



## Iron Screening and Supplementation in Iron-replete Pregnant Women and Young Children

September 28-29, 2016 | NIH Campus, Bethesda, Maryland

### Speakers



**Greg Anderson, B.Sc, M.Sc., Ph.D.**, is the coordinator of the Chronic Disorders Program at the QIMR Berghofer Medical Research Institute in Brisbane, Australia; head of the Iron Metabolism Laboratory at the Institute; and a senior research fellow of the National Health and Medical Research Council of Australia. He has adjunct appointments in the School of Chemistry and Molecular Biosciences and the School of Medicine at the University of Queensland and at Griffith University. He has worked in the area of iron homeostasis for more than 30 years and studies both basic iron homeostasis and human disorders of iron metabolism. Particular research interests include understanding the mechanisms and regulation of intestinal iron absorption, the pathogenesis of iron loading diseases (particularly HFE-related hemochromatosis and beta-thalassemia), the role of iron in bacterial infections (specifically in cystic fibrosis), iron homeostasis in early postnatal life, and mechanisms of hepatic encephalopathy. He is immediate past president of the International Biolron Society and serves on the board of the International Biometals Society. He received his Ph.D. from the University of Queensland and conducted postdoctoral work on the genetics of iron uptake in yeast at the National Institutes of Health.



**Douglas A. Balentine, Ph.D.**, is the director of the Food and Drug Administration's Office of Nutrition and Food Labeling. His duties include overseeing the development of policy and regulations for nutrition labeling and food standards, infant formula, and medical foods. Previously he was the director of nutrition sciences at Unilever. Dr. Balentine's interests include the environment, health, human rights, and science and technology. He received his Ph.D. in food science and nutrition from Rutgers University-New Brunswick.

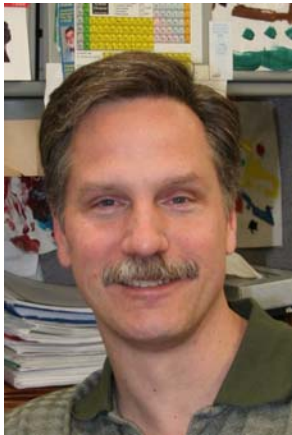


**Gary M. Brittenham, M.D.**, is the James A. Wolff Professor of Pediatrics and a professor of medicine at Columbia University. His investigative efforts involve basic and clinical research in disorders of the red blood cell and of iron metabolism, including thalassemia, sickle cell disorders, and other hemoglobinopathies; the diagnosis, prevention, and treatment of both iron deficiency and iron overload; the evaluation of iron supplements and iron-chelating agents; and the pathogenesis of malarial anemia. His laboratory has helped develop noninvasive means for measurement of iron overload using magnetic susceptometry and magnetic resonance methods and for detection of iron deficiency using optical fiber probe fluorescence spectroscopy. He received his M.D. from Case Western Reserve University School of Medicine and completed a fellowship and residency at Metro Health Center.





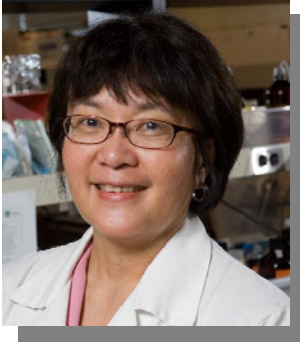
**Paul M. Coates, Ph.D.**, is the director of the Office of Dietary Supplements (ODS) at the National Institutes of Health (NIH). He has established ODS as a strong and authoritative voice for rigorous science in dietary supplements and related areas of nutrition. ODS addresses many of the issues in dietary supplements, from evaluation of the literature to supporting and conducting science and translating the results of that work into reliable and effective information for the public. He also is lead editor of the *Encyclopedia of Dietary Supplements*, now in its second edition, and associate editor of the *American Journal of Clinical Nutrition*. Prior to his tenure at ODS, Dr. Coates was on the faculty of the Children's Hospital of Philadelphia and the University of Pennsylvania School of Medicine. Dr. Coates received the Conrad A. Elvehjem Award from the American Society for Nutrition (ASN) for public service in nutrition, is a fellow of the ASN, and serves on the ASN's board of directors. He received his Ph.D. in human genetics from Queen's University in Canada and postdoctoral training in the Department of Human Genetics and Biometry at University College London.



