Expanding the evidence base for genome-directed personal nutrition.

Visit isnn2015.org for latest information.
The time has come for the use of nutrigenomics in practice, but with which specific information, and what interventions should follow? This meeting will be the place to talk to the experts, learn about best practices, and network with colleagues from around the world.

NUTRIGENETICS IN PRACTICE* ............ 11:00 a.m. – 3:30 p.m.

**Intensive training course** *(for licensed professionals only)*

Martin Kohlmeier, Olivia Dong

- Primer of genomics terms and principles
- Ethical and legal frameworks
- Inventory of high-utility gene variants
- Genotype-based nutrition counseling

*Special registration required.

ISNN board meeting *(by invitation only)* ............ 8:30 p.m.

Building the tools for nutrigenomic research

Opening of the 9th ISNN Congress Raffaele De Caterina

The significance of nutrigenetics and nutrigenomics for clinical practice Martin Kohlmeier

A lifetime of genetic research Oliver Smithies

Individual micronutrient inadequacy promotes diseases of aging Bruce Ames

Conversation: What young researchers should know

Speakers’ dinner *(by invitation only)* ............ 7:00 p.m.

Session locations are noted by colored circles throughout the schedule. Signs will also be posted in the Inn.
MONDAY May 18th

MORNING SESSION ........................................... 8:00 – 10:00 a.m.

Squaring ethics, privacy, law and policy

Introduction Eric Juengst
Current legal protections of genomic information in the US
Sonia Suter
Balancing harms and benefits of nutrigenetics Ulf Görman
Beware the informational overload of healthcare providers
Richard Sharp
Facilitator-led conversation #ISNN15lawethics

Break | meet with poster presenters .................................. 10:00 a.m.

PLENARY SESSION ........................................ 10:40 – 11:40 a.m.

Genetic variation of one-carbon metabolism in health and disease

Optimal one-carbon nutrition Steven Zeisel
MTHFR deficiency: implications for folate intake at both ends of the spectrum Rima Rozen
Genomic variation in one-carbon metabolism and cardiovascular diseases Abbas Dehghan
Panel discussion Zeisel, Rozen, Dehghan, Niculescu #ISNN15onecarb

Breakout sessions .................................... 11:45 a.m. – 1:30 p.m.
Boxed lunches will be served.

Tailoring essential fatty acid intakes

Background and charge Hooman Allayee
Invited commentary Mihai Niculescu
Discussions and preparation of draft report #ISNN15efa

PLENARY SESSION ........................................... 2:00 – 2:45 p.m.

Individual folate intake requirements

Background and charge Natalia Krupenko #ISNN15fol
Invited commentary Rima Rozen
Discussions and preparation of draft report

Break ................................. 1:30 p.m.

PLENARY SESSION ...................................... 7:30 p.m.

Congress dinner

AFTERNOON SESSION ..................................... 3:00 – 5:30 p.m.

Personal nutrition in practice

Introduction Martin Kohlmeier
Does personalizing improve dietary intake: lessons from the Food4me study John Mathers
Using genetic information for tailoring lipid-lowering interventions Peter Jones
Building a nutrigenetics practice Ahmed El-Sohemy
Computer-based personal nutrition guidance Martin Kohlmeier
The Network of Centers for Genetics, Nutrition, and Fitness for Health Artemis Simopoulos #ISNN15persnut

Campus walking tour .......................... 5:30 p.m.

Congress dinner ............................. 7:30 p.m.
TUESDAY May 19th

MORNING SESSION ........................................... 8:00 – 10:00 a.m.

Getting nutrigenetic interpretations right

Introduction  Saroja Voruganti
Empirical databases for nutrigenetics and nutrigenomics:
Food4me  Alfredo Martinez
What population studies can and cannot tell us  Kari North
Why we need nutrigenetics in intervention studies that fail
Steven Zeisel
Innovative biosystems approaches in nutrigenetic research
Ben Van Ommen
How metabolomics potentiates nutrigenomics
Susan Sumner  #ISNN15interp

Break | meet with poster presenters .......................... 10:00 a.m.

