

Analysis of Federal Research Investments in Breast Cancer & the Environment Research

- **Purpose**

- To understand investment
 - Goals
 - Gaps
 - Overlaps

- **Methodology**

- Used classification coding systems currently available
- Contacted agencies directly



Analysis of Federal Research Investments in Breast Cancer & the Environment Research

- ✓ **Etiology Code 2.1:** *Exogenous Factors in the Origin and Cause of Cancer*
- ✓ **Etiology Code 2.3:** *Interactions of Genes and/or Genetic Polymorphisms with Exogenous and/or Endogenous Factors*
- ✓ **Prevention Code 3.1:** *Interventions to Prevent Cancer: Personal Behaviors That Affect Cancer Risk*

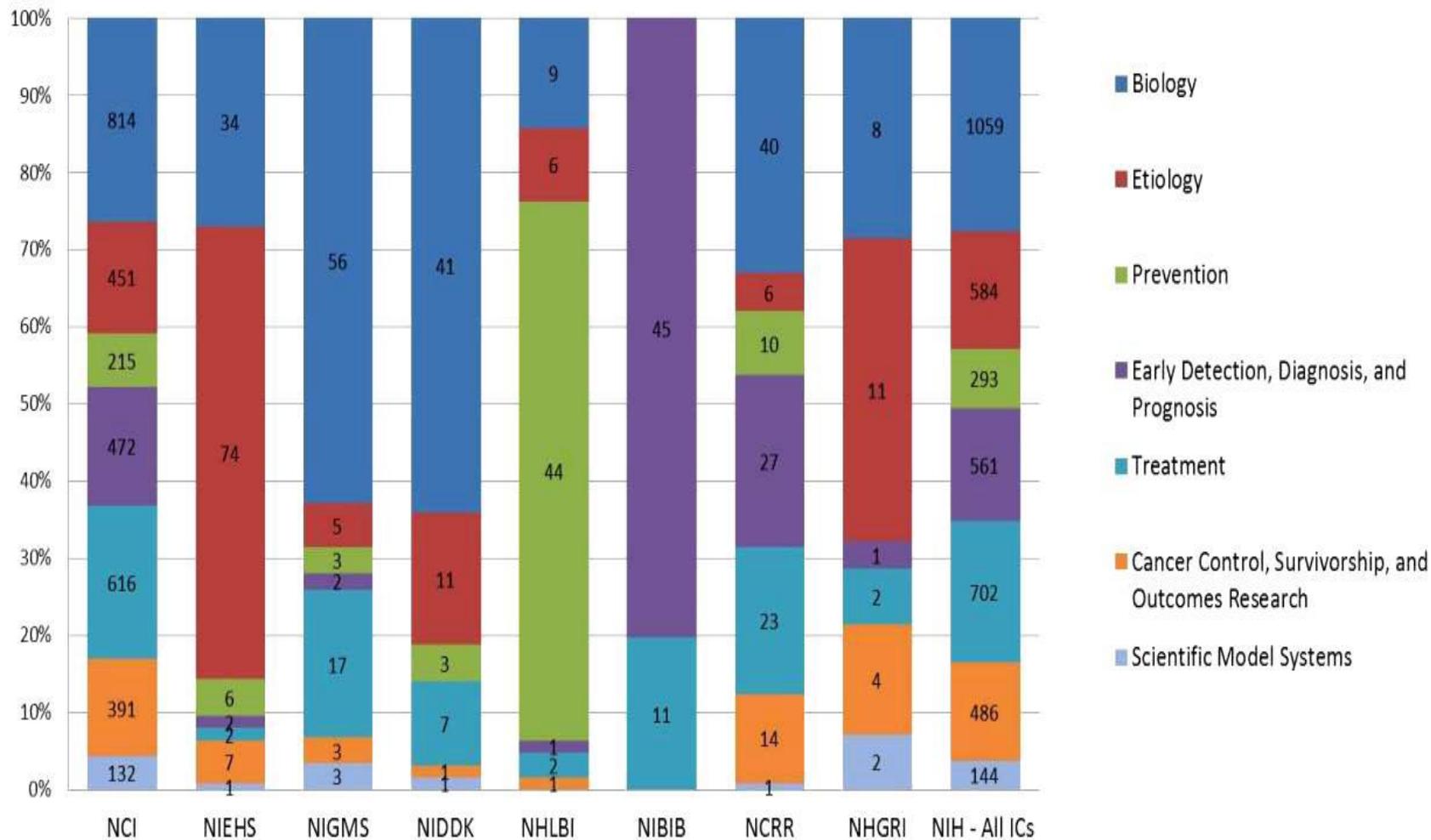


Common Scientific Outline

<https://www.icrpartnership.org/CSO.cfm>

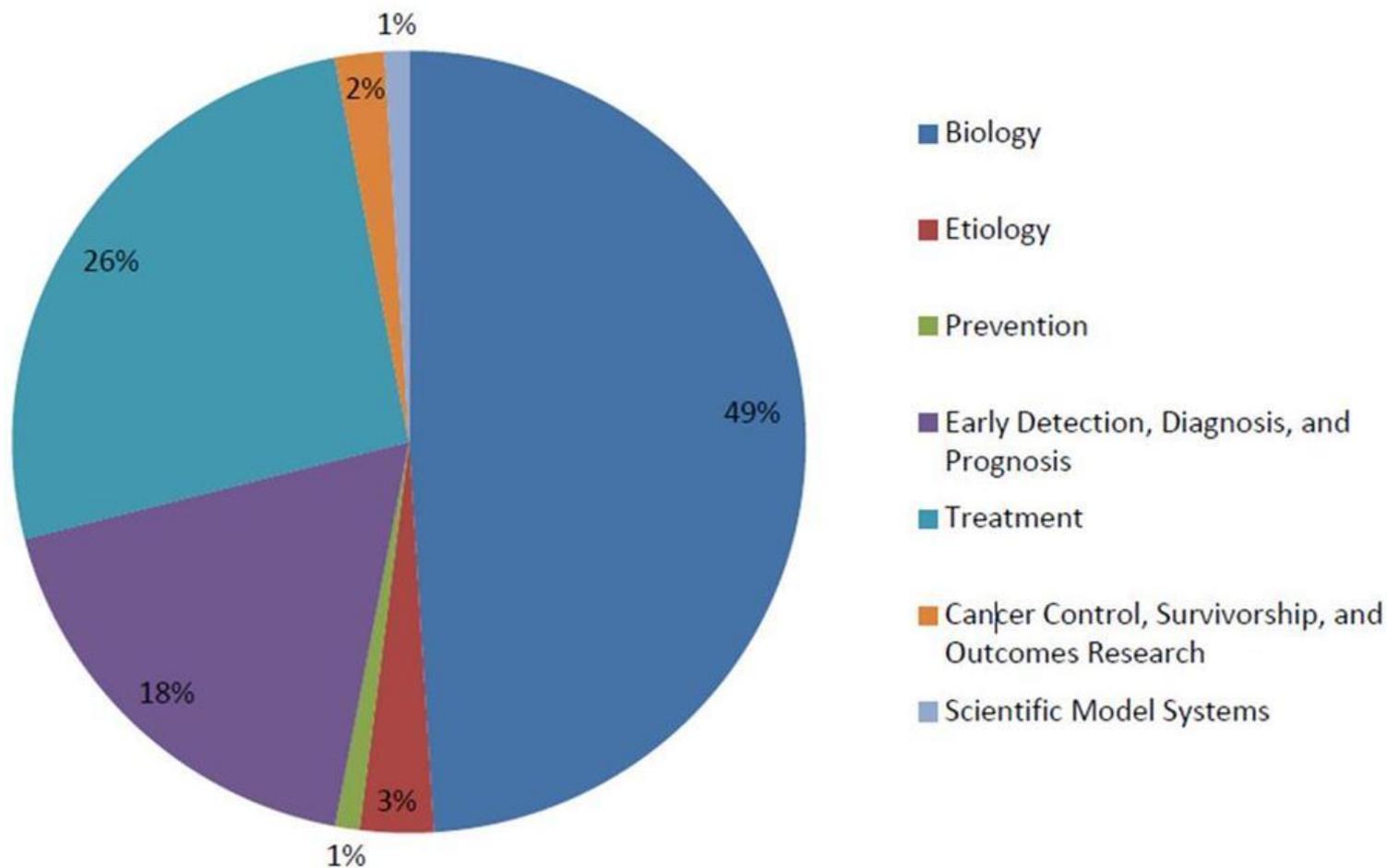
Breast Cancer and the Environment: Prioritizing Prevention

