

## **Nutrigenomics and the Future of Nutrition Speaker and Moderator Biographies**

### **Setting the Stage: Introduction & Overview**

**Patsy M. Brannon, Ph.D., R.D.**, is professor in the Division of Nutritional Sciences at Cornell University, where she has also served as dean of the College of Human Ecology. Prior to moving to Cornell University, Dr. Brannon was chair of the Department of Nutrition and Food Science at the University of Maryland. She has also served as visiting professor in the Office of Dietary Supplements at the National Institutes of Health (NIH). Her research focus includes nutritional and metabolic regulation of gene expression, especially as relating to human development, the placenta, and exocrine pancreas. She chaired an NIH initiative to plan effective federal research related to the health effects of vitamin D and has also co-chaired the NIH program "Vitamin D and Health in the 21<sup>st</sup> Century: Update Conference" as well as the vitamin D round table associated with the conference. She also served on the National Academies of Sciences, Engineering, and Medicine (previously the Institute of Medicine) Committee to Review Dietary Reference Intakes for Vitamin D and Calcium. Dr. Brannon is a member of a number of professional and scientific associations and has served on the Executive Board of the American Society for Nutrition. She has received numerous awards including the Pew Faculty Scholar in Nutrition award as well as the Centennial Laureate award from Florida State University. She received her Ph.D. from Cornell University in nutritional biochemistry. She is a registered dietitian.

### **Session 1: Nutrigenomics and Chronic Disease Endpoints**

**Naomi K. Fukagawa, M.D., Ph.D. (moderator)**, is director of the USDA Beltsville Human Nutrition Research Center, in Beltsville, MD. Dr. Fukagawa previously served as professor of medicine and acting director of the Gerontology Unit at the University of Vermont, Burlington. Dr. Fukagawa is a board-certified pediatrician and an expert in nutritional biochemistry and metabolism, including protein and energy metabolism; oxidants and antioxidants; and the role of diet in aging and chronic diseases, such as diabetes mellitus. She has served on numerous NIH review panels, served as chairman of the NIH study section for General Clinical Research Centers and completed a 5-year term on the NIH Integrated Physiology of Obesity and Diabetes Study Section. Her membership in the American Society for Clinical Investigation, election as President of the American Society for Clinical Nutrition (American Society for Nutrition), and service as an Associate Editor for the American Journal of Clinical Nutrition, as Editor-in-Chief of Nutrition Reviews, and as Vice-Chair of the 2010 Dietary Guidelines Advisory Committee of the USDA and HHS speak to her national/international recognition. Her clinical training included residency at the Children's Hospital of Philadelphia, University of Pennsylvania, chief residency at the University of Vermont, and nutrition/gerontology fellowships at the Children's Hospital and Beth Israel Hospital, Harvard Medical School. Dr. Fukagawa has maintained an active research laboratory where her work ranges from cells and animals to in vivo studies in human volunteers. Dr. Fukagawa's present work focuses on the impact of environmental stressors (metabolic or physical) on human health, specifically the health effects of exposure to petrodiesel and biodiesel exhaust. She received her M.D. from Northwestern University and her Ph.D. from the Massachusetts Institute of Technology in Cambridge.

**José M. Ordovás, Ph.D.**, is professor of Nutrition and Genetics at Tufts University and a senior scientist at the USDA-Human Nutrition Research Center on Aging at Tufts University in Boston, where he also is the director of the Nutrition and Genomics Laboratory. He is a senior collaborating scientist at the CNIC, and IMDEA Alimentación (Madrid, Spain). Dr. Ordovás' research focuses on