**Kevin Cockell, Ph.D.**, is the chief of the Nutrition Research Division of the Bureau of Nutritional Sciences in the Food Directorate at Health Canada's Health Products and Food Branch. He also holds adjunct professor appointments at McGill University's School of Dietetics and Human Nutrition and the Department of Biochemistry, Microbiology, and Immunology at the University of Ottawa. Dr. Cockell's primary scientific and research interests include the roles of mineral nutrients in health and disease, metabolic interactions involving mineral nutrients, and nutrient risk assessment. He received his Ph.D. in nutritional sciences from the University of Guelph and completed postdoctoral fellowships in Vanderbilt University School of Medicine's Center in Molecular Toxicology and the Departments of Internal Medicine and Physiology at the University of Manitoba.



**Kathryn Dewey, Ph.D.**, is a distinguished professor in the Department of Nutrition and the director of the Program in International and Community Nutrition at the University of California, Davis. She currently leads an international research consortium that developed and is evaluating a novel approach to enrich diets with lipid-based nutrient supplements designed for prevention of malnutrition in pregnant and lactating women and their children younger than 2 years of age in low-income countries. Her research focuses on maternal and infant nutrition in both low-income and higher income populations, particularly infant and young child feeding, growth during infancy and early childhood, micro- and macronutrient status of infants and young children, maternal nutrition during pregnancy and lactation, risk factors for early lactation difficulties, and interventions to improve nutrition of women and children. She has conducted clinical and community-based research in the United States, Mexico, Costa Rica, Honduras, Guatemala, Peru, Ghana, Malawi, and Bangladesh. Her professional service includes consultation for WHO, UNICEF, PAHO, NIH, and the March of Dimes; membership on scientific advisory committees for the Bill & Melinda Gates Foundation and the UK Medical Research Council; and serving as President of the Society for International Nutrition Research and of the International Society for Research on Human Milk and Lactation. She received her Ph.D. in biological sciences from the University of Michigan.



**Naomi K. Fukagawa, M.D., Ph.D.**, is the director of the U.S. Department of Agriculture (USDA) Beltsville Human Nutrition Research Center in Beltsville, Maryland. She 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. Dr. Fukagawa maintains an active research laboratory where her work ranges from cells and animals to in vivo studies in human volunteers. Her 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. One of her goals is to determine whether and how diet/food can help to mitigate the adverse effects of environmental stressors while maintaining adequate food production in an environmentally friendly and sustainable manner. Previously, Dr. Fukagawa was a professor of medicine and acting director of the Gerontology Unit at the University of Vermont in Burlington, Vermont. She received her M.D. from Northwestern University and her Ph.D. from the Massachusetts Institute of Technology. Her clinical training included residency at the University of Pennsylvania's Children's Hospital of Philadelphia, chief residency at the University of Vermont, and nutrition/ gerontology fellowships at the Children's Hospital and Beth Israel Hospital of Harvard Medical School.



**Michael K. Georgieff, M.D.**, is the Martin Lenz Harrison Land Grant Professor of Pediatrics and Child Psychology at the University of Minnesota School of Medicine and the University of Minnesota Children's Hospital in Minneapolis, Minnesota. He also is the vice-chair of pediatrics, the section head for neonatology, and the director of the Center for Neurobehavioral Development. Dr. Georgieff is an expert on the role of iron in fetal and neonatal brain development. He served as an advisor to the Pediatric Growth and Nutrition Branch of the National Institute of Child Health and Development (NICHD), was a permanent member of the Integrative Nutrition and Metabolism Study Section, and was on the Committee on Nutrition for the American Academy of Pediatrics. Dr. Georgieff has been continuously funded by the National Institutes of Health (NIH) since 1992, predominantly for studies in the field of iron and brain development. He won the Samuel Foman Nutrition Award from the American Academy of Pediatrics in 2014. He received his M.D. from Washington University in St. Louis and his pediatric and neonatology training from the Children's Hospital of Philadelphia at the University of Pennsylvania. He completed a neonatology fellowship at the University of Minnesota.



