

Introduction: Developing a Global Collaboration to Study Diet and Non-Communicable Disease Prevention

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Session- International Breast Cancer and Nutrition: A model for research, training and policy in diet, epigenetics, and chronic disease prevention

Connie Weaver – IBCN

Ailsa Welch – Diet and Breast Cancer – New Approaches

Nahla Hwalla – Diet and Breast Cancer in the Middle East

Sophie Lelièvre – Nutrition and Breast Cell Biology – New Tools

Dorothy Teegarden – Obesity and Energy Metabolism in Breast Cancer Progression

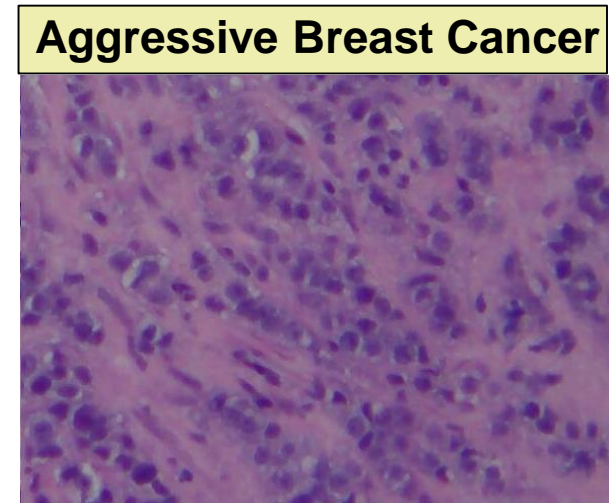
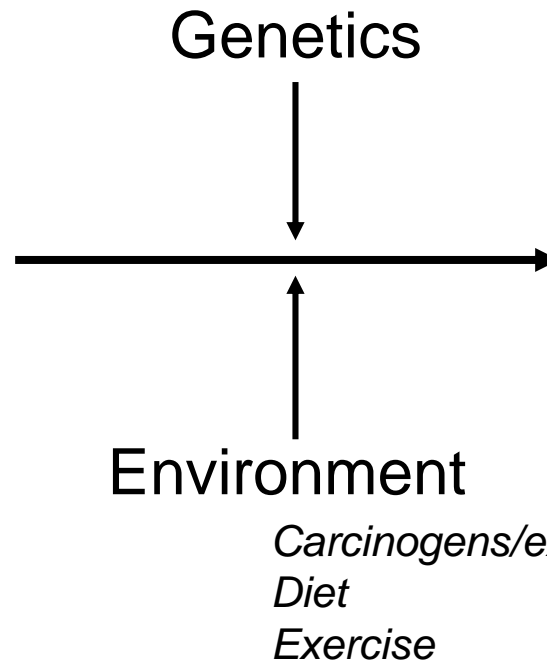


international breast cancer & nutrition
working together for prevention
<http://www.purdue.edu/dp/oncological/ibcn.php>