the genetic and epigenetic factors predisposing to cardiovascular disease and obesity and their interaction with the environment and behavioral factors with emphasis on diet. He has published over 770 scientific articles in peer review journals and written several books on these topics. He is considered one of the most distinguished world experts in gene-diet interactions related to cardiovascular traits. Moreover, he has trained in his laboratory ~60 scientists from all continents. Throughout his career, Dr. Ordovás has received multiple honors for his scientific achievements including the USDA Secretary's Award, the Centrum American Nutrition Society Award, the Danone Foundation Award, and the Gold Medal of the Spanish Society of Cardiology. He has been awarded an honorary degree in Medicine bestowed by the University of Cordoba in Spain and he is a Member of the Spanish Royal Academies of Sciences, Medicine, Nutrition and Pharmacy. He serves on multiple editorial, advisory, peer review and steering committees. Dr. Ordovás was educated in Spain at the University of Zaragoza where he completed his undergraduate work in Chemistry and his Ph.D. in Biochemistry. He did postdoctoral work at MIT, Harvard, and Tufts.

**Douglas C. Wallace, Ph.D.**, is the Michael and Charles Barnett Endowed Chair in pediatric mitochondrial medicine and metabolic disease, the director of the Center for Mitochondrial and Epigenomic Medicine at Children's Hospital of Philadelphia, and a professor in the Department of Pathology and Laboratory Medicine at the University of Pennsylvania. He founded the field of human mitochondrial DNA (mtDNA) genetics and demonstrated that mtDNA variation has profound implications for human health and disease, the origins and ancient migrations of our ancestors, human and animal adaptation, and perhaps the origin of species. In recognition of his seminal contributions to human and mammalian genetics, Wallace was elected to membership in the National Academy of Science in 1995, the American Academy of Arts and Sciences in 2004, and the National Academy of Medicine in 2009. Wallace was awarded the William Allan Award by the American Society of Human Genetics in 1994, the Passano Award for Mitochondrial Genetics (with G. Attardi) in 2000, the Metropolitan Life Foundation Award for Medical Research in Alzheimer's Disease also in 2000, and the Pasarow Award for cardiovascular disease in 2006. In 2012, he received the Gruber Genetics Prize, the world's highest genetics honor, as well as the American College of Physicians Award for "Outstanding Work in Science as Related to Medicine." In 2015, he was awarded Doctor Honoris Causa, Université Angers, France and was elected to the Accademia Nazionale delle Scienze detta dei XL (National Academy of Sciences of Italy). In 2017, he received the Franklin Institute's prestigious Benjamin Franklin Medal for the Life Sciences and the Paul Janssen Award for Biomedical Research.

**Nathan Price, Ph.D.**, is professor and associate director of the Institute for Systems Biology (ISB) in Seattle, WA. He is also affiliate faculty in the Departments of Bioengineering, Computer Science & Engineering, and Molecular & Cellular Biology at the University of Washington. He is co-founder and on the board of directors of Arivale, Inc. ("Your Scientific Path to Wellness"), which was named as Geekwire's 2016 Startup of the Year. Dr. Price has won numerous awards for his scientific work, including an NIH Howard Temin Pathway to Independence Award, and NSF CAREER award, a young investigator award from the Roy J. Carver Charitable Trust, and he was named as one of the inaugural "Tomorrow's PIs" by Genome Technology and as a Camille Dreyfus Teacher-Scholar. Most recently, he received the 2016 Grace A. Goldsmith Award from the American College of Nutrition, given each year to a researcher under the age of 50 for significant contributions to nutrition science. Dr. Price has published over 120 peer-reviewed scientific publications and serves on editorial boards for many leading scientific journals including *Science Translational Medicine* and *Cell Systems*. Dr. Price also serves on advisory boards for a number of companies and institutes including Roche (personalized medicine division), Cleveland Clinic's Center for Functional Medicine, Sera Prognostics, Inc., the Novo Nordisk Foundation Center for Biosustainability, Trelys,

Inc., and the University of Washington's Public Health Genomics. He is also a fellow of the European Society of Preventive Medicine.