**Andrew Hoofnagle, M.D., Ph.D.**, is an associate professor, the head of the Division of Clinical Chemistry, and the director of the Nutrition and Obesity Research Center Analytical Core in the Department of Laboratory Medicine at the University of Washington. His grant-funded research focuses on using analytical chemistry to epidemiologically answer questions in vitamin D biology, cardiovascular disease, and cancer. His laboratory develops new assays that use mass spectrometry in the care of patients. In addition, they are currently investigating the role of high density lipoproteins in protecting patients with chronic kidney disease from atherosclerosis. He also is a member of the Accuracy-Based Testing Committee for the College of American Pathologists. He received his undergraduate education at Cornell University and his M.D. and Ph.D. from the University of Colorado. He completed a residency in clinical pathology at the University of Washington.





**Alex R. Kemper, M.D., M.P.H., M.S.**, is a professor of pediatrics at Duke University. After his pediatric residency training at Duke University, Dr. Kemper completed combined fellowship programs in health services research, medical informatics, and preventive medicine residency training at the University of North Carolina. Over this period, he earned master's degrees in both epidemiology and biomedical engineering. In 2000, Dr. Kemper joined the faculty at the University of Michigan, where he developed an active research program evaluating preventive services. In 2006, Dr. Kemper returned to Duke University and became the associate division chief for research in the Division of Children's Primary Care. Dr. Kemper has maintained an active research program related to the delivery of preventive services with a particular focus on newborn screening and serves as the Chair of the Condition Review Workgroup for the U.S. Secretary of Health and Human Services Advisory Committee on Heritable Disorders in Newborns and Children. He also is a member of the U.S. Preventive Services Task Force and a member of the Executive Editorial Board of Pediatrics, where he developed a new section for the journal focusing on quality improvement.



**Nancy F. Krebs, M.D., M.S.**, is a professor of pediatrics, the head of the Section of Nutrition, and the vice chair for Academic Affairs in the Department of Pediatrics at the University of Colorado School of Medicine. Dr. Krebs's research has focused on the impact of nutrition and feeding on both impaired and excessive growth of infants and young children in United States and international settings. She has conducted extensive research applying stable isotope methodologies to characterize zinc and iron homeostasis and requirements in vulnerable populations, including infants and young children in austere settings consuming supplements, micronutrient powders, and biofortified foods. Her current research investigates the influence of maternal phenotype on bioactive components of human milk; effects of complementary food choices on infant growth and body composition; effects of pre- and post-natal dietary exposures, including iron and zinc supplements on infants' enteric microbiome; and impact of a preconceptional nutrition intervention to improve fetal growth in low-resource settings in four countries (India, Pakistan, Democratic Republic of Congo, and Guatemala). Through the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD)-supported Global Network, Dr. Krebs has also participated in multicountry studies testing the impact of obstetric, peripartum, and postnatal interventions on maternal and infant outcomes. She has more than 250 research and scholarly publications. She received her M.D. from the University of Colorado and is board certified in general pediatrics, pediatric gastroenterology, and clinical nutrition.



