

The National Academies of **SCIENCES • ENGINEERING • MEDICINE**

Nutrition During Pregnancy and Lactation: Exploring New Evidence - A Workshop

Speaker and Moderator Biographies

Kjersti Aagaard, M.D., Ph.D., M.C.I., is the Henry and Emma Meyer Professor Chair in Obstetrics and Gynecology at Baylor College of Medicine and Texas Children's Hospital. She serves as Vice Chair of Research for Obstetrics and Gynecology, and a professor in the Departments of Molecular and Human Genetics, Molecular and Cellular Biology, and Molecular Physiology and Biophysics. She is a member of the Center for Reproductive Medicine, Digestive Disease Center, Eisenberg Center for Decision Sciences, the Center for Microbiome and Metagenomics Research, and the School for Tropical Medicine. She is a co-Director in the Baylor College of Medicine Medical Scientist Training Program (M.D./Ph.D. program). Dr. Aagaard joined the faculty at Baylor College of Medicine and Texas Children's immediately after completing her fellowship in 2007. Her career as a physician-scientist has included active and supported efforts in research, clinical care, education, mentorship and public health advocacy. Her clinical interests include emerging obstetrical infectious diseases, preterm birth, diabetes and hypertensive disorders in pregnancy, maternal smoking and environmental exposures, and the detection and diagnosis of congenital and genetic anomalies. Her clinical and translational research interests parallel her clinical interests, and focus on the role of the microbiome in pregnancy and early developmental programming and the impact of key exposures in pregnancy (such as nutrition, diabetes, maternal high fat diet, smoking, and environmental chemical exposures) on fetal development and later in life disease. Dr. Aagaard has been continually funded by National Institutes of Health (NIH) since her fellowship, and additionally supported by March of Dimes, the Gates Foundation/USAID, the Thrasher Foundation, and the Burroughs-Welcome Preterm Birth Initiative. In 2007 she received the NIH Director's New Innovator Award, in 2015 the Michael E. DeBakey Medal for Excellence in Research, and in 2018 the Nature mid-career Mentor of the Year Award. She was elected to the American Society for Clinical Investigators in 2019, and was just selected to receive the Society for Reproductive Investigators President's Award in 2020.

Lindsay H. Allen, Ph.D., is Director of the U.S. Department of Agriculture (USDA) Agricultural Research Service Western Human Nutrition Research Center. Dr. Allen's research is focused on the prevalence, causes, consequences, and prevention of micronutrient deficiencies including iron, vitamin B-12, zinc, vitamin A, and riboflavin. Dr. Allen studies the prevalence, causes, and consequences of micronutrient deficiencies, primarily in developing countries, using randomized, controlled human trials testing micronutrient supplements, food fortification, and food-based approaches to improve nutritional status, pregnancy outcome, and child development, described in her approximately 300 publications. She has increased awareness of the globally high prevalence of vitamin B12 deficiency, its adverse consequences and response to food-based and supplementation interventions, and uses novel methods to measure B12 absorption and functional effects of supplementation. Her current focus is on methods for assessment of micronutrients in human milk and effective interventions for increasing low milk micronutrient concentrations. Dr. Allen served on 12 committees of the Food and Nutrition Board of the National Academies of Sciences, Engineering, and Medicine, and has advised many national, bilateral, and international organizations including the World Health Organization (WHO), UNICEF, Asian Development Bank, the World Bank, Pan American Health Organization (PAHO), and Food and Agriculture Organization of the United Nations (FAO). She is principal author of *What Works? A Review of the Efficacy and Effectiveness of Nutrition Interventions*, WHO's *Guidelines on Food Fortification with Micronutrients*, and the Vitamin B12 Report of NIH's Biomarkers in Nutrition and Development program. She served as president of the American Society for Nutrition (ASN) and the Society for International

Nutrition Research. Dr. Allen received the Kellogg Prize from the Society for International Nutrition Research, the McCollum International Lectureship and Conrad A. Elvehjem Award for Public Service in Nutrition from ASN, the Outstanding Investigator of the Year Award from the Vitamins and Minerals Research Interest Section of ASN, and the Career Achievement in Evidence Translation Award from the Mathile Institute. She is past vice president of the International Union of Nutritional Sciences, serves on the International Micronutrient Forum's Scientific Advisory Committee and is currently president-elect of the American Society for Nutrition.

