. Innovation, and surprisingly career development, was flourishing through the IDEA grants (high risk/high reward projects that do not require preliminary data for funding). The IDEA grants were being used to fund the beginning stages of novel projects, establish new collaborations, develop new technologies, or adapt technologies from other fields to breast cancer research. The seed projects were being leveraged into larger studies, bringing new researchers into the breast cancer field and retaining them, and even leading to Nobel Prize-winning research.



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The Promise of Advances

Several funding strategies were instituted too recently to be analyzed in-depth; however, a preliminary review assured the council that the projects were heading in the right direction. For example, the strategy for funding translational research was established three years ago and none of the projects are completed yet. On reviewing the range of topics on the progress made so far, the council was optimistic that the five studies funded to date offered an intriguing variety of opportunities to make an impact on breast cancer treatment, prevention, and health service delivery.

The council performed an in-depth analysis of how CBCRP research is affecting policy and found that almost a third of the investigators who responded to our survey identified an impact of their work on policy in the health education or health information area, most notably in informing screening guidelines. The influence of CBCRP studies on state and national policy has just begun. The results from the first completed initiative of the SRI have caught the attention of state and national policy makers, and have the potential to shape chemicals policy as it relates to breast cancer throughout the country.

Opportunities to Make a Greater Contribution

There were a few areas where the evidence showed that the CBCRP was falling short of its goals. Stakeholder surveys indicated tremendous interest in the etiology and prevention research areas; however, CBCRP funding in prevention is the smallest portion of our portfolio. While the council was satisfied that the CBCRP's trend in supporting research into the causes of breast cancer was moving toward an emphasis on the exogenous factors (such as environment), they were concerned that the small number prevention research grants were in research areas that were well-funded by other organizations (like chemoprevention).

Additionally, comparisons between funding mechanisms offered by the CBCRP to mechanisms offered by other funding agencies revealed a potential overlap in the design of the career development awards and the CBCRP IDEA renewals. Postdoctoral fellowships were plentiful and IDEA renewals were similar to larger awards requiring preliminary data that were offered by other funding agencies.

The council concluded that while there was much to be happy with, there were changes that could be adopted to make the CBCRP even more effective.