Award-winning poster contributions ........................ 10:40 – 11:30 a.m.

Breakout sessions .............................................. 11:45 a.m. – 1:30 p.m.
Boxed lunches will be served.

Genotype-directed weight management

Background and charge  Alfredo Martinez
Invited commentary  Lu Qi
Discussions and preparation of draft report  #ISNN15wt

Individual caffeine tolerance

Background and charge  Raffaele De Caterina
Invited commentary  Ahmed El-Sohemy
Discussions and preparation of draft report  #ISNN15caff

PLENARY SESSION ............................................. 2:00 – 2:45 p.m.

Reporting back on individual caffeine tolerance
Raffaele De Caterina  #ISNN15caff
Reporting back on genotype-specific weight management
Alfredo Martinez  #ISNN15wt

Break ........................................................................ 2:45 p.m.

AFTERNOON SESSION ....................................... 3:00 – 5:00 p.m.

Epinutrigenomics for practical use

Introduction  Folami Ideraabdullah
Nutritional and genetic effects on imprinted genes
and repeat elements  Paul Haggarty
Challenges in Population Nutriepigenomics
Karin Michels
Nutri-Epigenomics — A tool for applied nutrition
in cancer prevention?
Clarissa Gerhäuser
Beyond “wrong” and “right” in Nutriepigenetics
Mihai Niculescu
Facilitator-led conversation: Practical use?  #ISNN15epigen

Congress Conclusion ............................................ 5:15 p.m.

Epilogue  Alfredo Martinez
Announcement of the 2016 ISNN Congress  Ram Reifen

We hope to see you next year at the
10th Congress of the ISNN
in Tel Aviv, Israel, May 23 – 26, 2016.
**Keynote Speakers**

**Bruce Ames, PhD**
Senior Scientist at Children's Hospital Oakland Research Institute and director of their Nutrition & Metabolism Center; Professor Emeritus of Biochemistry and Molecular Biology, University of California, Berkeley. His Triage Theory suggests that evolution tuned metabolism to preferentially retain nutrients in moderate deficiency to ensure survival and reproduction.

**Oliver Smithies, DPhil**
Excellence professor of Pathology and Laboratory Medicine, University of North Carolina at Chapel Hill. Nobel Prize in Physiology or Medicine for the discovery of principles for introducing specific gene modifications in mice by the use of embryonic stem cells. Introduced starch as a medium for protein electrophoresis and developed homologous recombination of transgenic DNA with genomic DNA.

**Hooman Allayee, PhD**
Associate Professor of Preventative Medicine, Department of Preventative Medicine, University of Southern California Keck School of Medicine, Los Angeles, California. ISNN President-elect. His research focuses on integrative genetic and genomic approaches to understanding cardiovascular disease, diabetes, and obesity.

**Raffaele de Caterina, MD, PhD**
Professor of Cardiology and Director for the University Cardiology Division “G. D’Annunzio” University, Chieti, Italy; past President of ISNN. His areas of research include genetic determinants of cognition to caffeine drinking, inflammation, and cardiovascular disease.

**Abbas Dehghan, MD, PhD**
Assistant Professor of Epidemiology, Department of Epidemiology, Erasmus Medical Center, Rotterdam, Netherlands. His research focuses on the effect of lifestyle factors and genetic variation on cardiovascular outcomes. He contributed extensively to the Rotterdam Study and several other population studies.

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**Using twitter during ISNN 2015:**

**How to set up a twitter account:**
1. Go to www.twitter.com and click “get started”
2. Enter name, email, and password; click “sign up for twitter”
4. Choose a username (your twitter “handle,” e.g. @username)
6. Click “Sign up.”

**How to use twitter during ISNN2015:**
To share a “tweet,” type your message into the “what’s happening” box on the home screen.

Hashtags (e.g. #ISNN2015) are used at the end of tweets to mark the message and allow for easy searching. They are a way to link your tweet to all other tweets containing that hashtag. For example, you can search #ISNN2015 and see all tweets containing that hashtag.