Distribution of NIH Breast Cancer Projects by CSO Categories (FY 2008-2010)



Breast Cancer and the Environment: Prioritizing Prevention

Distribution of DoD Breast Cancer Research Funding by CSO Category in % of Total Dollars Awarded (FY 2006 – 2010)



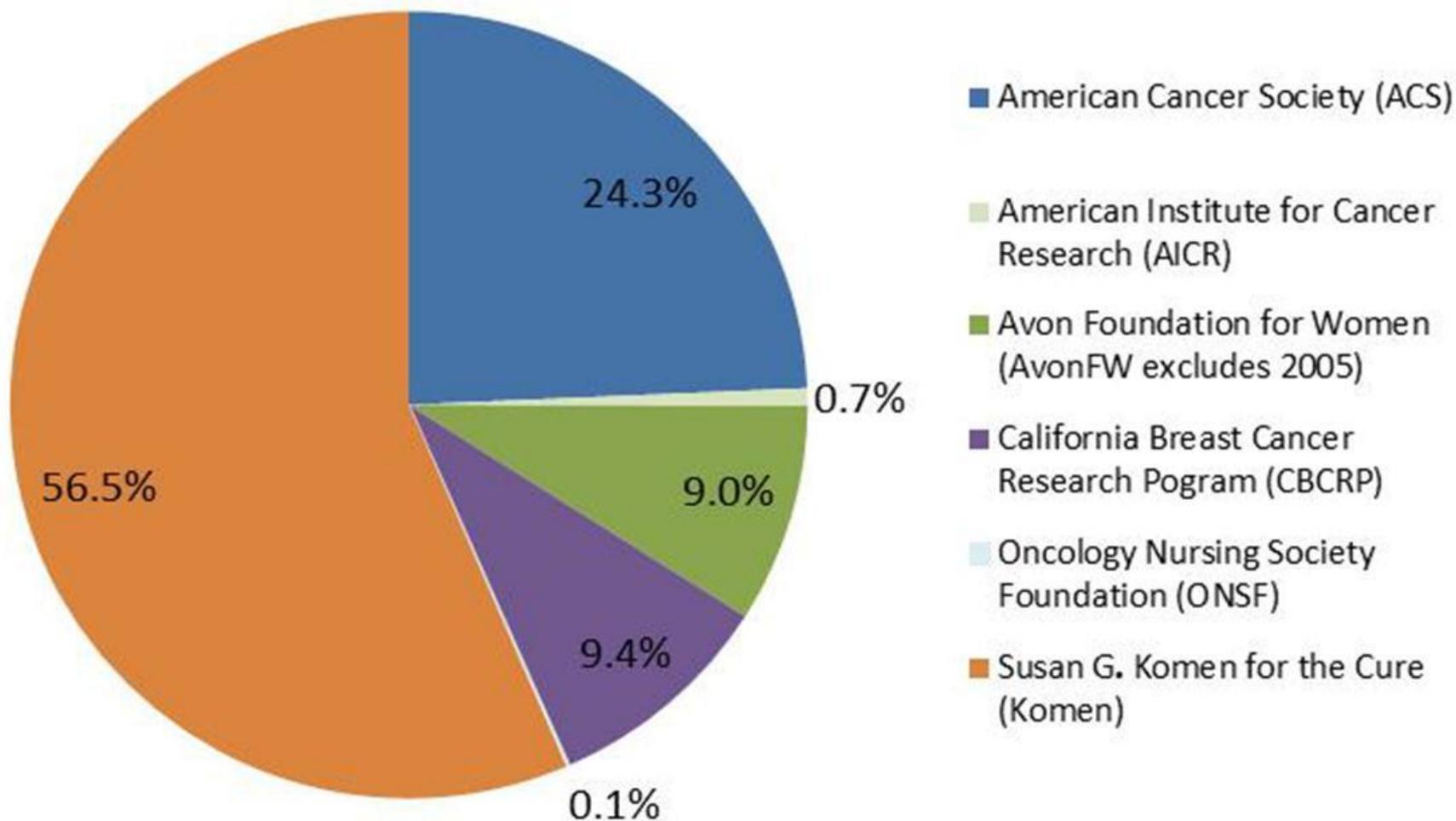
Other Federal Agencies Investing in Breast Cancer

