International Breast Cancer & Nutrition (IBCN) Project

INITIATIVE

The IBCN collaboration initiated in 2010 is composed of representatives from Canada, China, France, Ghana, Uruguay, the United Kingdom, Lebanon, Qatar, Switzerland, and the United States that are dedicated to the primary prevention of breast cancer. The integrated collaborative global endeavor aims to identify the impact of culture and environmental factors such as nutrition and lifestyle on breast cancer onset and to elucidate the mechanisms involved in nutrient-induced breast tissue alterations and cancer development.

The development of breast cancer prevention strategies will be facilitated through a better understanding of the epigenetic regulation of the genome (i.e., chromatin-based mechanisms that control the expression and silencing of genes). An approach is to identify epigenetic factors that influence breast cancer onset in response to the environment. An initial focus is on nutrition since dietary patterns have been associated with breast cancer and nutrients are known to impact gene expression (nutrigenomics). This approach will be facilitated by the development of novel assessment methods of pre-symptomatic, normal appearing tissues. Once the diet-epigenetic interactions that protect or weaken the breast epithelium have been identified, it will be possible to develop effective breast cancer prevention strategies that will benefit from innovative methods of delivery and of rapid evaluation of the intervention success. This approach can also be applied to the study of additional environmental factors on breast cancer development.

IMPACT

- Established a collaborative breast cancer prevention research network representing more than 10 world regions with contributions from scientists, clinicians, and advocates
- Built a working network with expertise in primary prevention of breast cancer, integrating cancer biology, epigenetics and genetics, epidemiology, nutrition, medicine, engineering, statistics, communication, law and public policy, anthropology, education, healthcare and economy, behavior and other social sciences and humanities
- Built awareness among community and professional constituencies to promote primary prevention on breast cancer
- Developed more than 25 research projects for student training
- Sponsoring two international students exchange per year
- More than 4 publications at peer-reviewed journals
- Received research grants from Keck Foundation and Qatar National Research Foundation
- Recognizing exceptional mentors to women students/scientists in breast cancer field by Susan Bulkeley Butler Leadership Excellence Award
- Building interactive databases on epigenetics and the environmental impact on the epigenome in order to facilitate research and training in primary prevention research
- Sponsoring an annual international symposium to connect the global research teams and learn about current studies from around the world
- Hosting annual breast cancer prevention charity event at a local Lafayette farm
- Accepted as a symposium at Experimental Biology meeting in San Diego, CA, April 2014

For more information, go to http://www.purdue.edu/IBCN