Sophie Lelièvre, Leader, Basic Medical Sciences

Connie M. Weaver, Co-Leader, Nutrition Science

<http://www.purdue.edu/dp/oncological/ibcn.php>



Nutrition is anchored in culture

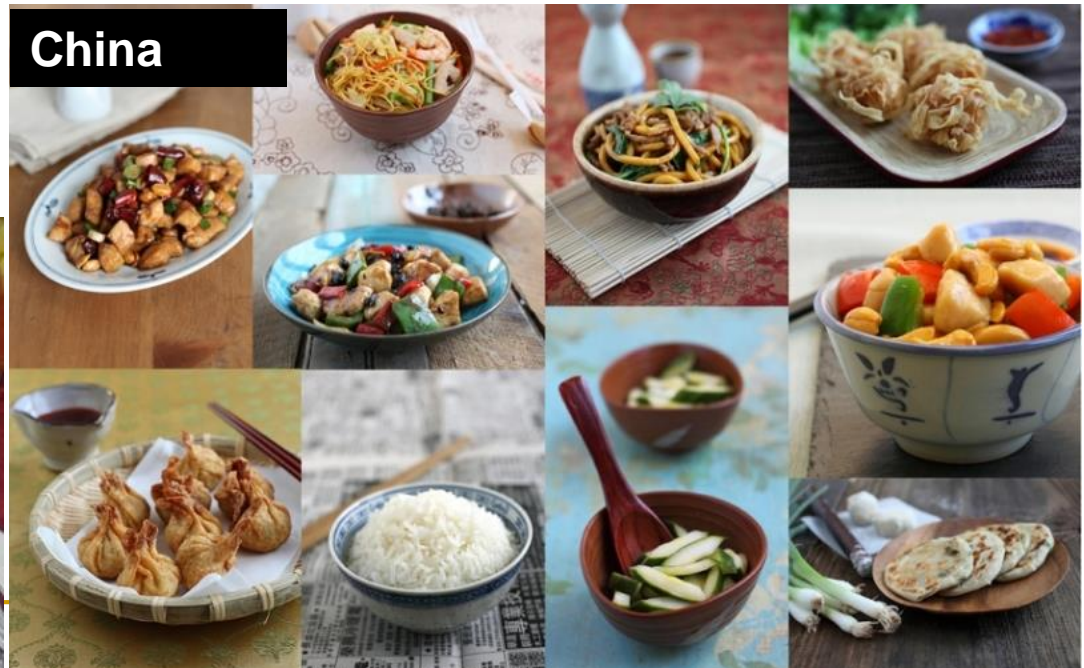
Lebanon



Uruguay



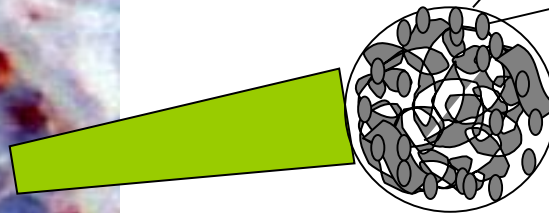
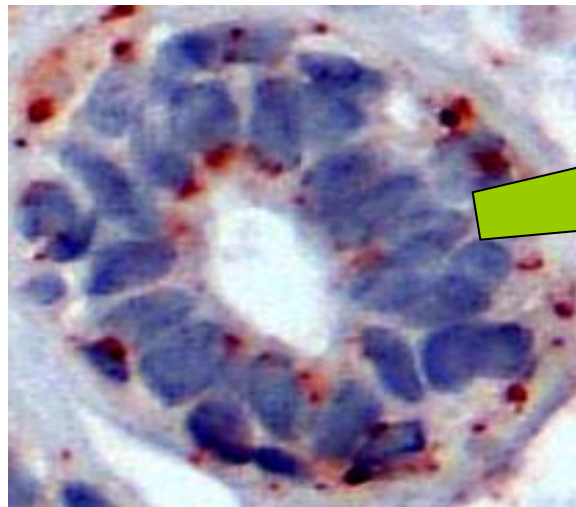
China