Regan Bailey, Ph.D., M.P.H., R.D., is a professor in the Department of Nutrition Science at Purdue University, and directs the Indiana Clinical and Translational Science Institute, Purdue Nutrition Assessment Center. Prior to Purdue, Dr. Bailey was a nutritional epidemiologist and Director of Career Development and Outreach at the NIH Office of Dietary Supplements. Dr. Bailey is a registered dietitian who completed a dietetic internship and M.S. in food and nutrition from the Indiana University of Pennsylvania. Dr. Bailey received her Ph.D. in nutrition science from The Pennsylvania State University. She completed an M.P.H. from the Bloomberg School of Public Health at Johns Hopkins University. The focus of research in the Bailey lab is to improve the methods of measuring nutritional status to optimize health. She utilizes nationally-representative survey data from the National Health and Nutrition Examination Survey (NHANES) to characterize the American dietary landscape, to identify the optimal methods for assessment of biomarkers of nutritional status, and importantly, to understand how dietary intakes relate to health outcomes.

Darlana Birch, M.B.A., R.D.N., began her career in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) program at the local agency level. Working in a rural county of 8,600 residents on the Arizona-New Mexico border, she worked as the local agency's WIC director and registered dietitian before moving to the Arizona WIC state office in Phoenix. In a continuous effort to explore and expand her horizons, Ms. Birch then moved from the west coast to the east coast where she worked as the training center nutritionist with the Maryland WIC state office. Currently, Ms. Birch's work involves representing the National WIC Association (NWA) at stakeholder meetings, participating in advocacy efforts, and collaborating with NWA partners, coalitions, and task forces to promote and elevate the WIC community's nutrition and breastfeeding-related successes and concerns.

Laura Borgelt, Pharm.D., M.B.A., FCCP, BCPS, is Associate Dean of Administration and Operations at the University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences and Professor in the Departments of Clinical Pharmacy and Family Medicine. Dr. Borgelt's teaching, practice, and research focus on women's health pharmacotherapy with an emphasis on reproductive health, including contraception; pregnancy and lactation; polycystic ovary syndrome; and menopause. She has published numerous peer-reviewed women's health articles, several book chapters, and was an editor of the textbook entitled *Women's Health Across the Lifespan: A Pharmacotherapeutic Approach*. She has researched labeling and contents for prenatal vitamins and minerals and presented women's health topics at local, national, and international conferences. Dr. Borgelt has served as past-chair of the American College of Clinical Pharmacy Women's Health Practice and Research Network, participated in the Health Resources and Services Administration (HRSA) expert panel for Interprofessional Collaboration in Women's Health Curricula, and has been a member and chair of the American Association of Colleges of Pharmacy Women's Health Curriculum Task Force. She has been the recipient of several teaching and clinical awards and is an active member of and leader in multiple professional organizations.

Patsy M. Brannon, Ph.D., R.D., is currently Visiting Professor, and was Professor until her retirement in June 2018, 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 at the Office of Dietary Supplements at the NIH. Her research focus includes nutritional and metabolic regulation of gene expression, especially as relating to human development, the placenta, and exocrine pancreas. She was a member of the National Academies of Sciences, Engineering, and Medicine's Committees on Dietary Reference Intakes for Vitamin D and Calcium and on Dietary Reference Intakes for Sodium and Potassium and the National Academies' Food and Nutrition Board. Dr.

Brannon was a member of a number of professional and scientific associations and has served on the Executive Board of the American Society for Nutrition (ASN). She has received numerous awards, including the ASN Fellow, Pew Faculty Scholar in Nutrition award as well as the Centennial Laureate award from Florida State University. Dr. Brannon received her Ph.D. from Cornell University in nutritional biochemistry.