**Claudia R. Morris, M.D., FAAP**, is an associate professor of Pediatrics and Emergency Medicine at Emory University School of Medicine. She is also a pediatric emergency medicine attending physician at Children's Healthcare of Atlanta. Dr. Morris has been involved in sickle cell disease (SCD) research for over 20 years, has a history of NIH, FDA/R01 and industry-sponsored funding, and has led several single and multi-center trials. She has a special interest in translational research that targets inflammation and oxidative stress. From the start of her career, Dr. Morris' research endeavors have focused on nutritional interventions based on specific metabolic pathways that cross disease disciplines, identifying alterations in the arginine metabolome in SCD, thalassemia, asthma, and pulmonary hypertension. She also published the first randomized, blinded, placebo controlled trial of arginine therapy to treat pain in children with SCD. Dr. Morris' efforts have always encompassed an integrative approach to the practice of medicine. She is a firm believer in nutrition as medicine, and appreciates the growing need to address distinctive nutritional requirements provoked by some acute and chronic illnesses, with SCD as an ideal paradigm.

**David H. Alpers, M.D.**, is a professor of Medicine at Washington University. He is a graduate of Harvard College and Harvard Medical School, and received his initial medical training at the Massachusetts General Hospital (MGH), a Harvard teaching hospital. After training in molecular biology at NIH, he returned to the GI Division at the MGH before leaving to become Chief of the Division of Gastroenterology at Washington University School of Medicine, a post he held for 28 years. He has served as editor-in-chief for the *American Journal of Physiology/GI Liver Physiology* and *Current Opinion in Gastroenterology (Small Intestine/Nutrition)*, and as Associate editor for the *Journal of Clinical Investigation* and *American Journal of Clinical Nutrition* (2008-2017), and on the Editorial Board of the *Journal of Biological Chemistry*, *Journal of Gastroenterology*, and many other journals. He is the author of 223 peer-reviewed scientific/clinical papers, and is the senior author of the Manual of Nutritional Therapeutics (6<sup>th</sup> edition 2015), and was an Associate Editor of Yamada's Textbook of Gastroenterology through its first 5 editions. He has served on many Scientific Advisory Committees, including for the MGH (chairman), the Bill and Melinda Gates Foundation (zinc absorption in third world countries), and most recently for the Alimentary Pharmabiotic Centre, University College Cork, Ireland, and the Sackler Center for Biomedicine and Nutrition Research at Rockefeller University. He has been involved for decades as a consultant in drug development on assets related to gastroenterology and nutrition, most often with GlaxoSmithKline (Digestive Diseases), Takeda North America (Digestive Disease Therapeutic Unit), and Pfizer Pharmaceuticals (Rare Disease Research Unit).

**Ahmed El-Sohemy, Ph.D.**, is a professor at the University of Toronto and has held a Canada Research Chair in Nutrigenomics. He earned his Ph.D. in Nutritional Sciences from the University of Toronto and completed a postdoctoral fellowship at Harvard. He returned to Toronto in 2000 to establish a research program in nutritional genomics. The goal of his research is to elucidate the genetic basis for variability in nutrient response on health and performance. Dr. El-Sohemy has published over 130 peer-reviewed articles and has given over 200 invited talks around the world. He is on the editorial board of 10 scientific and medical journals and served as an expert reviewer for more than 30 other journals and 12 granting agencies. He has over 4,200 citations with an H-index of 38. Dr. El-Sohemy has served on Health Canada's Scientific Advisory Board and several international expert advisory panels. He has made numerous appearances on TV, radio and in print media, and was voted one of the top 10 people to watch in 2004 by the *Toronto Star*, Canada's largest daily newspaper, and in 2007 was nominated for Canada's Top 40 Under 40 award. In 2013, Dr. El-Sohemy was named one of the top 10 inventors of the year by University of Toronto and the

following year he was awarded the Centrum Foundation New Scientist Award for Outstanding Research by the Canadian Nutrition Society. Last year he was awarded the Mark Bieber Professional Award by the American College of Nutrition. He is the founder of Nutrigenomix Inc. and Chair's the company's International Science Advisory Board.