Ghana



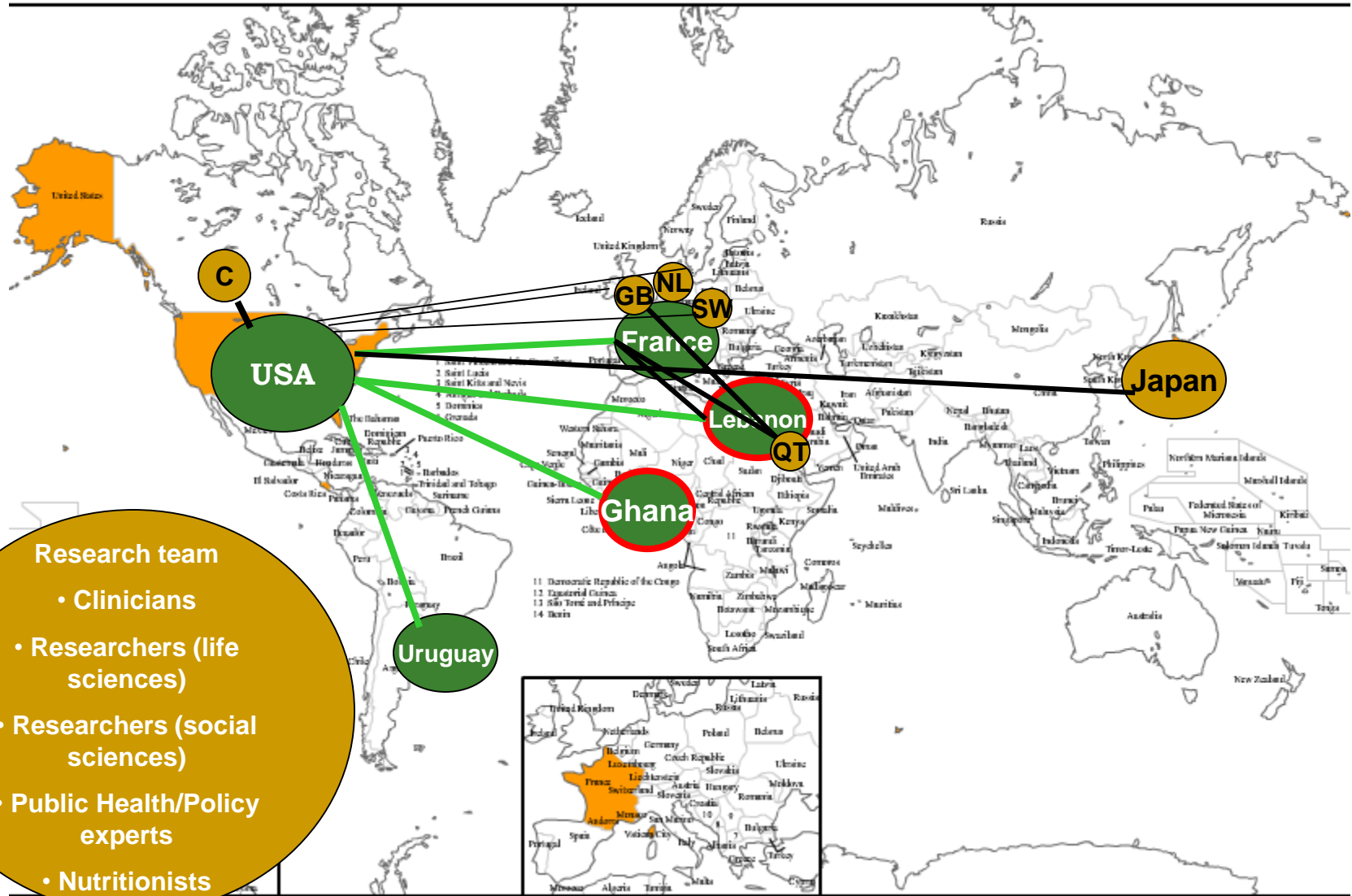
Stem/Progenitor cell theory of the origin of breast cancer subclasses: This requires measure of epigenetic changes at single cell level