Patrick Catalano, M.D., is Professor and Vice Chair of Obstetrics and Gynecology at Tufts University School of Medicine and a Maternal-Fetal Medicine specialist at Tufts University Medical Center. His research is focused on maternal metabolism in women whose pregnancies are complicated by diabetes and obesity. Further, he is studying the short and long-term effects on mothers and their children. Dr. Catalano was previously at Case Western Reserve University, MetroHealth Medical Center, Cleveland, Ohio where he was the Director of the Center for Reproductive Health and the Director of the Clinical Research Unit at the MetroHealth campus of the Case Western Reserve Clinical and Translational Science Collaborative. Dr. Catalano received his medical degree from the University of Vermont's College of Medicine, where he also completed both his residency in OB-GYN and a fellowship in maternal-fetal medicine. He has had continuous funding from the Eunice Kennedy Shriver National Institutes of Child Health and Human Development (NICHD) for the past 30 years. Throughout his career, Dr. Catalano has received numerous awards and accolades for his contribution to maternal and child health, including the March of Dimes Agnes Higgins Award in recognition of his lifelong commitment to improve maternal nutrition. He has co-authored over 200 publications and has lectured world-wide about his research aimed at improving our understanding of a broad range of morbidities affecting maternal and child health and potential treatment strategies targeted to mitigate their effects. Dr. Catalano previously served on two Institute of Medicine committees related to pregnancy weight gain guidelines. Dr. Catalano is a member of the workshop planning committee.

Marie Caudill, Ph.D., R.D., is internationally recognized for her work on folate and choline, and the intake levels required to meet metabolic requirements and improve physiological outcomes. She has published over 120 papers, reviews, and chapters in this area, and is frequently an invited speaker on topics related to the importance of choline nutrition during pregnancy and lactation. Dr. Caudill is also a co-editor on the popular graduate level nutrition textbook *Biochemical, Physiological, & Molecular Aspects of Human Nutrition*. A primary goal of the Caudill laboratory is to generate data that will inform the development of nutrient intake recommendations that promote mother and child nutrition, health, and well-being. An integrative approach that includes targeted and non-targeted assessments of genomic, epigenetic, biochemical, and physiologic endpoints is employed.

Ellen Demerath, Ph.D., is Professor of Epidemiology and Community Health at the University of Minnesota School of Public Health where she directs the Maternal and Child Health M.P.H. program and teaches courses on genetics, maternal and child health, and nutrition/obesity. Dr. Demerath studies the developmental origins of obesity and chronic disease, and over the past 20 years, her NIH-funded research program has bridged maternal-infant nutrition, obesity genomics, child growth and development, and cardiovascular disease epidemiology. In 2013, Dr. Demerath launched, and currently directs, the innovative Driven to Discover Research Facility at the Minnesota State Fair, which has resulted in the participation of over 100,000 state residents in University research in the ensuing 6 years. Dr. Demerath received her Ph.D. in biological anthropology from the University of Pennsylvania in 1997.

Rajavel Elango, Ph.D., is Associate Professor in the Department of Pediatrics in the School of Population and Public Health at The University of British Columbia. Dr. Elango's research program seeks to identify protein and amino acid requirements during key life stages, and in disease. During active stages of growth and development, such as pregnancy, lactation, and childhood, the nutritional state affects long-term health. With the use of stable isotope tracers, his research seeks to measure requirements and trace complex amino acid metabolic pathways in the human body. The focus of his research is to make dietary protein and amino acid recommendations to improve long-term health for the mother and child.

Michael Goran, Ph.D., is Professor of Pediatrics at Children's Hospital of Los Angeles which is affiliated with the Keck School of Medicine at the University of Southern California (USC). He is Program Director

