



# Human Nutrition, Environment and Health

October 14–18, 2015

China World Hotel | Beijing | China

Scientific Organizers: Martin Kussmann, Hannelore Daniel  
and Jacqueline Pontes Monteiro

*Organized in collaboration with BGI. Part of the Keystone Symposia Global Health Series, supported by the Bill & Melinda Gates Foundation.*



*Diet is the most important environmental factor for maintaining health and preventing disease. The goals and outcomes of this meeting include: 1) Bringing together researchers from traditionally rather separated disciplines: nutrition, (gen)omics, clinics, physiology, epidemiology, analytics, biomathematics; 2) Advancing nutrition research as a quantitative, holistic and molecular science; 3) Reviewing/challenging classical pre-clinical models and clinical study designs and incorporating improved translational in vitro and in vivo models, human intervention study designs, and innovative new tools/technologies for molecular phenotyping and capture of human diet and lifestyle; and 4) Connecting basic laboratory science to patient- and consumer-relevant outputs in terms of personalized dietary/nutritional counseling and monitoring/diagnostics.*

## *Session Topics:*

- The Interaction between Human Genome, Diet and Environment
- Translational Models for Human Nutrition and Health
- Human Nutritional and Lifestyle Interventions
- Capturing and Monitoring Human Individuality
- From Nutrigenomics to Systems Nutrition
- Nutrition 2.0 – Translation into Solutions for Human Health
- Global Nutrition and Sustainability
- Joint Session with Grand Challenges and Keystone Symposia  
*plus one workshop*

*Note that special subsidized registration rates are available to meeting participants in China.*



Special registration rates are available for participants in China.

Note that abstracts can continue to be submitted online through the discounted registration deadline, and you can register up until the meeting begins.

**Discounted Registration Deadline: September 10, 2015**

For additional details, visit [www.keystonesymposia.org/15T1](http://www.keystonesymposia.org/15T1).

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# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Human Nutrition, Environment and Health (T1)

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Global Health Travel Award Deadline: May 12, 2015 / Abstract & Scholarship Deadline: June 16, 2015 / Abstract Deadline: July 14, 2015 / Discounted Registration Deadline: September 10, 2015

### WEDNESDAY, OCTOBER 14

#### Arrival and Registration

### THURSDAY, OCTOBER 15

#### Welcome and Keynote Address

- \***Martin Kussmann**, Frontiers Media S.A., Switzerland
- \***Jacqueline Pontes Monteiro**, Universidade de São Paulo, Brazil
- \***Hannelore Daniel**, Technische Universität München, Germany
- José M. Ordovás**, Tufts University, USA  
*Human Health, Genes and Diet*

#### The Interaction between Human Genome, Diet and Environment

- \***Martin Kussmann**, Frontiers Media S.A., Switzerland
- Claudio Franceschi**, University of Bologna, Italy  
*Genes and Environment for Human Longevity*
- Leroy E. Hood**, Institute for Systems Biology, USA  
*Systems Medicine and Proactive P4 Medicine: Transforming Healthcare and Nutrition through Wellness*
- Liping Zhao**, Shanghai Jiao Tong University, China and Rutgers University, USA  
*Dietary Modulation of Gut Microbiota for Obesity Management: From Association to Causation to Translation*
- Alexander M. Vaiserman**, Institute of Gerontology, Ukraine  
*Short Talk: Developmental Nutritional Programming of Type 2 Diabetes: Evidence from the Ukraine Famine of 1932-1933*

#### Translational Models for Human Nutrition and Health

- \***Kendal Hirschi**, Baylor College Medicine, USA
- Vijayalakshmi Varma**, National Center for Toxicological Research, FDA, USA  
*Adipocyte Responses to Fructose: A Characterization Using Systems Biology Approaches*
- Aldons J. Lusis**, University of California, Los Angeles, USA  
*Systems Genetics Analysis of Host-Gut Microbiota Interactions*
- Patrick J. Stover**, Cornell University, USA  
*In Search of a Common Pathway for Folic Acid-Responsive Neural Tube Defects, Neurodegeneration and Cancer*
- Sumei Hu**, Institute of Food and Health, University College Dublin, Ireland  
*Short Talk: The Impact of Milk Derived Bioactives on Glycemic Management*

#### Poster Session 1

### FRIDAY, OCTOBER 16

#### Human Nutritional and Lifestyle Interventions

- \***Patrick J. Stover**, Cornell University, USA
- Hannelore Daniel**, Technische Universität München, Germany  
*Characterising Normal Human Metabolism*
- Ben van Ommen**, TNO, Netherlands  
*Diet, Systems Flexibility and My Optimal Health*

**Jacqueline Pontes Monteiro**, Universidade de São Paulo, Brazil  
*The Genomics of Micronutrient Requirements*

**Robert Zeigler**, IRRI, USA  
*Rice as a Tool to Improve Nutrition for the World's Poor*

**Marie Pier Scott-Boyer**, University of Trento Centre for Computational Biol, Italy  
*Short Talk: Network-Based Analysis of Cofactor-Protein Interactions in Nutrition and Complex Diseases*

**Namita Parikshit Mahalle**, Deenanath Mangeshkar Hospital and Research Center, India  
*Short Talk: A Study of Nutritional Factors and its Relation with Insulin Resistance and Inflammatory Markers in Patients with Coronary Artery Disease in Indian Population*