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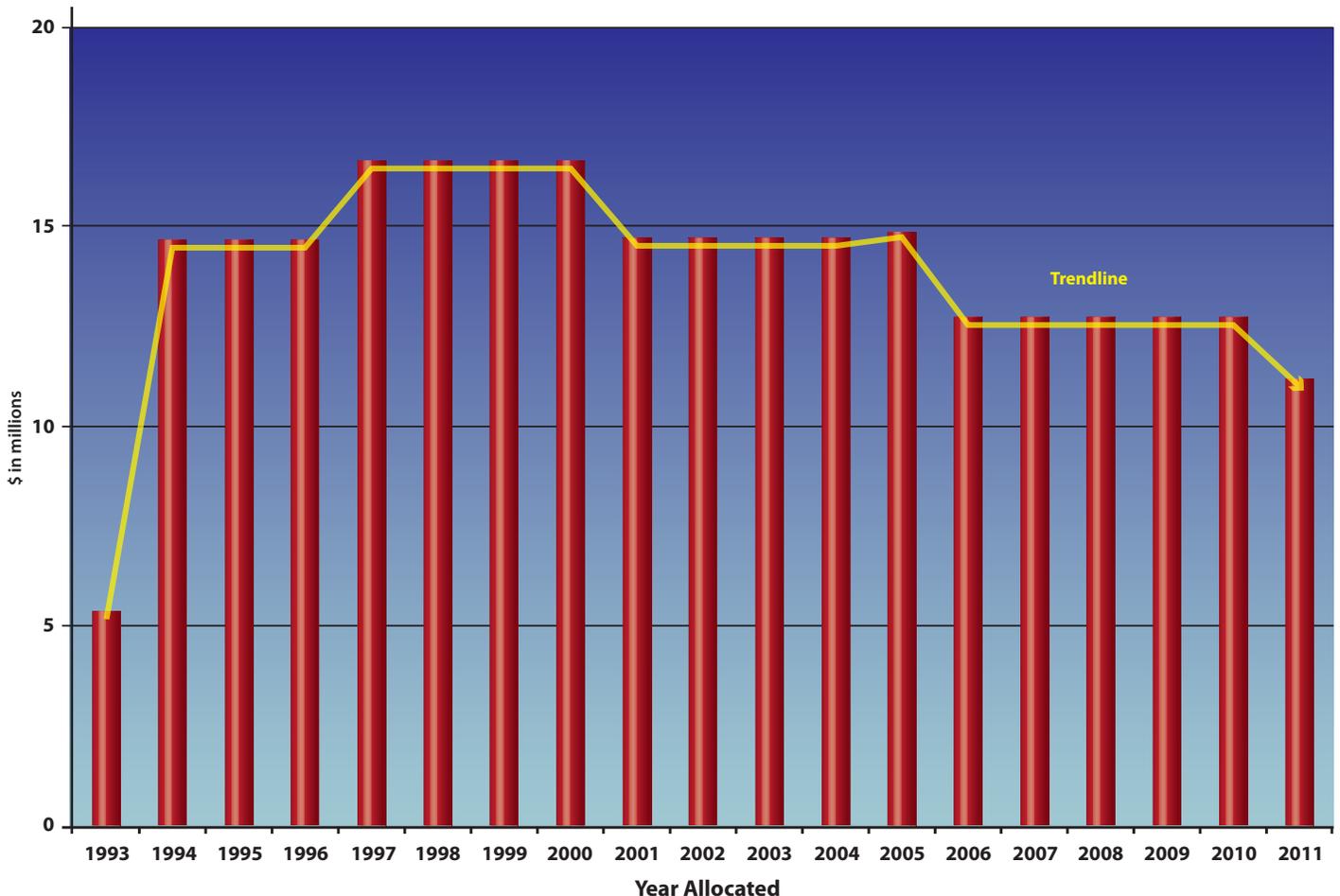
Declining Resources Reinforce a Need for Change

The CBCRP is funded primarily through a portion of a 2¢ state sales tax on tobacco products. This revenue source is declining.

Our anticipated state allocation for 2011 is expected to drop 15% from our average allocation of the past five years. The council reviewed the funding with

the current array of award types and priority issues and became concerned that the Program was stretching its resources too thinly.

By the end of the evaluation, it was clear that maintaining the existing funding strategy would weaken the CBCRP's effectiveness and limit our