for Diabetes and Obesity at Children's Hospital of Los Angeles/The Saban Research Institute and he holds the Dr. Robert C. and Veronica Atkins Endowed Chair in Childhood Obesity and Diabetes. Dr. Goran also serves as Co-Director of the USC Diabetes and Obesity Research Institute. Dr. Goran received his Ph.D. from the University of Manchester, UK (1986) prior to postdoctoral training in the United States (1987–1991). He previously served on the faculty of medicine at the University of Vermont (1991–1994), and the Department of Nutrition Sciences at the University of Alabama at Birmingham (1994–1999) prior to joining USC in 1999. Dr. Goran's research has focused on the causes and consequences of childhood obesity for 30 years. His work is focused on understanding the metabolic factors linking obesity to increased disease risk during growth and development and using this information as a basis for developing new clinical, behavioral, and community approaches for prevention, treatment, and risk reduction. He is also especially interested in ethnic disparities in obesity and obesity-related diseases, including type 2 diabetes and fatty liver disease, with a special interest on the effects of dietary sugar on obesity and metabolic diseases among Hispanic populations. His work also covers maternal-infant nutrition and identifying modifiable factors that can be targeted for interrupting the developmental programming of obesity, including bioactive elements of breastmilk and infant microbiome development. His research has been continuously funded by the NIH and other foundations for the past 25 years, during which he has raised almost \$50 million in funding to support this work. Dr. Goran has published over 350 professional peer-reviewed articles and reviews. He is the editor of the *Childhood Obesity: Causes, Consequences and Intervention Approaches* published in 2017, co-editor of *Dietary Sugars and Health* published in late 2014, and currently serves as editor-in-Chief for *Pediatric Obesity*. He has been the recipient of a number of scientific awards for his research and teaching, including: The Nutrition Society Medal for Research (1996), The Lilly Award for Scientific Achievement from The Obesity Society (2006), The Bar-Or Award for Excellence in Pediatric Obesity Research from The Obesity Society (2009), the TOPS award for contributions to obesity research from The Obesity Society (2014), and the Rank Prize Lecture in Nutrition (2018).

Erica P. Gunderson, Ph.D., M.S., M.P.H., R.D., is an epidemiologist and senior research scientist at the Division of Research, Kaiser Permanente Northern California. Her research program identifies the determinants of obesity and chronic diseases in women across the life course, distinguishing the specific contributions of pre-pregnancy risk status, pregnancy course and outcomes, and lactation. Specifically, her prospective research studies assess metabolic changes across the pregnancy and lactation continuum in relation to progression to type 2 diabetes, and cardiovascular disease in women during and beyond the childbearing years. These studies develop models for future prediction of diabetes and cardiovascular disease, with a focus on high-risk women with gestational diabetes mellitus and hypertensive disorders of pregnancy. Her research also evaluates the role of early postnatal life on health outcomes in offspring exposed to maternal obesity and diabetes in utero. Her NIH-funded research program has spanned 20 years and she has authored more than 100 peer-reviewed original research papers and reviews. Her clinical experience includes medical nutrition therapy and guidelines for preconception and prenatal care of women with diabetes. She received her Ph.D. in epidemiology and the Warren Winkelstein Award for Excellence in Graduate Studies in epidemiology from the University of California at Berkeley. She also earned dual M.P.H. and M.S. degrees in nutrition and public health from the University of California at Berkeley, and a B.S. degree in biological sciences from Stanford University. Dr. Gunderson is a member of the workshop planning committee.

Corrine Hanson, Ph.D., R.D., LMNT, FAND, is Associate Director and Associate Professor of Medical Nutrition Education Division at the University of Nebraska Medical Center. Her research focuses on nutrition through the life course, with the goal of defining nutrition interventions in pregnancy and the pre-conception period that impact the long-term health of the offspring and to understand the role of nutrition in the prevention and treatment of lung diseases, such as chronic obstructive pulmonary disease (COPD) and asthma. Dr. Hanson received both her B.S. and M.S. in human nutrition from the University of Nebraska, Lincoln and her Ph.D. from the University of Nebraska Medical Center.