**Bo Lönnerdal, Ph.D.**, is a distinguished professor of nutrition and internal medicine in the Department of Nutrition and the Program in International and Community Nutrition at the University of California, Davis, where he has an active research laboratory. His research has focused on bioactive components in breast milk, the effect of breast milk on the recipient infant, and mechanisms underlying the protection against infection. His research includes the micronutrients iron and zinc, how they are secreted into milk, and how they are utilized by the infant. He has extensive collaborative projects in China, Peru, and Sweden. Dr. Lönnerdal has published more than 500 scientific articles, book chapters, and books and is currently a member of the American Society of Nutrition (ASN); the European Society of Pediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN); and the International Society for Research on Human Milk and Lactation (ISRHML). He is on the editorial board of several scientific journals and has served on several expert panels for the World Health Organization (WHO). He received his Ph.D. in biochemistry from University of Uppsala in Sweden.



**James P. McClung, Ph.D.**, is a principal investigator and deputy chief of the Military Nutrition Division at the United States Army Research Institute of Environmental Medicine (USARIEM) in Natick, Massachusetts. His research focuses on micronutrient nutrition at both the basic and applied levels. Recent studies include the assessment of iron status and the impact of physical activity in female military personnel. Dr. McClung is an active member of a number of domestic and international societies, including the American Society for Nutrition. He serves on the editorial boards of *Advances in Nutrition* and *The British Journal of Nutrition*. He received his B.S. and M.S. from the University of New Hampshire and his Ph.D. from Cornell University. Following his doctoral studies he completed a National Research Council postdoctoral fellowship.



**Zuguo Mei, M.D., M.P.H.**, is an epidemiologist with the United States Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. His work is centered on planning, designing, conducting, analyzing, and interpreting epidemiologic studies, surveillance, and intervention projects related to micronutrients and nutrition. He has provided technical assistance in the design and implementation of program monitoring systems and surveillance systems or national micronutrient surveys in several countries, including China, Iraq, Democratic Republic of the Congo, Mozambique, Nepal, and Nigeria. Dr. Mei has led the development of technical tools, including technical consultation with the World Health Organization (WHO)/CDC and recommendations on assessing iron status of populations. As a committee member Dr. Mei has made substantial contributions to the development of the CDC 2000 growth chart. He also has conducted research related to childhood growth, overweight/obesity, iron deficiency, and monitoring and evaluation of micronutrient status. He received his medical degree in preventive medicine and his M.P.H. in maternal and child health from the Tongji Medical University in Wuhan, China.



**Nils Milman, M.D.**, is a senior consultant and professor emeritus in internal medicine and pulmonology at the University of Copenhagen. He has been engaged in studies of different aspects of human iron metabolism for more than 35 years. He has organized courses and lectures on human iron metabolism for a broad spectrum of health personal, including pharmacists and nurses, and postgraduate courses for general practitioners and hospital doctors and has participated in international BIOIRON meetings and European Iron Club Meetings. Dr. Milman has performed epidemiologic population surveys of iron status in Danes from infancy and childhood to old age and studies of iron-related disorders, both with respect to iron deficiency and iron overload, including hereditary hemochromatosis. He has published a substantial number of review and state-of-the-art papers dealing with different aspects of human iron metabolism and iron homeostasis. He received his M.D. from the Faculty of Medicine at the University of Copenhagen in Denmark and his postgraduate education from the University Hospitals in Copenhagen. He is a board-certified specialist in internal medicine, pulmonology, and allergology.