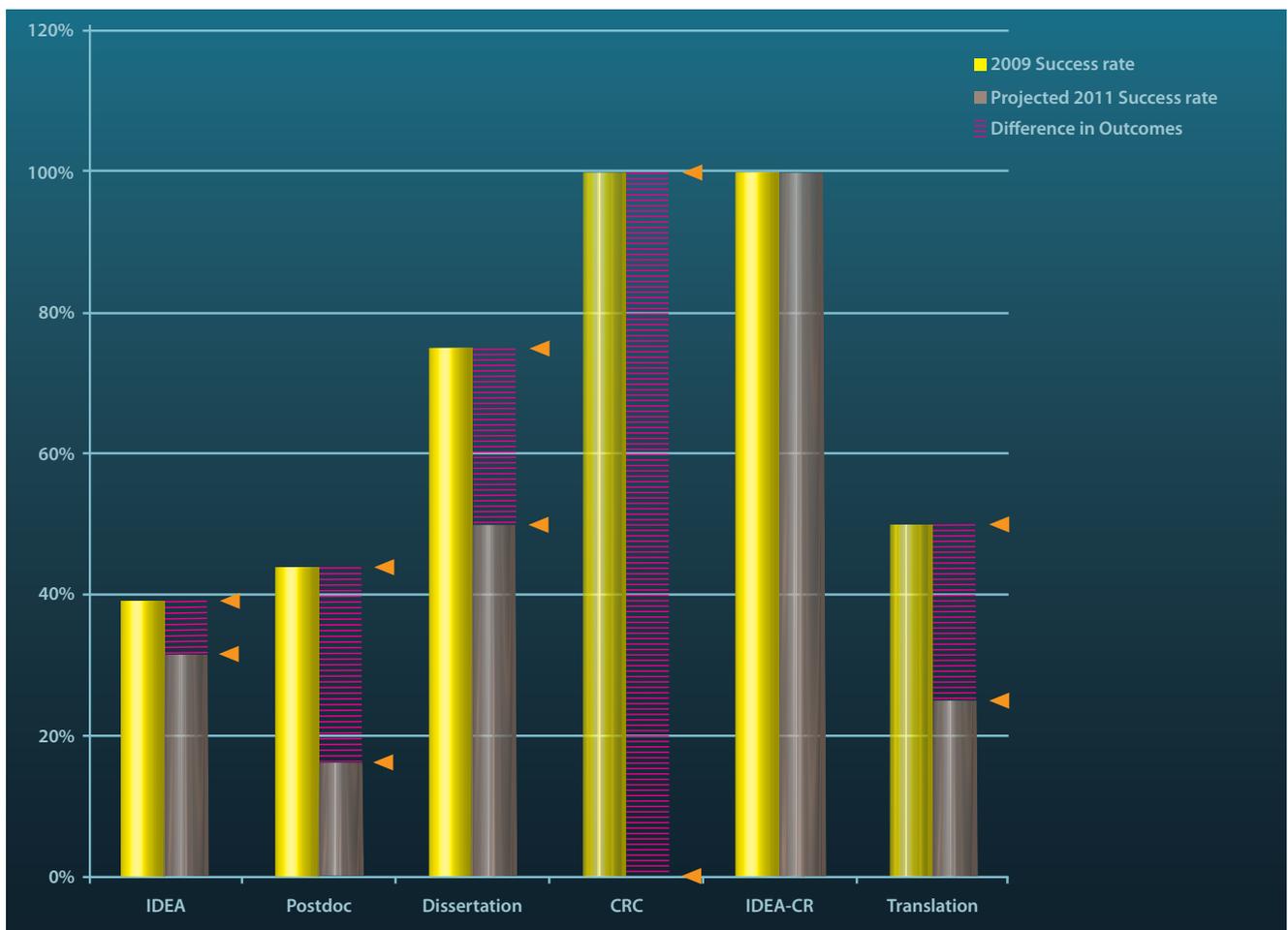


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ability to make an impact against breast cancer. With less money spread between seven investigator-initiated award types, the success rate for applications would plummet. The low success rate would diminish applicants' enthusiasm for

investing the time and effort necessary to develop a scientifically rigorous application. Absent a change, we cannot expect our funding level to rise again. Faced with significant funding reduction, we knew that greater changes to our funding strategy were required.