## **Session 2: Nutrigenomics Applications: Dietary Guidance and Food Product Development**

**Wendy Johnson, Ph.D., M.P.H., R.D. (moderator)**, is vice president of Nutrition, Health and Wellness at Nestlé USA, past chair of the food and nutrition section of the American Public Health Association, and recognized public health researcher. Dr. Johnson is known for her focus on diverse communities and ensuring moms and parents have the information and resources they need to give their child a great start. In her current role she is charged with setting and implementing the cross-cutting Nutrition, Health and Wellness Strategy for the US Nestlé businesses. She is a member of the advisory board of the Newark Start Healthy Stay Healthy community program, a program that educates families on how to close nutrition gaps for young children. Dr. Johnson received her Ph.D., M.P.H., and B.A. from the University of North Carolina-Chapel Hill.

**Patrick J. Stover, Ph.D.**, is a professor and director of the Division of Nutritional Sciences at Cornell University. He teaches three classes for graduate students: Grant Writing; Translational Research and Evidence-based Policy and Practice in Nutrition; and the B-vitamin metabolism section of Micronutrients: Function, Homeostasis, and Assessment. In 2015, he was elected as a member of the National Academy of Sciences, and in 2014 was elected as a Fellow of the American Association for the Advancement of Science. In 2014, he received the SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities, and the Osborne and Mendel Award for outstanding recent basic research accomplishments in nutrition from the American Society for Nutrition, and a MERIT award from NIDDK-NIH. In 1996, Dr. Stover received the Presidential Early Career Award for Scientists and Engineers from President Clinton, the highest honor bestowed by the U.S. government on outstanding scientists and engineers beginning their independent careers. He has been selected as an Outstanding Educator four times by Cornell Merrill Presidential Scholars. He is editor of the Annual Reviews of Nutrition. He graduated from Saint Joseph's University with a B.S. degree in Chemistry and was awarded the Molloy Chemistry Award at graduation. He received a Ph.D. degree in Biochemistry and Molecular Biophysics from the Medical College of Virginia and performed his postdoctoral studies in Nutritional Sciences at the University of California at Berkeley.

**Steven H. Zeisel, M.D., Ph.D.**, is the Kenan Distinguished University Professor in Nutrition and Pediatrics; former Chairman, Department of Nutrition; Director Nutrition Research Institute and Director UNC Nutrition Obesity Research Center at University of North Carolina at Chapel Hill. The Nutrition Research Institute focuses on using genetic, epigenetic and metabolomic methods to discover why there is individual variation in responses to, and requirements for nutrients. The UNC Nutrition Obesity Research Center is one of twelve centers of excellence in nutrition research funded by the US National Institutes of Health. Dr. Zeisel's research focuses on dietary requirements for the nutrient choline, genetic variation as a source of individual differences in requirements for, and responses to nutrients, effects of choline and folate on stem cell proliferation and apoptosis and resulting effects on cancer and neurogenesis. His research team works with cells, mouse models, and human clinical studies. Dr. Zeisel is the author of more than 250 peer reviewed scientific papers. He is on the editorial board of the FASEB Journal and is an editor of the nutrition textbook "Present Knowledge of Nutrition, Volume 10." Dr. Zeisel is a leader in the development of an innovative nutrition curriculum used by more than 150 medical schools. He received an M.D. from Harvard University (1975) and a Ph.D. from M.I.T. (1980).

### **Session 3: Nutrigenomics: Regulatory, Ethical, and Science Policy Considerations**

**Patsy M. Brannon, Ph.D., R.D. (moderator)** (For a complete biography, see Setting the Stage: Introduction & Overview)

**A. Cecile J.W. Janssens, M.A., M.Sc., Ph.D.**, is professor of Epidemiology in the department of Epidemiology of the Rollins School of Public Health, Emory University, Atlanta, USA. Her research concerns the translation of genomics research to applications in clinical and public health practice, and focuses on the polygenic prediction of multifactorial diseases such as diabetes, cardiovascular disease, and cancer, in particular on theoretical and methodological questions in the assessment of the predictive ability and utility of genetic testing. She regularly publishes about research methodology, research integrity and research ethics. The result of a serendipitous finding, she currently works on a R01 and smaller projects investigating a novel search method for scientific literature. Dr. Janssens has published over 180 papers in international scientific journals. She is a lecturer in graduate and post-graduate courses in local, national and international programs. She has degrees in economics, psychology, and epidemiology and received her Ph.D. from Erasmus University in Rotterdam, the Netherlands.

