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.
**KEYSTONE SYMPOSIA**
on Molecular and Cellular Biology

**Human Nutrition, Environment and Health (T1)**

October 14-18, 2015 • China World Hotel • Beijing, China

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

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


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**WEDNESDAY, OCTOBER 14**

Arrival and Registration

**THURSDAY, OCTOBER 15**

Welcome and Keynote Address

* Martin Kussmann, University of Auckland, New Zealand
* Jacqueline Pontes Monteiro, Universidade de Sao Paulo, Brazil
* Hannelore Daniel, Technische Universität München, Germany
* José M. Ordovás, Tufts University, USA

The Interaction between Human Genome, Diet and Environment

* Martin Kussmann, University of Auckland, New Zealand
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

Dietary Modulation of Gut Microbiota for Metabolic 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
* Ben van Ommen, TNO, Netherlands

Diet, Systems Flexibility and My Optimal Health

* Jacqueline Pontes Monteiro, Universidade de Sao 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, University of Auckland, New Zealand

Omics-Rooted Systems Studies of Human Phenotypes

Lorraine Brennan, University College Dublin, Ireland

Metabotyping in Nutrition Research

Marjana 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 Sao 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

* Session Chair † Invited but not yet accepted  Program current as of June 18, 2017. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit [www.keystonesymposia.org/16T1](http://www.keystonesymposia.org/16T1).
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

Pieter Johan Giesbertz, Technische Universität München, Germany
Metabolic 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

Workshop

Jacqueline Pontes Monteiro, Universidade de São Paulo, Brazil
G. Bhanuprakash Reddy, National Institute of Nutrition, India
Padmapriyadarsini Chandrasekaran, National Institute for Research in Tuberculosis, India
Neil A. Hanchard, Baylor College of Medicine, USA
Shuxin Han, Case Western Reserve University, USA
Efrat Monsonego Ornan, Hebrew University of Jerusalem, Israel
Abena S. Amoah, Noguchi Memorial Institute for Medical Research, Ghana
Edwin Andres Higuita, Corporación Universitaria Remington, Colombia

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

Gut Microbiota and Cardiometabolic Risks

Short Talk: Plasma Micronutrient Levels and Telomere Length in Children

Metabolic Signatures of Obesity and Diabetes Revealed in Corresponding Genetic Mouse Models

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

A Comprehensive Approach to Healthy Birth, Growth and Development

For the most up-to-date details, visit www.keystonesymposia.org/16T1.