- Centers for Disease Control and Prevention
- U.S. Environmental Protection Agency
- U.S. Food and Drug Administration



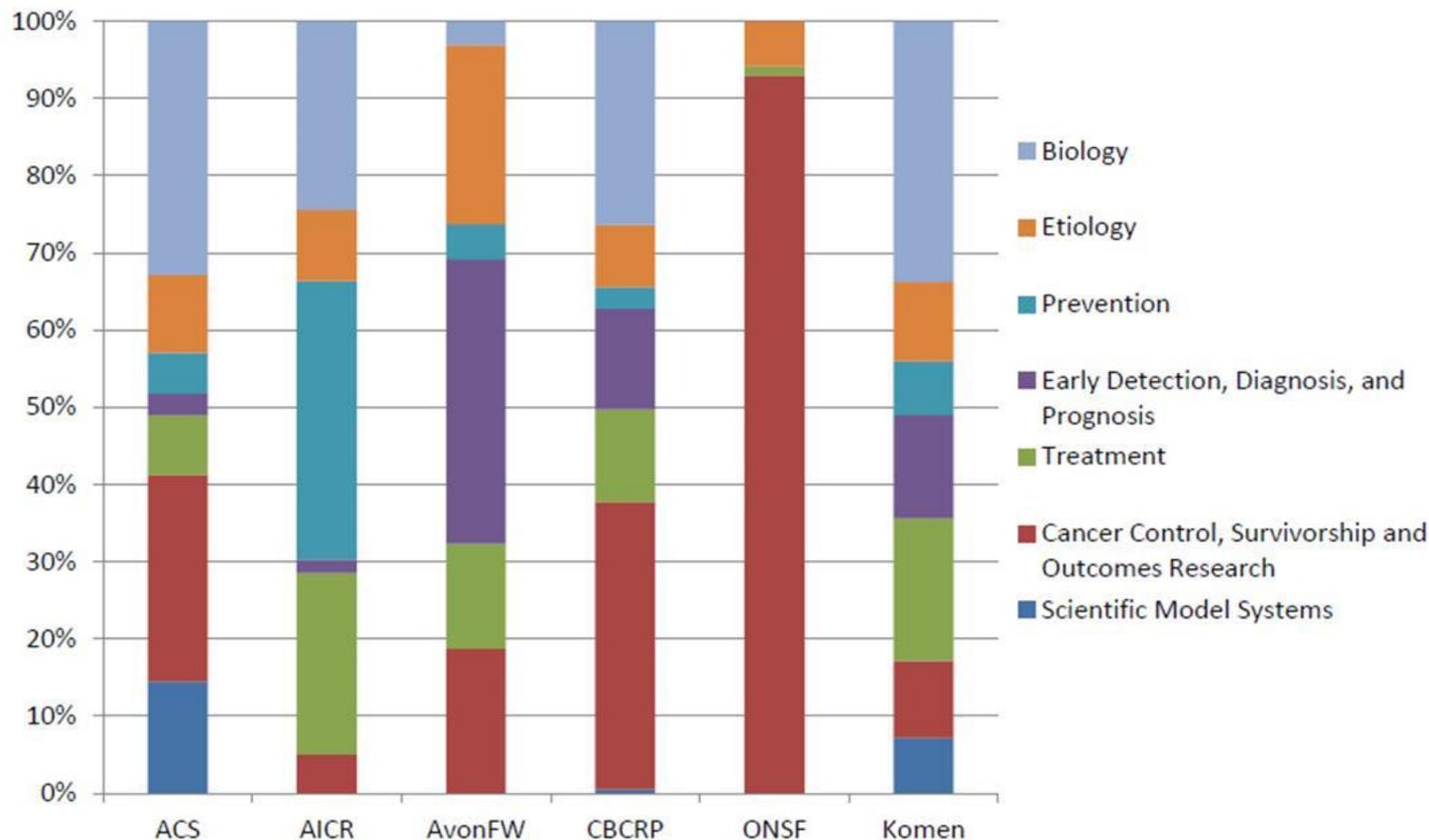
Breast Cancer and the Environment: Prioritizing Prevention

Distribution of Breast Cancer Research Grant Funding by Major Nongovernmental Organizations (NGOs) (FY 2005-2009)



Breast Cancer and the Environment: Prioritizing Prevention

Distribution of Projects Related to Breast Cancer across NGOs by CSO Categories (FY 2005-2009)



Portfolio Analysis Summary

- Our analysis revealed that environmental and prevention studies made up only about 10 to 11 percent of all breast cancer projects funded by the NIH and DoD during the fiscal years examined.
- NGO prevention research comprised less than 7 percent of the total \$ spent on breast cancer research.