**Elizabeta Nemeth, Ph.D.**, is a professor of medicine at the David Geffen School of Medicine at the University of California, Los Angeles (UCLA); director of the UCLA Center for Iron Disorders; a standing member of the Molecular and Cellular Hematology Study Section of the National Institutes of Health (NIH); a member of the board of directors of the International Bioiron Society; and a member of the editorial board of *Blood*. Dr. Nemeth came to UCLA for a postdoctoral fellowship and has been studying the pathobiology of the iron-regulatory peptide hepcidin ever since. She has made major contributions to the understanding of iron homeostasis and of its dysregulation in many diseases. She characterized the regulation of hepcidin production by inflammation and iron and elucidated the mechanism of action of hepcidin in regulating the absorption of dietary iron and its release from stores. Dr. Nemeth also described the role of hepcidin in various iron disorders including hereditary hemochromatosis, iron-loading anemias (e.g.  $\beta$ -thalassemia), and iron-restricted anemias associated with inflammation and chronic kidney disease. She received the Grace Goldsmith Award from the American College of Nutrition for “significant achievements in the field of nutrition by a scientist under the age of 50 years.” Dr. Nemeth helped start three biotechnology companies: Intrinsic LifeSciences, focused on developing iron diagnostics; Merganser Biotech, focused on developing hepcidin peptide therapeutics; and Silarus Therapeutics, focused on developing erythroferrone-targeted therapeutics. She received her B.S. in molecular biology from the University of Belgrade, Yugoslavia, and her Ph.D. in cell, molecular, and neurosciences from the University of Hawaii.



**Kimberly O. O'Brien, Ph.D.**, is a professor in the Division of Nutritional Sciences at Cornell University. Her research has centered on studies designed to better understand mineral and vitamin D metabolism in pregnant women and their neonates in both developed and developing countries. Partitioning of nutrients between the mother and fetus is also addressed at the cellular level by assessing placental mineral transporters in relation to maternal and neonatal status. Dr. O'Brien's mass spectrometry laboratory includes instrumentation for high-sensitivity mineral stable isotope analysis to facilitate studies of mineral dynamics and bone calcium turnover. She received her B.S. in biology from the University of New Hampshire and her Ph.D. in nutrition from the University of Connecticut, Storrs. Her professional training included fellowships with the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development's Laboratory of Theoretical and Physical Biology/Section for Metabolic Analysis and Mass Spectrometry and the Children's Nutrition Research Center in the Department of Pediatrics at Baylor College of Medicine.

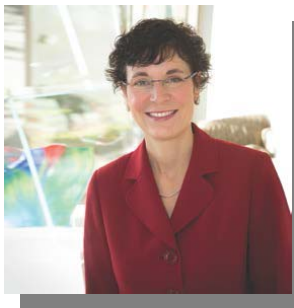


**Sant-Rayn Pasricha, M.P.H., Ph.D.**, is a clinical hematologist and hematopathologist with an interest in the treatment and diagnosis of red cell disorders. He is undertaking postdoctoral studies at the University of Oxford, United Kingdom, where he is working on basic and translational studies understanding the links between erythropoiesis and iron metabolism. He will be returning to Melbourne, Australia, to establish his own group at the Walter and Eliza Hall Research Institute in 2017. In the lab, Sant-Rayn studies regulation of the hormone hepcidin, which orchestrates systemic iron homeostasis. He also has a keen interest in clinical aspects of iron disorders, especially on biomarkers for iron deficiency including ferritin and emerging uses for measurement of hepcidin in clinical and public health. Dr. Pasricha also works in global health, with an interest in anemia control policy. He is chief investigator of a large trial in Bangladesh evaluating the effects of iron supplementation and multiple micronutrient powders on functional child health outcomes. He consults extensively on aspects of anemia control for international organizations and assists with the donor iron deficiency strategy at the Australian Red Cross Blood Service. He presently leads a new project with the World Health Organization (WHO) to review hemoglobin thresholds used to define anemia. He received his M.P.H. and Ph.D. from the University of Melbourne, Australia.





**Christine M. Pfeiffer, Ph.D.**, is a branch chief in the Nutritional Biomarkers Branch (NBB) in the Division of Laboratory Sciences (DLS) at the Centers for Disease Control and Prevention's (CDC's) National Center for Environmental Health (NCEH). She leads efforts to increase the visibility of the nutritional biomarkers program and to expand the program to monitoring of bioactive dietary compounds, directs program activities in accordance with Clinical Laboratory Improvement Amendments (CLIA) guidelines and availability of resources, and disseminates high-quality research findings and provides expert advice and consultation. Prior positions at CDC include acting chief of the NBB, chief of the Global Micronutrient Laboratory, and associate service fellow in the NBB. Dr. Pfeiffer has 20 years of research experience in independently leading and managing complex domestic and international programs in nutritional biochemistry and analytical chemistry through a team of 30 staff members, including 9 senior Ph.D. scientists. She is an internationally recognized expert in the area of folate and B vitamins. She received her B.S., M.S., and Ph.D. in food science from the University of Karlsruhe, Germany, and completed her postdoctoral work at the University of Florida, Gainesville.