**Nicholas J. Schork, Ph.D.**, is a Distinguished Professor of Quantitative Medicine at the Translational Genomics Research Institute in Phoenix, Arizona; Professor and Director of Human Biology at the J. Craig Venter Institute (JCVI) in La Jolla, California; and an Adjunct Professor of Psychiatry and Family Medicine and Public Health (Division of Biostatistics), at the University of California, San Diego, in La Jolla, California. Prior to joining JCVI, Dr. Schork held faculty positions at The Scripps Research Institute (TSRI), the Scripps Translational Science Institute, and Case Western Reserve University. Dr. Schork's interests and expertise are in quantitative human biomedical science and integrated approaches to complex biological and medical problems. He has published more than 500 scientific articles and book chapters that consider novel data analysis methodology, study designs, and applications. He has also mentored over 75 graduate student and post-doctoral fellows, has eight patents, and has helped establish 10 different companies in the biomedical science and applications. A member of several scientific journal editorial boards, Dr. Schork is a frequent participant in NIH-related steering committees and review boards. He is director of the quantitative components of a number of national research consortia, including the NIH-sponsored Longevity Consortium and the NIMH-sponsored Bipolar Consortium.

**Sarah Roller, J.D.**, is a partner in the Washington, D.C. office of Kelley Drye & Warren LLP and chair of the firm's Food and Drug Law practice. For more than 25 years, Ms. Roller's practice has focused on the representation of U.S. and global companies and industry trade organizations that are involved in the development, manufacture, labeling and marketing of foods, beverages, dietary supplements and other health products. She represents companies in proceedings before FDA, USDA, FTC, TTB and state governmental bodies, and serves as counsel in litigation matters involving product safety, labeling and advertising regulation. Ms. Roller is a Registered Dietitian and received her Bachelor of Science from the University of Wisconsin-Madison and her Master of Public Health from the University of Minnesota. She received her Juris Doctor from The George Washington University. Ms. Roller has been recognized nationally as a leading practitioner by *Chambers USA* and selected as one of *The Best Lawyers in America*.

**Session 4: *Rethinking the Relationship Between Diet and Health: Can Nutrigenomics Help?* A Panel Discussion**

**Patrick J. Stover, Ph.D. (moderator)** (For a complete biography, see Session 2: Nutrigenomics Applications: Dietary Guidance and Food Product Development)

**A. Cecile J.W. Janssens, M.A., M.Sc., Ph.D.** (For a complete biography, see Session 3: Nutrigenomics: Regulatory, Ethical, and Science Policy Considerations)

**Timothy A. Morck, Ph.D.**, is president and founder of Spectrum Nutrition LLC, his firm that provides expertise in nutrition-related basic/clinical research, product development, regulatory and public policy and global scientific affairs. Dr. Morck's career includes clinical nutrition practice, research, and medical school faculty appointments, scientific association management, entrepreneurial personalized nutrition start-ups, and executive and senior management positions at several global nutrition and pharmaceutical companies. His unique multidisciplinary perspective integrates science and business objectives with a passion for personalized approaches to improve health. Dr. Morck received a B.S. in animal science from Penn State University, followed by M.S. and Ph.D. degrees in nutrition (biochemistry & physiology minors) from Cornell University.

**Douglas C. Wallace, Ph.D.** (For a complete biography, see Session 1: Nutrigenomics and Chronic Disease Endpoints)

**Steven H. Zeisel, M.D., Ph.D.** (For a complete biography, see Session 2: Nutrigenomics Applications: Dietary Guidance and Food Product Development)