Portfolio Analysis Implications

- We need to **increase the number of applications** for funding directed to breast cancer and the environment.
- We need to **prioritize funding** for projects focusing on environmental etiology and prevention.

Coordination and Strategic Planning

- The Committee found that although many Federal agencies engage in breast cancer research, there was little across agencies.
- There is a great need for information sharing, coordination of funding priorities, and joint scientific planning.

Recommendations for Improving the Research Process

- Increase support for transdisciplinary research projects on breast cancer and the environment.
- Develop a more diverse community of scientists working on breast cancer and the environment.
- Support the U.S. Government Accountability Office (GAO) recommendation on improving access to comprehensive electronic information on funded health research.
- Develop better coding systems for funded cancer projects.

Recommendations for Improving the Research Process

- Create a mechanism to facilitate joint strategic planning and coordination among government and NGOs.
- Continue and expand the use of advocates and stakeholders in the breast cancer and the environment research enterprise.
- Support the development of knowledge integration tools in this research area to describe what is known about the environmental causes and prevention of breast cancer. Such tools would both facilitate the identification of research gaps and suggest approaches to efficiently fill them.



Breast Cancer and the Environment

Prioritizing Prevention

**Translation, Dissemination, Communication and
Policy Implications of Research Related to Breast
Cancer and the Environment:**

From Science to Society and Back Again

Research Translation, Dissemination, Communication and Policy Implications

Research on environmental exposures that affect breast cancer development, progression, and mortality must be translated into effective prevention action and policies.



Key Definitions

- **Research Translation:** The transfer of scientific discoveries from laboratory, clinical, or population studies into effective interventions at the individual and population level.
- **Research Dissemination:** Targeted distribution of evidence-based research findings intended to influence health care consumers in ways that ultimately prevent and reduce breast cancer burden in society.
- **Research Communication:** Bidirectional approaches that provide the public with understandable scientific knowledge and scientists with allies who can communicate with others.

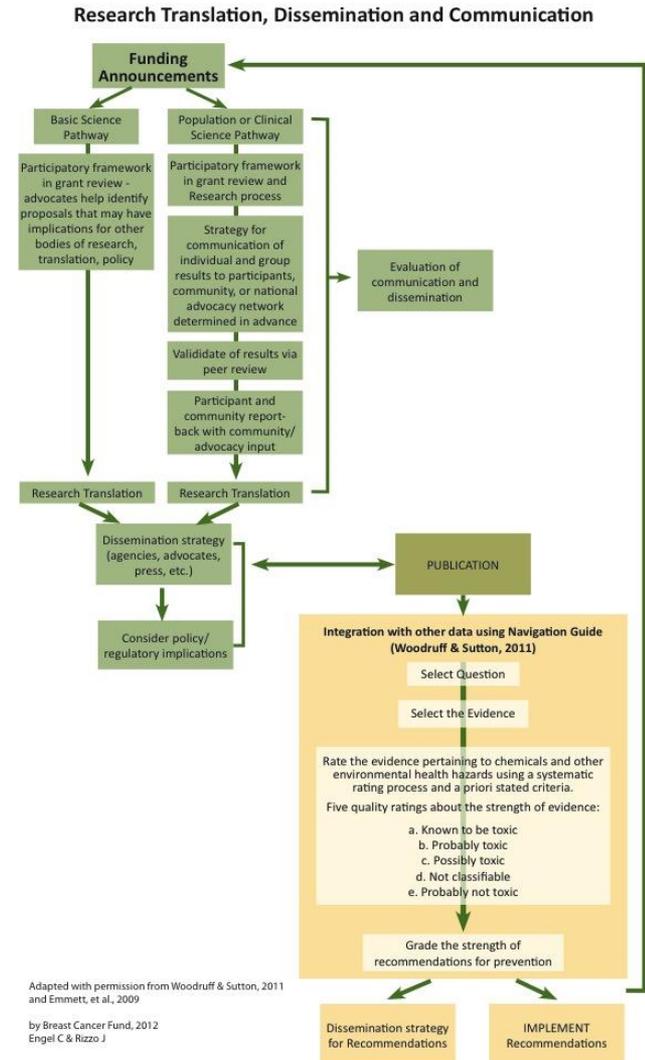
Knowledge-to-action gap

- Only 14 percent of biomedical research affects patient care.
- Average time lag between discovery and application is 17 years.
- These statistics might be different for public health

Prevention requires we close the knowledge-to-action gap and translate science into preventive public health actions that can impact breast cancer incidence in the future.