**Maureen G. Phipps, M.D., M.P.H.**, holds the Chace-Joukowsky professorship, is chair of the Department of Obstetrics and Gynecology, and is assistant dean for Teaching and Research on Women's Health at Alpert Medical School. She also is the executive chief of obstetrics and gynecology for the Care New England Health System. She has led numerous initiatives at Brown, Women & Infants Hospital, and in Rhode Island including leading the effort for the Brown/Women & Infants Hospital National Center of Excellence in Women's Health and the Rhode Island Task Force on Preterm Birth. Her research and academic activities involve collaborations across departments, hospitals, and state agencies. Dr. Phipps has been the principal investigator or co-investigator on numerous projects and programs funded through the National Institutes of Health (NIH) and other agencies. Nationally, Dr. Phipps has been chair of the American College of Obstetrics and Gynecology (ACOG) Committee on Health Care for Underserved Women, is an associate editor for the *American Journal of Obstetrics & Gynecology*, serves on the U.S. Preventive Services Task Force, and is a member of the advisory panel for ACOG's Women's Preventive Service Initiative. She received her M.D. from the University of Vermont and her M.P.H. from the University of Michigan.





**Daniel J. Raiten, Ph.D.**, is the program director for nutrition in the Pediatric Growth and Nutrition Branch (PGNB) of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) at the National Institutes of Health (NIH), where he manages a large portfolio of extramural grants covering all aspects of nutrition and maternal and child development. He also is the project leader for two projects funded jointly by NICHD, the Bill and Melinda Gates Foundation, and members of the global food and nutrition community. Other responsibilities include membership on numerous committees including the Dietary Guidelines of Americans Federal Expert Group (FEG) for infants and children from birth to 24 months and pregnant women, the Interagency Committee on Human Nutrition Research (ICHNR), the PEPFAR Technical Working Group for Food and Nutrition, and the Trans-NIH working group on climate change and health. Dr. Raiten also is a member of the Scientific Steering Committee for the Micronutrient Forum (MNF); a member of the scientific advisory group for the Business Platform for Nutrition Research (BPNR), a public/private partnership to address global nutrition needs; and a former member of the World Health Organization (WHO) Nutrition Guidelines Advisory Group (NUGAG) for HIV/AIDS. He has a B.A. in history and political science and a B.S./M.S. in animal science/agriculture, received his Ph.D. in human nutrition from Penn State University, and completed a postdoctoral fellowship at the Child Study Center of Yale University Medical School.



**A. Catharine Ross, Ph.D.**, is a professor of nutrition and occupant of the Dorothy Foehr Huck Chair at the Pennsylvania State University. She also serves on the Institute of Medicine's Food and Nutrition Board in the Health and Medicine Division (HMD); the Food and Drug Administration (FDA) Food Advisory Committee; and an HMD committee to revise the food package for the Women, Infants and Children (WIC) supplementary feeding program. She is a fellow of the American Society for the Advancement of Science and the American Society for Nutritional Sciences and a member of the National Academy of Science. Her research has focused on vitamin A nutrition and lipid and lipoprotein metabolism and on the role of micronutrient nutrition in immune function. Previously Dr. Ross taught and conducted research at the Medical College of Pennsylvania in Philadelphia and served for 10 years as editor-in-chief of the *Journal of Nutrition*. She received her undergraduate education in zoology from the University of California, Davis, and her M.N.S. in nutrition and Ph.D. in biochemistry and molecular and cell biology from Cornell University. She was a postdoctoral fellow in the Department of Medicine at Columbia University.