Tweet comments and/or questions during specific sessions with the corresponding hashtag shown in this program. During Q&A sessions, please use the first tweet to identify and introduce yourself. Your second tweet should include your question. Don’t forget to include the appropriate session hashtag! You can also search twitter for the session hashtag to see what questions have already been asked.

Use the appropriate poster hashtag to comment on particularly interesting poster presentations or to arrange to meet the author.
**Olivia Dong, MPH, RD, LDN**

Doctoral student in Pharmaceutical Therapeutics, Eshelman School of Pharmacy, University of North Carolina at Chapel Hill. Her research focuses on implementing preemptive pharmacogenetics data in the clinical setting. Previous research projects include the effect of low choline on muscle dysfunction, and type 2 diabetes polymorphism genotyping.

**Ahmed El-Sohemy, PhD**

Associate Professor of Nutritional Science, Faculty of Medicine, University of Toronto; Founder and Chief Science Officer of Nutrigenomix Inc., Toronto, Canada. His research goal is to identify biomarkers of dietary exposure and elucidate the genetic basis for variability in nutrient response and dietary preferences.

**Clariissa Gerhäuser, PhD**

Group leader, Cancer Chemoprevention and Epigenomics, German Cancer Research Center, Divisions of Toxicology, Epigenomics, and Cancer Risk Factors, Heidelberg, Germany. Her research interests include epigenetic profiling, breast and prostate cancer, and nutri-epigenetics and cancer prevention.

**Ulf Gorman, PhD**

Emeritus professor of Ethics, worked at Lund University and Jönköping University, Sweden. His research includes bioethical questions with relation to personalized nutrition, recently in Food4Me, DNA-based information and intervention, brain-machine interfaces, and ethical questions in the interface between the natural sciences and views of life.

**Paul Haggarty, PhD**

Professor and Head of Lifelong Health Division, Head of Public Health Nutrition Group, Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen UK. His research is centered around epigenetics in cognition, behavior, cancer, and cardiovascular disease, and the effect of folic acid intake in pregnancy on imprinted gene methylation.

**Folami Ideraadullah, PhD**

Assistant Professor of Genetics, University of North Carolina at Chapel Hill School of Medicine. Nutrition Research Institute, Kannapolis, North Carolina. She investigates genetic factors that contribute to diet-related disease susceptibility, to allow for better screening, more effective treatment, and preventative care.

**Peter Jones, PhD**

Professor and Director of Human Nutritional Science and Food Science, Department of Agricultural and Food Sciences, University of Manitoba, Canada; Chair of the Cooperative Advancement of Plant Sterols in Canada. His research focuses on dietary determinants of cholesterol biosynthesis, absorption, and turnover, as well as mechanisms of plant sterols.

**Eric Juengst, MA, PhD**

Dr. Juengst holds his Ph.D. in Philosophy, but has spent his career in medical academia studying ethical and conceptual issues in human genetics and genomics. From 1990-1994 he directed the Ethical, Legal, and Social Implications program of the U.S. Human Genome Project at NIH, and has since led a series of NIH-funded studies of challenges raised by the clinical integration of genomics and the emergence of “precision medicine.”
**SPEAKERS**

**Marin Kohlmeier, MD, PhD**
Research professor, Department of Nutrition, Schools of Medicine and Public Health, University of North Carolina at Chapel Hill and UNC Nutrition Research Institute, Kannapolis, North Carolina; Secretary, ISNN. He researches genetic variation as a modulator of nutrient disposition and the translation of nutrigenetic knowledge into clinical practice.

**Natalie Krupenko, PhD**
Assistant Professor, Nutrition Research Institute, Kannapolis, North Carolina. Dr. Krupenko’s research focuses on the role of folate in promoting health and preventing disease in humans, with the goal of determining the best ways to utilize health-protective properties of folate and prevent adverse effects.

**Alfredo Martinez, MD, PhD**
Professor of Nutrition, Co-director of the Institute of Food and Nutritional Sciences, University of Navarra, Pamplona, Spain. President of ISNN. Areas of research include nutritional and clinical interactions between nutrition and genetics, nutritional and hormonal control in obesity, and nutritional utilization of functional foods.