Specific chromatin alteration at a define loci

Joseph Irudayaraj, Agricultural and Biological Engineering

IBCN NETWORK



Establishing interdisciplinary teams

Sophie Lelièvre
Basic Medical Sciences

Beatrice Wiafe Addai
Breast Surgeon, Ghana

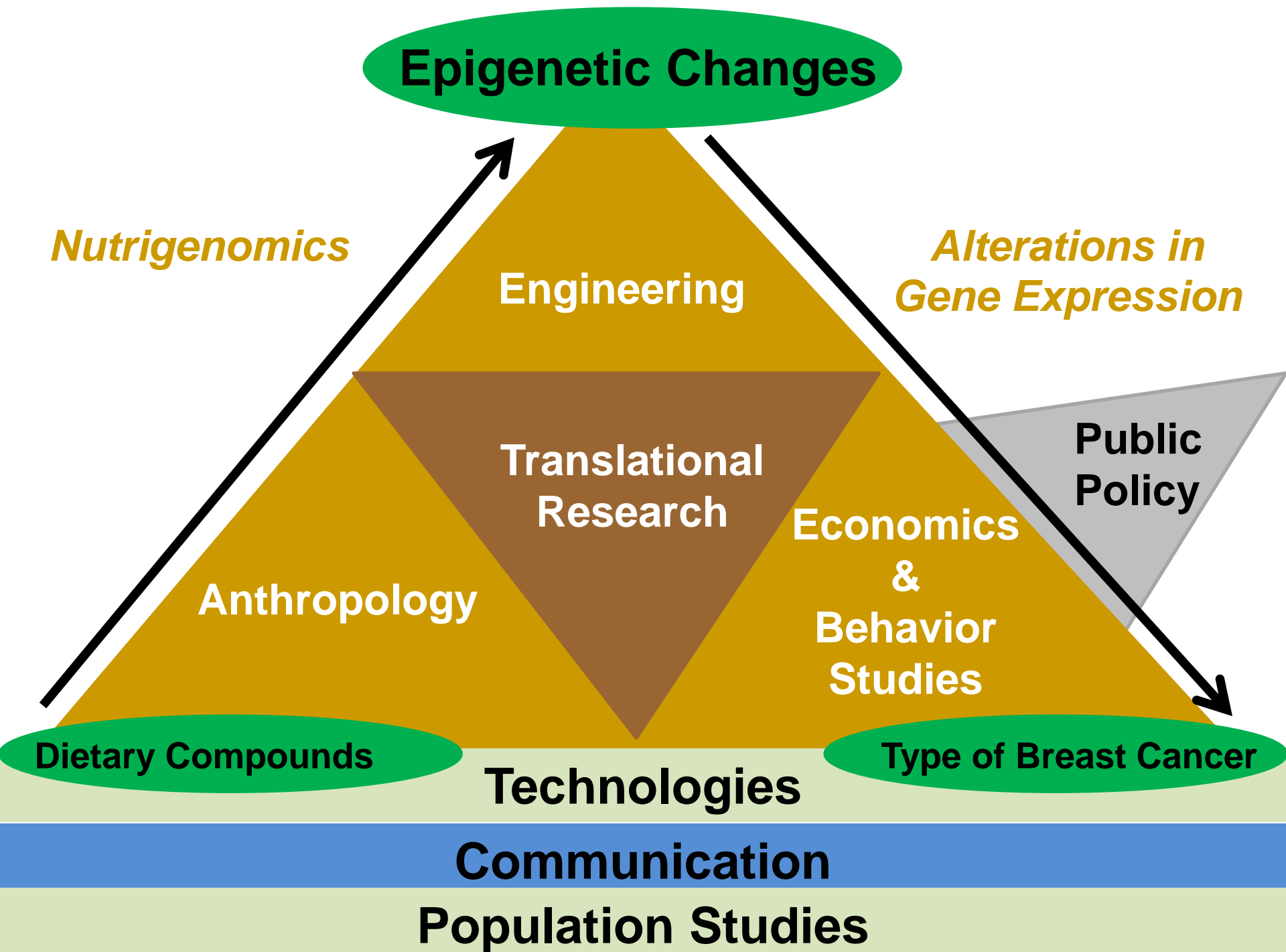
Ellen Gruenbaum
Anthropology

Laurence Gabriel
University of Rennes, France

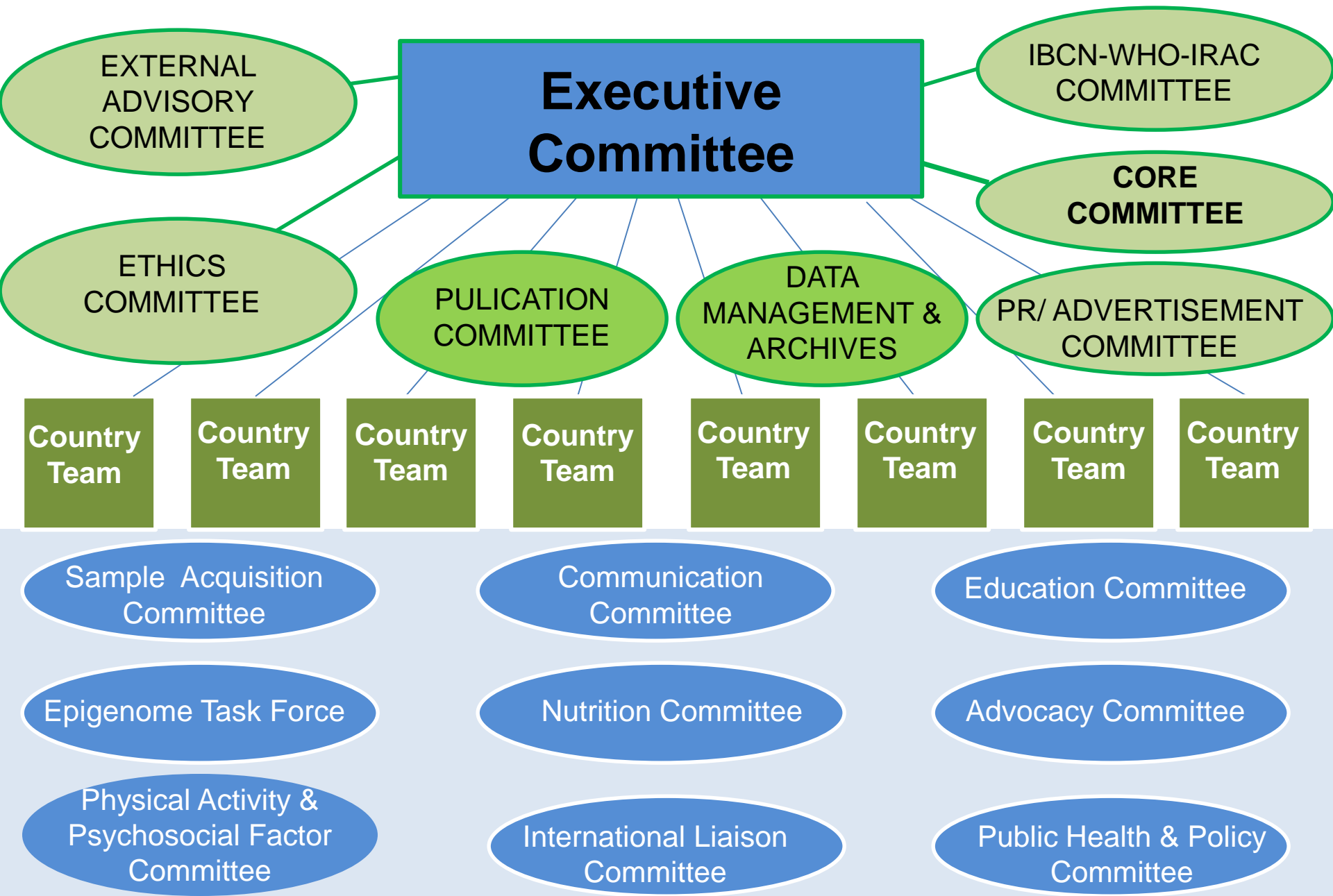


Ghana





International Breast Cancer and Nutrition Project-Organizational Chart



Annual International Symposia on Nutrition and Breast Cancer

October 16-18, 2014 at Purdue University

Annual Strategic Think Tank Retreats with Country Partners

AN IBCN PROJECT

Feed The World Well: International Breast Cancer and Nutrition.

Nutrition has been proposed to modulate the risk of developing certain cancers, including breast cancer. Classes of genes may be differently influenced by nutrients depending on the type of epigenetic mechanism targeted by a given nutrient. IBCN focuses on the study of gene-environment data for prevention of breast cancer.

FROM THE PROPOSAL

We address prevention by studying the impact of the environment on gene expression control. This encompasses data describing chemical modifications in the DNA and histones, genome sequencing, epidemiology, populations, and environmental impact. We provide ways for genome and epigenome data to be understood in the context of social determinants.