Tamera Hatfield, M.D., Ph.D., is a maternal fetal medicine specialist on faculty at the University of California Irvine. Dr. Hatfield is a double board certified obstetrician-gynecologist specializing in maternal fetal medicine. She is passionate about her work treating high-risk pregnancy patients, and has a particular interest in managing maternal conditions that complicate pregnancy, with a special interest in

cancer and pregnancy. She recently served on the National Academies of Sciences, Engineering, and Medicine's committee to advise evidenced-based revisions of the WIC food packages. Dr. Hatfield is actively involved in educating community OB-GYNs and has worked diligently to improve maternal and neonatal outcomes in her neighboring communities. She also serves as medical director for a large diabetes in pregnancy program. She is involved with teaching residents and medical students, and previously served on the Council on Resident Education in Obstetrics and Gynecology. She is also a member of the Society for Maternal Fetal Medicine and recent recipient of an Orange County Physician of Excellence Award. Dr. Hatfield received a B.S. in biological sciences and B.A. in psychology from University of California Irvine, a Ph.D. in behavioral neuroscience from the University of North Carolina, and completed her M.D., residency in obstetrics and gynecology, and fellowship in maternal and fetal medicine at University of California Irvine. Dr. Hatfield is a member of the workshop planning committee.

Kate Keenan, Ph.D., received a B.A. from Williams College in 1986, and a Ph.D. in clinical psychology from the University of Pittsburgh in 1995. She completed her clinical internship at the Children's Memorial Hospital at Northwestern University and then joined the Department of Psychiatry at the University of Chicago, where she is currently Professor of Psychiatry and Behavioral Neuroscience. Dr. Keenan's program of research in developmental psychopathology spans several developmental periods and phenotypes. The integrative thread running through each study is the aim of identifying the earliest appearing individual differences that connote risk for psychopathology, and the factors that are associated with the transition from risk to the expression of a disorder. The work is designed to be relevant to the understanding of causal mechanisms and to the development of prevention interventions. She is specifically interested in the study of the type and timing of stress exposure on health outcomes. Dr. Keenan's research is funded through the National Institute of Mental Health, the National Institute of Heart Lung and Blood, the Eunice Kennedy Shriver National Institute of Child Health and Human Development, and the Office of the Director at NIH. She is past-president of the International Society for Research in Child and Adolescent Psychopathology. In 2018, she participated in a seminar on the topic: *Taking Early Head Start to a New Level: Prenatal Programming Prevention*.

Yvonne Lamers, Ph.D., M.Sc., holds the Canada Research Chair in Human Nutrition and Vitamin Metabolism and is an associate professor in the Food Nutrition and Health Program at The University of British Columbia (UBC) and investigator at the British Columbia Children's Hospital Research Institute in Vancouver. Dr. Lamers' research interests are in human nutrition research, more specifically, an interest in the physiology and biochemistry of nutrition-related health outcomes and in targeted and population-based strategies of optimal health promotion and disease prevention. Her research specifically focuses on B-vitamins and their kinetics and functions in human metabolism. B-vitamins are required for normal cell growth and neurocognitive function and thus have an impact on human health from the embryo to the older adult. Low folate and/or vitamin B-12 status, for example, may yield pregnancy complications, adverse birth outcomes, cancer, and cognitive impairment. Dr. Lamers' research, which focuses on early life nutrition during pregnancy and toddlerhood and vitamin adequacy in women across the lifespan, is funded by the Canadian Institutes of Health Research, Canadian Foundation for Innovation, the British Columbia Knowledge Development Fund, and the Dairy Farmers of Canada. Dr. Lamers established the UBC Nutritional Biomarker Laboratory that is set up with externally validated methods for blood and tissue biomarker assessment and has participated in various inter-laboratory comparison studies. As evidenced by her recent work, her goal is to contribute new knowledge that can be applied in clinical practice and public health for the benefit of individuals and vulnerable population groups.

Barbara Laraia, Ph.D., M.P.H., R.D., is Professor of Public Health Nutrition in the Division of Community Health Sciences at the University of California, Berkeley. She oversees a number of projects that investigate how human response to stress influences eating behaviors and metabolic outcomes. Her research program focuses on the influence of household food insecurity on dietary intake, cardiometabolic risk factors, and pregnancy outcomes, especially among socially diverse and low-income populations. She has written extensively on this topic and found that food insecurity carries the double burden of severe stress and poor dietary intake. A second aspect of her research focuses on early life adverse events, stress and non-homeostatic eating behaviors, and how these lead to dietary intake and metabolic dysregulation.

