



The Convergent Innovation Webinar Series

Pulse Program: Inventing “One-World” Food Solutions for Sustainable Development and Affordable Healthcare

Diet and Health: Is There a Better Model?



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May 10, 2018

11 am EST / 7:30 pm IST
(1.5 hrs in length)

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Co-chairs & Moderators: Laurette Dubé (MCCHE) and Bob Chapman (NRC)

ABSTRACT

Agriculture and food are in a value crisis. The public’s perception that modern industrial agriculture is a major cause of environmental damage and food the cause of chronic disease has undermined their confidence in science itself. Solving the problems of food production, food safety, nourishment and sustainability will require a much more detailed understanding of the complex interplay between human health and food. In effect agriculture must move from the simplifying reductionist principles of chemistry to the integrative principles of biology. Biology as the outcome of relentless Evolutionary selection can provide instruction for the future of agriculture. As life sciences interrogate organisms in genomic detail, lactation and its remarkable product, milk provide unique insight into the evolution of animals and their food. Most organisms evolved in part to avoid being eaten. Agriculture’s success has been to select and process commodities into safe, stable and delicious foods. Agriculture’s challenge now is to enhance their nutritional quality and the question is how? The Rosetta stone of food and nourishment is mammalian lactation and milk. Milk as a complete and comprehensive diet is the product of over 200 million years of symbiotic co-evolution between a mammalian mother and her infant. The tools of modern science from genomics to molecular anthropology can be leveraged to understand this remarkable process. Molecular insights from sugars to oligosaccharides, proteins to encrypted peptides, structures from globules to micelles, intact cells from stem cells to immune cells represent just the first wave of discoveries of how complex and functional components can be in the diet. For example, mothers literally recruit a unique group of bacteria to populate their baby’s intestine and provide them a selective food source, complex oligosaccharides, to keep them and their baby ‘happy’. In parallel with discoveries of nutritional targets and component bioactivities are new insights into principles of sustainability. The complex competition between maternal cost and infant benefit for milk’s resources are a vivid model for cost versus benefit relationships.

ABOUT THE SERIES

The **Convergent Innovation Webinar Series** will feature cutting edge science, technology and innovation in agriculture, food and health domains as well as in the behavioural, commercial, social and complexity sciences. These, combined with traditions from around the world, will altogether articulate an interdisciplinary research and action strategy to transform agricultural products like pulses from undifferentiated commodities into higher-margin whole and value-added food products that support sustainable development and affordable healthcare. Progressively, programs in the CI-Food webinar series will be developed for other agricultural products with high CI potential, e.g., dairy, fruits, vegetables, and others.

Global Pulse Innovation Platform: An Ecosystem to Transform Traditional and Modern World through Food



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