THE IBCN NUTRIGENOMICS DATABASE

Data Exploration

[Nutrigenomics Experiment Database →](#)

Data Collection

[Experiment Web Forms →](#)



THE IBCN EPIGENETICS DATABASE

Data Exploration

[Epigenetics Experiment Database →](#)

IBCN Gene Data from Encode

[Genes →](#)

[Gene Variants →](#)

[Cell Lines and Tracknames →](#)

[Modification Positions →](#)

Genome Browser for Modifications

[User Guide I →](#)

[User Guide II →](#)

Data Collection

[Experiment Web Forms →](#)

OUR IBCN DATABASES

- * genetic and epigenetic modifications of genes involved in breast cancer onset
- * epigenetic mechanisms by which environmental factors modulate known genes
- * analysis from different viewpoints: nutrition, genetic, epigenetic, environment, social determinants

Build Infrastructure

- Bylaws for interaction
- Internal Steering and External Advisory Committees
- Cyberinfrastructure to facilitate integration of data and workflow
- Establish student training reciprocity

Grants

- Keck grant
- NIH Conference grants
- Policy grants
- Allen Foundation grant in communication
- Training grants in bioethics
- Susan G. Komen health breast tissue biorepository

Publication describing collaboration:

Publication describing collaboration:

Lelièvre SA, Weaver CM. Global nutrition research: nutrition and breast cancer prevention as a model. Nutr Rev doi:10.1111/nure.12075 70:1-11, 2013.