Maria Makrides, Ph.D., is the Theme Leader for SAHMRI Women and Kids at the South Australian Health and Medical Research Institute, based at the Women's and Children's Hospital. She is a National Health and Medical Research Council Principal Research Fellow and also Professor of Human Nutrition at University of Adelaide. She is an elected Fellow of the Australian Academy of Science and the Australian Academy of Health and Medical Science. Dr. Makrides leads a multi-disciplinary research group of over 30 staff who are highly skilled in conducting and translating nutrition intervention trials involving mothers and babies. As a research dietitian, she is committed to improving the nutrition and health of mothers and their babies through the conduct and translation of high quality research. She is particularly recognized for work investigating the health effects of dietary fatty acids, iron, and novel dietary ingredients in the perinatal period. This work has resulted in significant changes in guidelines for pregnancy, infant feeding, and in the composition of infant formula. Dr. Makrides has over 250 peer-reviewed publications including a number in the prestigious journals *The Lancet*, *The Journal of the American Medical Association*, *New England Journal of Medicine*, and the *British Medical Journal*. She is also co-editor of four books, including the most widely sold textbook in pediatric nutrition that is now translated into Chinese, Spanish, and Russian.

Leslie Myatt, Ph.D., FRCOG, is Professor of Obstetrics and Gynecology, Director of Perinatal Research and Endowed Professor in the Bob and Charlee Moore Institute of Nutrition and Wellness at the Oregon Health & Science University, Portland. Dr. Myatt received both his B.Sc. and Ph.D. from the University of London, UK. He moved to Oregon in 2015, having previously been a faculty member at the University of Texas Health Science Center San Antonio, and at the University of Cincinnati, where he was Director of the NIH-funded Physician Scientist Training Program (M.D. /Ph.D.) and the Women's Reproductive Health Research Scholars Program. Dr. Myatt served as editor of the journal *Placenta* (1997 to 2004), president of the Perinatal Research Society (1997), president of the International Federation of Placenta Associations (2002 to 2004) and president of the Society for Gynecologic Investigation (2009 to 2010). He is internationally known for his research which applies basic science approaches to clinical problems in perinatology, including preeclampsia, preterm birth, and gestational diabetes. His research interests include the effect of obesity and gestational diabetes on trophoblast respiration and metabolism, the role of obesity, oxidative and nitrate stress in placental function, and fetal programming and the regulation of prostaglandin synthesis and action in intrauterine tissues at parturition. He has published over 290 papers and 380 abstracts and has served on many review panels and study sections for NIH, CIHR, and other international grant giving bodies. Dr. Myatt is also a member of the Global Pregnancy Collaboration (CoLab), which works with maternal and fetal medicine researchers around the globe to facilitate research addressing adverse pregnancy outcomes. He was elected as a Fellow (ad eundem) of the Royal College of Obstetricians and Gynecologists in 2013 for his contributions to women's health research and has been presented with the Naftolin Award for Mentorship and the Distinguished Scientist Award by the Society for Reproductive Investigation.

Kimberly O'Brien, Ph.D., 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 National Institute of Child Health and Human Development, Laboratory of Theoretical and Physical Biology/Section for Metabolic Analysis and Mass Spectrometry and the Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine. Professor O'Brien joined the faculty in the Division of Nutritional Sciences after working for 10 years as a faculty member in the Center of Human Nutrition at Johns Hopkins Bloomberg School of Public Health. Professor O'Brien's research has centered on studies designed to better understand mineral metabolism and bone health in infants, children, and pregnant and lactating women in both developed and developing countries. To address issues of calcium metabolism, she has undertaken metabolic studies in groups including children from osteoporotic families, pregnant and lactating adolescents, and children with chronic diseases such as cystic fibrosis and HIV infection. Her current research focuses on the impact of adolescent pregnancy, particularly among minority populations, on maternal and fetal bone health, risk of anemia, and maternal and neonatal vitamin D and iron physiology. Partitioning of nutrients between the mother and fetus is addressed at the cellular level by assessing placental mineral transporters in relation to maternal and neonatal status.