**Cindy Roy, Ph.D.**, is a program director in the Division of Kidney, Urologic, and Hematologic Diseases at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). Dr. Roy oversees a basic research and training portfolio of grants investigating the development and pathobiology of red blood cells and their progenitors. A key component of this program is work on the regulation of heme biosynthesis and iron absorption, utilization, and storage. This program also includes the development of noninvasive approaches to measure tissue iron load. Previously Dr. Roy was an assistant professor of geriatric medicine at Johns Hopkins University. She received her B.S. from the University of Maryland Baltimore County and her Ph.D. from the Oregon Health Sciences University. She completed her fellowship at Harvard University and developed her independent research program to investigate anemia in the context of chronic diseases and aging.



**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. The Stover research group investigates the fundamental chemical, biochemical, genetic, and epigenetic mechanisms and the associated pathways within the one-carbon metabolic network that underlie the relationships among nutrition and metabolism and risk for birth defects, cancer, and neurodegenerative diseases. A primary focus of his research is to understand the regulation of folate cofactor partitioning among the anabolic pathways within the metabolic network and the role of this regulation in disease etiology. Dr. Stover is a member of the National Academy of Sciences and 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, the Osborne and Mendel Award for outstanding recent basic research accomplishments in nutrition from the American Society for Nutrition, and a MERIT award from the National Institute of Diabetes and Digestive and Kidney Diseases-National Institutes of Health (NIDDK-NIH). He received his B.S. in chemistry from Saint Joseph's University and was awarded the Molloy Chemistry Award at graduation. He received his Ph.D. 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.



**Parmi S. Suchdev, M.D., M.P.H.**, is an associate professor of pediatrics at Emory University and a medical epidemiologist with the Centers for Disease Control and Prevention (CDC) Nutrition Branch. He teaches medical students and residents at Children’s Healthcare of Atlanta as a pediatric hospitalist. He also has joint appointments in the Hubert Department of Global Health at the Rollins School of Public Health and the Program in Nutrition Health Sciences at the Laney Graduate School, where he teaches a graduate nutrition course and mentors students. Dr. Suchdev’s research focuses on micronutrient malnutrition, in particular the safety and effectiveness of home fortification programs, as well as the effects of infection/inflammation on nutrition biomarkers. Since 2010, he has written more than 40 papers on this topic, which has contributed to the formulation of global policy by the World Health Organization (WHO). Dr. Suchdev leads several domestic and international collaborative research projects and conducts nutrition field studies in several countries in Africa and Latin America. He also has a passion for global health education and spearheaded a global health track for the Emory Pediatrics Residency Program. He received his medical and public health training at Northwestern University, completed his residency in pediatrics at the University of Washington, and completed the CDC Epidemic Intelligence Service fellowship.



**Liandr  van der Merwe, Ph.D.**, is a senior scientist in the Early Life Nutrition Division of Nutricia Research, the Netherlands, where she focuses on nutritional issues encountered in the European context, such as those related to allergy, preterm birth, and feeding imbalances during toddlerhood. She currently is involved in studies to identify and understand which nutrition and health concerns confront young children in different countries and is exploring effective nutritional solutions for reducing iron and vitamin D deficiencies in early life. Dr. van der Merwe’s early work focused on the special nutritional needs and challenges faced by young children living in the developing world, where chronic environmental enteropathy and infections, such as malaria, often complicate the effects of malnutrition. She received her B.Sc. in biochemistry from the University of the Free State, South Africa, and her M.Sc. and Ph.D. in epidemiology and public health at the London School of Hygiene and Tropical Medicine, United Kingdom.