Research does not end with publication

- Engage advocates early on to ensure research questions are relevant.
- Advocate engagement in the design and implementation of research can support effective dissemination to the public and decisionmakers.
- After publication weigh evidence.
- Navigate science and make decisions to support prevention.



Build in communication and dissemination

Dissemination

PUSHES information out to intended users and **PULLS** users in to utilize the information (Dearing & Kreuter, 2010)

- Engage intermediaries
- Conduct outreach to stakeholders
- Employ Structured Plans

Communication

makes information understandable

- Report-back to participants
- Dialogue that is tailored to the audience
- New technologies

Recommendations

for Effective Research Translation, Dissemination and Communication

1. Require research projects on breast cancer and the environment to integrate research translation, dissemination, and communication plans early and throughout the research process *in ways that facilitate partnerships with stakeholders from scientific, breast cancer advocacy, environmental justice and provider communities.*
2. Translate, disseminate, and communicate research findings to stakeholders in a timely manner while targeting a wide range of disciplines, professions and communities.

Recommendations

for Effective Research Translation, Dissemination and Communication

- 3. Use interagency and interorganizational collaborations to coordinate and amplify messages regarding what is known about the environmental causes of breast cancer.**
- 4. Identify strategies for determining when and how (i.e., at what point of evidence) to take action when breast cancer risk or survival is suspected to be associated with environmental exposures or risk factors.**

Examples of Current Programs

Breast Cancer and Environment Research Program (BCERP)

- Structure for translation, dissemination, and communication
- Community-based Participatory Research Principles (CBPR)

California Breast Cancer Research Program

- Critical Path
- Advocate Involvement in LOI process
- Strategic Research Initiatives to motivate projects on Disparities, Prevention, and Environment

Pediatric Environmental Health Specialty Units (PEHSUs)

- Research Translation
- Communication to the Public



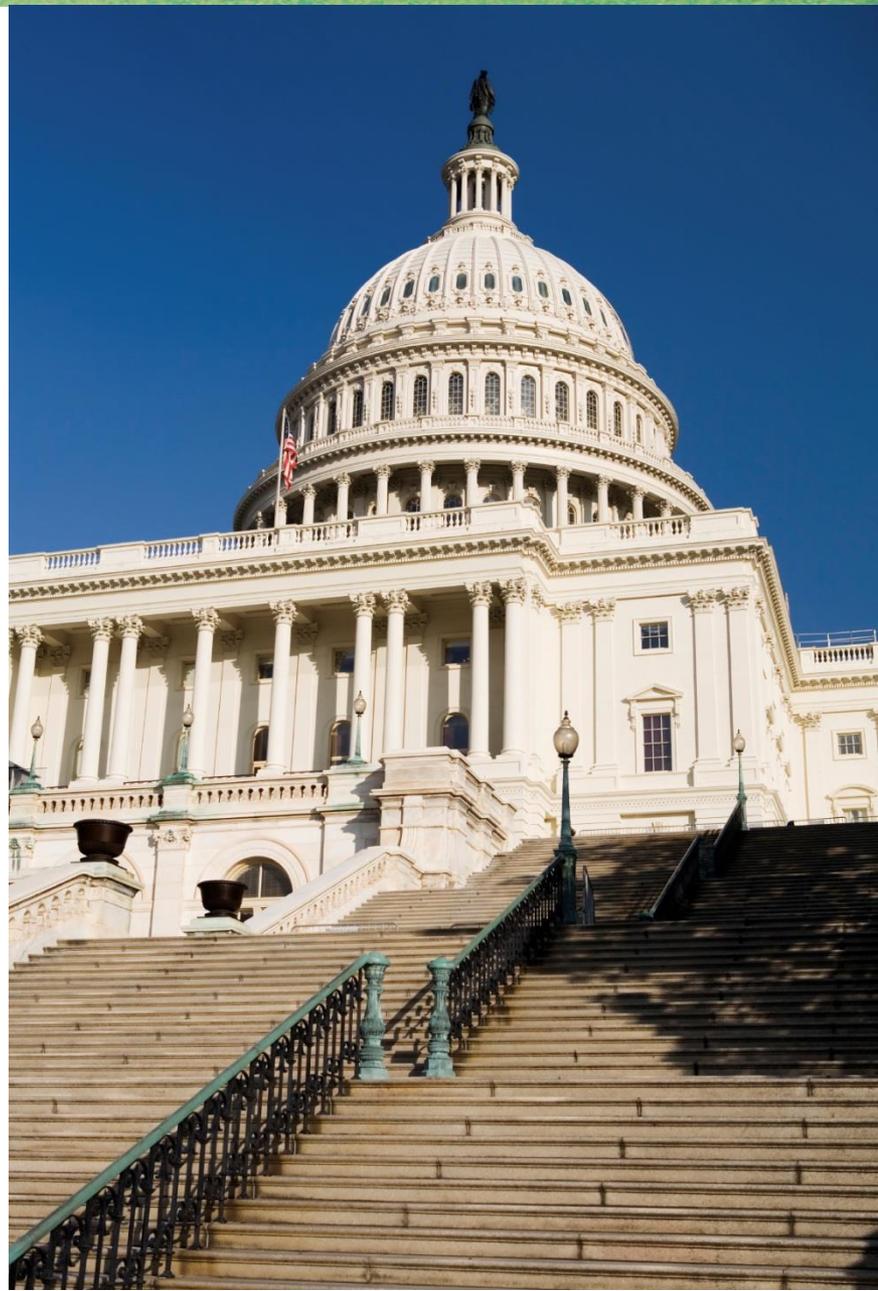
These programs often included:

1. Formal structures for translation, dissemination and communication built-in from the inception of the research
2. Participatory approaches for involving stakeholders
3. Funded advocates and community involvement
4. Integrated environmental justice
5. Evaluated partnerships, dissemination and communication, and research impact



Policies can:

1. Shape the conduct, reporting and interpretation of research.
2. Translate research into effective prevention strategies
3. Support safety assessment of alternative chemical, manufacturing and waste disposal practices
4. Ensure the public's right to know
5. Support environmental justice
6. Improve the built environment (parks, access to fresh foods)
7. Shape the implementation of research into public health programs
8. Facilitate primary prevention by reducing certain exposures



Policy Implications of the Report

1. Prioritize human studies that evaluate pubertal timing, growth indices, and environmental exposure information across the life course.
2. Require the collection and evaluation of mammary gland samples in testing for industry and government health evaluations.
3. Expand biomonitoring programs and devote adequate resources to communicating biomonitoring results to research participants, the public, and policymakers.
4. Prioritize the testing of chemicals that are produced in high volumes for which there is biologically plausible evidence of their role in the development of breast cancer.
5. Address gaps in risk assessment.
6. Create a mechanism to facilitate joint strategic planning and coordination among funders.
7. Continue and expand the use of advocates and stakeholders in the breast cancer and the environment research enterprise.

Prioritizing prevention requires

**That we translate and
communicate science to society**

The Committee recommends that the translation and dissemination of research findings be built from the start into every funded program that focuses on breast cancer and the environment.

The Path Forward

1. Prioritize prevention

- The Committee recommends a national breast cancer prevention strategy to prioritize and increase federal government investments in breast cancer prevention.



The Path Forward

2. Transform how research is conducted

- The Committee recommends investigation into compelling scientific themes using a transdisciplinary approach.

3. Intensify the study of chemical and physical factors

- The Committee recommends research on the effects of chemical and physical factors that potentially influence the risk of developing and the likelihood of surviving breast cancer.

4. Plan strategically across Federal agencies

- The Committee recommends that federal, state, and nongovernmental organizations coordinate and collaborate to accelerate the pace of scientific research on breast cancer and the environment.

The Path Forward

5. Engage public stakeholders

- The Committee recommends federal programs that encourage and enable scientists to engage in transdisciplinary research.

6. Train transdisciplinary researchers

- The Committee recommends federal programs that encourage and enable scientists to engage in transdisciplinary research.

7. Translate and communicate science to society

- The Committee recommends that the translation and dissemination of research findings be built from the start into every funded program that focuses on breast cancer and the environment.