#### Capturing and Monitoring Human Individuality

- \***Chris Evelo**, Maastricht University, Netherlands
- Qiang Tian**, USA  
*Wellness, Diseases and P4 Medicine*
- Rui Chen**, Stanford University, USA  
*Longitudinal Omics in Humans*
- Rick Weiss**, Viocare, Inc, USA  
*Self-Monitoring of Diet and Lifestyle*
- Karsten Hiller**, University of Luxembourg, Luxembourg  
*Short Talk: Combining Dried Blood Spots with Stable-Isotope Tracers to Profile Dynamics of Glucose Metabolism in Human Subjects*

### SATURDAY, OCTOBER 17

#### From Nutrigenomics to Systems Nutrition

- \***Jim Kaput**, Nestlé Institute of Health Sciences, Switzerland
- Martin Kussmann**, Frontiers Media S.A., Switzerland  
*Omics-Rooted Systems Studies of Human Phenotypes*
- Lorraine Brennan**, University College Dublin, Ireland  
*Metabotyping in Nutrition Research*
- Marijana Radonjic**, EdgeLeap, Netherlands  
*From Disconnected Data to Emerging Insights: Unraveling Complexity of Food-Health Interactions*
- Paloma K. Barrera**, INMEGEN, Mexico  
*Short Talk: Antioxidant-Related Gene Expression Changes by Cocoa Polyphenols Intake*
- Xiaojie Tan**, Waters, China  
*Short Talk: Markers of Health: Molecular Phenotyping Unveils the Healthy Biosignature of "Omega-3" Transgenic Mice*

#### Nutrition 2.0 - Translation into Solutions for Human Health

- \***Jacqueline Pontes Monteiro**, Universidade de São Paulo, Brazil
- Juan B. Ochoa**, Nestlé Health Science, USA  
*Personalized Nutrition in Critical Care*
- Xu Lin**, Shanghai Institutes for Biological Sciences Chinese Academy of Sciences, China  
*Genetic Variants, Nutrient-Related Biomarkers on Metabolic Diseases in Chinese*

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**Maria-Carlota Dao**, Institute of Cardiometabolism and Nutrition, ICAN, France

*Gut Microbiota and Cardiometabolic Risks*

**Michael Fenech**, CSIRO Food and Nutrition, Australia

*Short Talk: Plasma Micronutrient Levels and Telomere Length in Children*

### Poster Session 2

### SUNDAY, OCTOBER 18

#### Global Nutrition and Sustainability

\***Ben van Ommen**, TNO, Netherlands

**Jim Kaput**, Nestlé Institute of Health Sciences, Switzerland

*Enabling Nutrient Security and Sustainability through Systems Research*

**Nina V. Fedoroff**, Pennsylvania State University, USA

*The Safety, Nutritional Value, and Sustainability of Organically and Conventionally Grown Food*

#### Panel Discussion: Perspectives and Needs for research in the Food, Diet and Health Relationship

\***Martin Kussmann**, Frontiers Media S.A., Switzerland

**Jim Kaput**, Nestlé Institute of Health Sciences, Switzerland

**Ben van Ommen**, TNO, Netherlands

**Lorraine Brennan**, University College Dublin, Ireland

**Claudio Franceschi**, University of Bologna, Italy

#### Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

#### Workshop

\***Jacqueline Pontes Monteiro**, Universidade de São Paulo, Brazil

**G. Bhanuprakash Reddy**, National Institute of Nutrition, India

*Influence of Micronutrients on Biochemical Pathways Involved in Diabetic Complications*

**Padmapriyadarsini Chandrasekaran**, National Institute for Research in Tuberculosis, India

*Dietary Intake, Nutritional Status and Relationship to Serum Lipids among Antiretroviral Naïve HIV-Infected Children in South India*

**Neil A. Hanchard**, Baylor College of Medicine, USA

*Dna Methylation Changes in Severe Childhood Malnutrition*

**Shuxin Han**, Case Western Reserve University, USA

*Circadian Control of Bile Acid Synthesis by a KLF15-Fgf15 Axis*

**Efrat Monsonego Ornan**, Hebrew University of Jerusalem, Israel

*Nutritional Aspects of Skeletal Development*

**Abena S. Amoah**, Noguchi Memorial Institute for Medical Research, Ghana

*Breastfeeding Duration and Asthma in Urban Schoolchildren in Ghana*

**Edwin Andres Higueta**, Corporación Universitaria Remington, Colombia

*Immunomodulation of T Cells Subpopulations and NK Cells in Elderly Adults during a 12 Weeks Intervention with a Nutritional Complement Enriched with Biotechnologically Ganoderma lucidum Extracted Beta Glucans (ISRCTN 53126301)*

**Pieter Johan Giesbertz**, Technische Universität München, Germany

*Metabolomic Signatures of Obesity and Diabetes Revealed in Corresponding Genetic Mouse Models*

#### Joint Session with Grand Challenges and Keystone Symposia

**Godfrey Oakley**, Emory University, USA

*Epidemic Folic Acid Preventable Spina Bifida and Anencephaly--Important Preventable Contribution to Perinatal, Neonatal, Infant and Under 5 Child Mortality*

**Daniel L. Marks**, Oregon Health & Science University, USA

*A Comprehensive Approach to Healthy Birth, Growth and Development*

### MONDAY, OCTOBER 19

#### Departure