Impact on Success Rate if Nothing Changes



Optimizing Our Funding Strategy to Improve Success

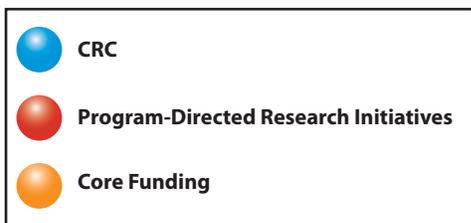
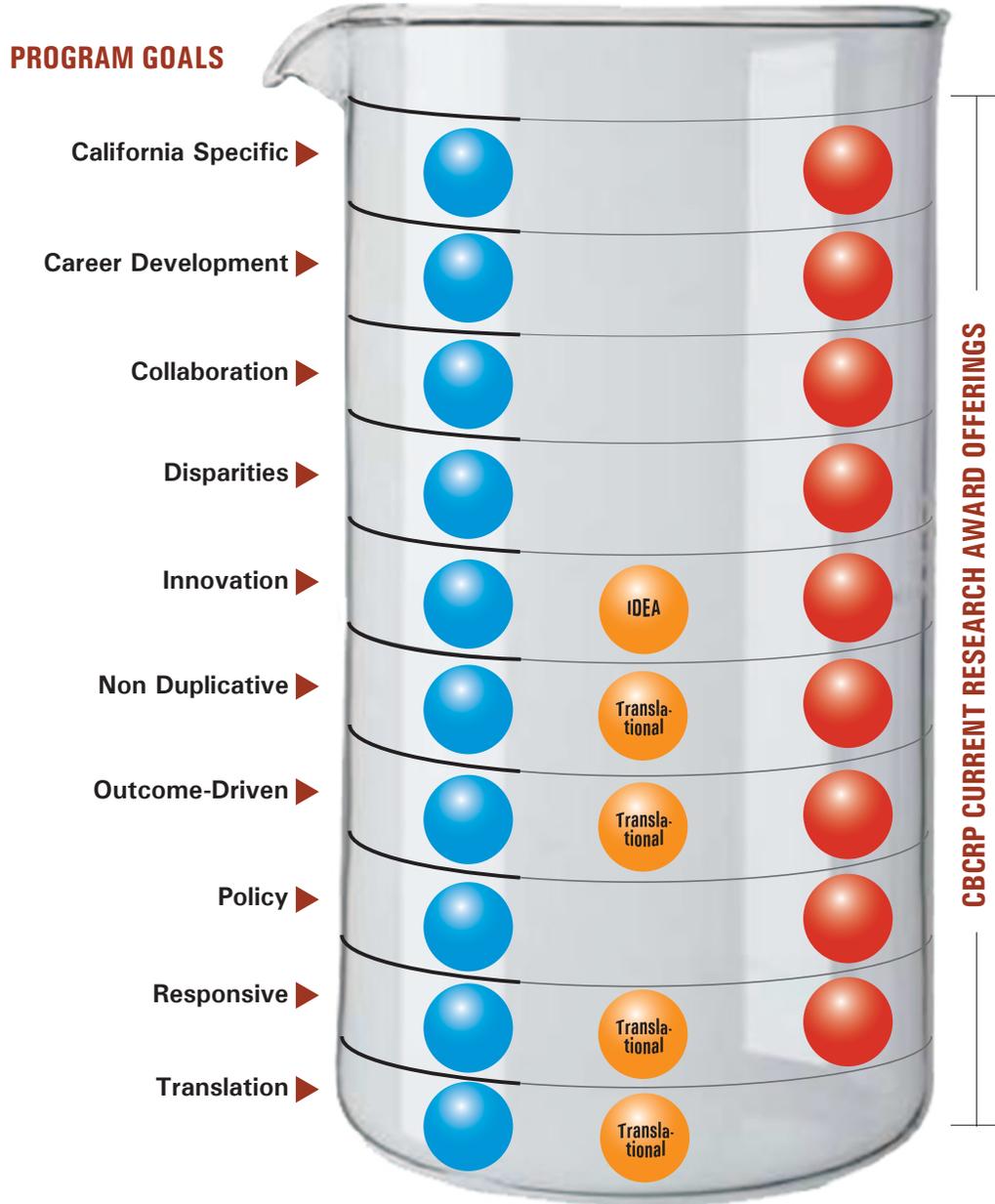
After synthesizing the conclusions from the evaluations, the funding projections and the overall goals for the program, the council developed a bold new strategy for putting breast cancer research in California at the forefront of the field. They decided that for the next five years, the California Breast Cancer Research Program will focus its funding on:

- **Special Research Initiatives (SRI):** We are setting aside 50% of our annual funds to undertake program-directed research that focuses on the primary prevention of breast cancer and expands on the research from our previous SRI on the role of the environment in breast cancer and the reasons behind the unequal burden of the disease. Topics will include:
 - > Identification and elimination of environmental causes of breast cancer and disparities/inequities in the burden of breast cancer in California
 - > Population-level interventions (including policy research) on known and suspected risk factors and protective measures; and targeted Interventions for high-risk individuals, including new methods for identifying or assessing risk
- **Community Research Collaborations:** We are allocating \$2 million annually to support community-based participatory research that enables community groups and academic researchers to jointly answer important breast cancer questions.
- **Innovative, Developmental, and Exploratory Awards (IDEAs):** We are supporting ground-breaking research that applies novel methods, perspectives, and approaches that may lead to extraordinary outcomes.
- **Translational Research Awards:** We are supporting research focused on determining how to effectively apply and/or deliver products, technologies, interventions, or policies to Californians.
- **Health Policy:** We are allocating \$150,000 annually for a rapid-response mechanism to fund health policy research.
- **Conferences:** We are supporting up to \$50,000 in breast cancer conferences annually.

By narrowing our focus to the areas where we have the greatest impact—community collaborations; translational research; innovative, high-risk/high-reward research; and our landmark, program-directed Special Research Initiatives—we will continue to lead the nation in meaningful advances against breast cancer and provide applicants with strong opportunities for success.

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Fulfilling Goals with Key Ingredients



Evolving in Order to Achieve Our Mission

The new funding strategy will result in changes to the structure of some of our awards; for instance, letters of intent will now be required in order to apply for IDEA awards. This should give investigators a chance to test ideas for council interest before investing time and energy in submitting a full application for the award.

Several previous award offerings have been discontinued, primarily because our evaluation showed that the award types were well-supported by other funding organizations. These include the postdoctoral fellowships, dissertations, and IDEA renewal awards. We expect that there will be career development opportunities in the Special Research Initiative offerings, and the preliminary data developed by the IDEA awards should put investigators in a good position to receive grants from agencies that require preliminary data before funding.

We are dedicated to pushing breast cancer research in new, creative directions, filling gaps not covered by other research funders, and fostering new types of collaboration in order to more quickly eliminate breast cancer in California. To fulfill our mission and remain the foremost leader in state-

funded breast cancer research, we are committed to maintaining our high standards of scientific rigor and financial efficiency. Our legislative mandate restricts our administrative costs at or below 5% of our total funding, and we zealously guard the remaining funds so that they are used in the best manner possible to push breast cancer research the farthest.

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What is the California Breast Cancer Research Program?

The California Breast Cancer Research Program (CBCRP) was established pursuant to passage by the California Legislature of the 1993 Breast Cancer Act (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 California Breast Cancer Research Program

- The CBCRP is the largest state-funded 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 \$7 million for breast cancer research
- Ninety-five percent of our revenue goes directly to funding research and education efforts
- Since 1994, the CBCRP has awarded over \$213 million in 894 grants to 101 institutions and organizations across the state. The CBCRP supports innovative breast cancer research—including cow viruses, Tibetan herbs, snake venom—that might otherwise go unfunded. With continued investment, the CBCRP will work to find better ways to prevent, treat, and cure breast cancer.

2010 Breast Cancer Research Council Members

The CBCRP relies on its Breast Cancer Research Council, which is responsible for tracking the trends and opportunities for progress that arise in the breast cancer community, making funding recommendations, and planning future directions of the CBCRP. The council is made up of 17 people selected to represent those affected by breast cancer and the institutions that can help find a solution.

Chair, Jim Ford, M.D., scientist/clinician

Vice Chair, Barbara Brenner, advocate

Lisa Barcellos, Ph.D., scientist/clinician

Roxanna Bautista, M.P.H, nonprofit health organization representative

Chris Bowden, Ph.D., industry representative

Susan Braun, advocate

Teresa Burgess, Ph.D., industry representative

Moon Chen, Jr., Ph.D., M.P.H., scientist/clinician

Laura Fenster, Ph.D., scientist/clinician

Karren Ganstwig, advocate

Carlina Hansen, nonprofit health organization representative

Shelley Hwang, M.D., scientist/clinician

Klaus Porzig, M.D., medical specialist

Jeanne Rizzo, advocate

Donna Sanderson, advocate

Sherie Smalley, M.D., ex-officio

Mary Alice Yund, Ph.D., scientist/clinician

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