**John Mathers, PhD**
Professor of Human Nutrition, Director of the Human Nutrition Research Centre, Newcastle University, Newcastle on Tyne, U.K. Areas of research include Food4Me personalized nutrition, the LIVEWELL program, nutrition and the biological process of aging, and mechanisms of DNA methylation.

**Karin Michels, MPH, ScD, PhD**
Associate Professor of Obstetrics, Gynecology, and Reproductive Biology, Harvard Medical School; Associate Professor, Department of Epidemiology, Harvard School of Public Health, Boston, Massachusetts. She currently researches effects of environmental stressors on DNA methylation in cord blood and placenta.

**Mihaic Niculescu, MD, PhD**
Assistant Professor, Department of Nutrition, Kannapolis, NC; Founder and CEO, Advanced Nutrigenomics LLC; Chief Scientific Officer, Nutrigene Sciences LLC. Current research focuses on individualized nutrition and interactions between plant food consumption and human health outcomes.

**Kari North, PhD**
Professor, Department of Epidemiology and Carolina Center for Genome Sciences, Gillings School of Public Health, University of North Carolina at Chapel Hill. She works on genetic epidemiology, statistical genetics, cardiovascular disease, type 2 diabetes, and obesity.

**Lu Qi, MD, PhD**
Associate Professor of Medicine, Harvard Medical School, Associate Professor of Nutrition at Harvard School of Public Health, Boston, Massachusetts. He works on genetic and nutritional epidemiology of obesity and interactions of genetic variants and nutrition in relation to metabolic disorders.
ARTEMIS SIMOPOULOS, MD  
President of the Center for Genetics, Nutrition, and Health, Inc. in Washington D.C., U.S.A. Her research has been on the evolutionary aspects of diet and omega-6/omega-3 balance, with previous work focusing on nutritional, endocrine, and genetic aspects of growth and development throughout the life cycle.

SUSAN SUMNER, PhD  
Director of the NIH Eastern Regional Comprehensive Metabolomics Resource Core at RTI International and senior scientist in the Nanotoxicology program in RTI’s Center for Pharmacology and Toxicology. Her research focuses on early disease biomarker detection in the monitoring of disease progression or therapeutic intervention.

Sonia Suter, JD, MS  
Professor of Law: Torts, Genetics & Law, Law & Medicine, Reproductive Technologies, George Washington University Law School, Washington D.C. Interests and presentations focus on consent in genetics and genomics, and personalized medicine and genetic privacy.

SAROJA VORUGANTI, PhD  
Assistant Professor, Department of Nutrition, University of North Carolina at Chapel Hill and Nutrition Research Institute, Kannapolis, North Carolina. Her research investigates how genetic and nutritional factors impact hyperuricemia, gout, and kidney and cardiovascular disease, with the end goal of finding new treatment options.

Ben Van Ommen, PhD  
Principal Scientist at TNO Earth, Life, and Social Sciences, Netherlands Organization for Applied Scientific Research, Zeist, Netherlands. Dr. Van Ommen’s research is centered on metabolic health and nutrition, specifically developing new personalized health treatment strategies.

STEVEN ZEISEL, MD, PhD  
Kenan Distinguished University Professor, University of North Carolina at Chapel Hill; Director, Nutrition Research Institute. He is a leader in the study of choline and one-carbon metabolism, has identified genetic and hormonal effects modulating requirements of choline, and was the first to demonstrate choline essentiality in humans.

RIMA ROZEN, PhD  
James McGill Professor, Departments of Human Genetics and Pediatrics, McGill University, Montréal, Canada. Her research focuses on common genetic variants in folate metabolism and on the impact of variable dietary folate on complex disorders.

RICHARD SHARP, PhD  
Director of the CTSA Research Ethics Resource, Mayo Clinic Center for Translational Science Activities, Rochester, Minnesota; Director of the Bioethics Program, Mayo Clinic Center for Individualized Medicine, Rochester, Minnesota; Director of the Biomedical Ethics Program, Mayo Clinic, Rochester, Minnesota.
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