**Laura K. Vricella, M.D.**, is an assistant professor in the Division of Maternal-Fetal Medicine and the director of Perinatal Genetics at the Saint Louis University School of Medicine. Her current areas of research include obesity, obstetric anesthesia, preeclampsia, and methods for assessing volume expansion in pregnancy. Dr. Vricella is board certified in obstetrics and gynecology and maternal-fetal medicine. She received her M.D. from the University of Missouri School of Medicine and completed her residency in obstetrics and gynecology and a fellowship in maternal-fetal medicine at Case Western Reserve University.



**Marianne Wessling-Resnick, Ph.D.**, is a professor of nutritional biochemistry at Harvard's T. H. Chan School of Public Health (HSPH) and a foundational faculty member in the newly formed Department of Genetics and Complex Diseases, which focuses on metabolic regulation and stress response. She also is the program director for NIH-sponsored training grants that support predoctoral and postdoctoral training and undergraduate research experience for underrepresented minority students. Through her efforts, these training programs have provided research opportunities in different laboratories at HSPH to more than 50 graduate students and fellows and more than 25 undergraduate students. Dr. Wessling-Resnick's research program investigates mineral metabolism and, in particular, genetic disorders of iron metabolism. Her studies have elucidated the role of iron status (both deficiency and overload) in the regulation of iron and manganese uptake by the intestinal, pulmonary, and olfactory pathways. Using animal models, her work has defined the function of the iron importer divalent metal transporter-1 (DMT1) and the iron exporter ferroportin (Fpn) to characterize iron-responsive manganese uptake. Through these efforts, the pharmacokinetics of pulmonary manganese and iron uptake from the lungs to the blood have been established, and this research has revealed the influence of a high-iron diet as well as the effects of iron deficiency due to diet and phlebotomy on these pathways. A major finding has been that iron deficiency promotes manganese absorption across the olfactory tract directly into the brain. She received her B.S. in chemistry from the Worcester Polytechnic Institute and her Ph.D. in biomedical sciences from the University of Massachusetts Medical School.



**Cuilin Zhang, M.D., Ph.D., M.P.H.**, is a senior investigator in the Division of Intramural Population Health Research at the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) at the National Institutes of Health (NIH) and an adjunct professor in the Department of Population, Family, and Reproductive Health at Johns Hopkins University. She is a nutritional and molecular epidemiologist with research conceptualized within a life course epidemiologic paradigm, so that pregnancy complications such as gestational diabetes may be understood in the context of pre- and peri-conceptual factors and linked with later onset diseases and the health implications for exposed offspring. Over the years, Dr. Zhang has developed a research agenda with a focus on diet/lifestyle, metabolic and genetic determinants and health consequences of gestational diabetes and type 2 diabetes, and developmental origins of cardio-metabolic diseases. She currently leads several large studies supported by the NIH, including the Diabetes and Women's Health Study and the Longitudinal Pathogenesis Study of Impaired Glucose Tolerance in Pregnancy. Along with extensive epidemiological and clinical data as well as related biospecimens, these studies were designed for studying a broad range of health and disease outcomes and early life precursors of perinatal, pediatric, and adult diseases. She received her M.D. from Beijing Medical University and her M.P.H. and Ph.D. in epidemiology from the University of Washington School of Public Health.





**Michael B. Zimmermann, M.D.**, is a professor and head of the Human Nutrition Laboratory in the Department of Health Sciences and Technology at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland. He also is a visiting professor in endocrinology, diabetes, and nutrition at the University of Zurich Hospital in Switzerland. Dr. Zimmermann has published more than 200 peer-reviewed papers, many in the area of micronutrient deficiencies, with a focus on iodine and iron deficiency. His research won the 2004 Mead Johnson Prize for Nutrition Research from the American Society for Nutritional Sciences, the 2005 Endocrine Society and Pfizer International Award for Excellence in Published Clinical Research, the 2013 International Endocrinology Award of the American Society of Endocrinology, and the 2015 Princess Sirindhorn Award from the Royal Family of Thailand. He received his M.D. from Vanderbilt University School of Medicine and did his postgraduate medical training at the University of California in San Francisco.