Deborah O'Connor, Ph.D., M.Sc., R.D., is Interim Chair and Professor in the Department of Nutritional Sciences at the University of Toronto and holds scientific appointments in the Translational Medicine program at The Hospital for Sick Children and Pediatrics at Mount Sinai Hospital. Dr. O'Connor's research program currently focuses on three areas of maternal and infant nutrition: (1) the folate status of Canadians with an emphasis on women, including the role that bacterial biosynthesis of folate in the colon plays on the folate status of humans; (2) the use of donor human milk for very low birth weight infants when mothers' own milk is in short supply and the long-term effects on neurocognitive outcomes of these vulnerable infants; and (3) the relationships between metabolic status (normoglycemia, gestational diabetes) of women during pregnancy on breast milk nutrient, hormone, and microbe composition. Prior to arriving in Toronto, Dr. O'Connor was Associate Professor in the Division of Applied Human Nutrition at the University of Guelph and then at Ohio State University and was the senior group leader of the Premature Infant Nutrition group at Abbott Laboratories in Columbus, Ohio. She served as the Director of Clinical Dietetics at The Hospital for Sick Children from 2000 to 2012 and then the Associate Chief of Academic Professional Practice until 2013. Dr. O'Connor completed her undergraduate training at the University of Guelph and her M.Sc. and Ph.D. in nutritional sciences at the University of Illinois. She completed her clinical dietetic training at Kingston General Hospital. She is a member of Dietitians of Canada, the International Society for Research on Human Milk and Lactation, the Canadian Society of Nutritional Sciences, and the American Society of Nutritional Sciences. Dr. O'Connor is a member of the workshop planning committee.

Angela Odoms-Young, Ph.D., is Associate Professor in the Department of Kinesiology and Nutrition in the College of Applied Health Sciences and Associate Director of Research, Education, and Training in the Office of Community Engagement and Neighborhood Health Partnerships at the University of Illinois at Chicago (UIC). Dr. Odoms-Young's research is focused on understanding social, cultural, and environmental determinants of dietary behaviors and diet-related diseases in low-income populations and communities of color. Her previous projects include studies to evaluate the impact of the new WIC food package on dietary intake, weight status, and chronic disease risk in 2-3 year old low-income children and vendor participation; identify strategies to improve program participation and retention among WIC eligible children; evaluate the efficacy of a community-based participatory weight loss intervention in African American women; and examine community engagement approaches to promote food justice. She has contributed to several Institute of Medicine reports, including the Review of WIC Food Packages. Dr. Odoms-Young serves on the executive committee of the Consortium to Lower Obesity in Chicago Children and Robert Wood Johnson Foundation-Healthy Eating Research Program National Advisory Committee. Prior to joining UIC, Dr. Odoms-Young served on the faculty of Northern Illinois University in Public Health and Health Education. She completed a Family Research Consortium Postdoctoral Fellowship examining family processes in diverse populations at the Pennsylvania State University and the University of Illinois at Urbana-Champaign and a Community Health Scholars Fellowship in community-based participatory research at the University of Michigan School of Public Health. Dr. Odoms-Young is a member of the workshop planning committee.

Emily Oken, M.D., M.P.H., is Professor in the Department of Population Medicine at Harvard Medical School and Harvard Pilgrim Health Care Institute. Dr. Oken directs the Division of Chronic Disease Research Across the Lifecourse within the department of Population Medicine. Her research focuses on the influence of nutrition and other modifiable factors during pregnancy and early childhood on long-term maternal and child health, especially cardiometabolic health and cognitive development. She has also led a number of studies examining predictors and sequelae of maternal overweight, weight gain, and related conditions such as gestational diabetes mellitus in the peripartum period. Her work on the toxicant risks and nutrient benefits of prenatal fish consumption has influenced national guidelines for fish consumption during pregnancy, helping to shift the previous focus of risk-only or benefit-only studies to a broader emphasis on the overall health effects of fish consumption for mother and baby. She has also published widely on perinatal influences on child health including asthma and atopy. In support of this work, she has led longitudinal studies commencing in the peripartum period and following mothers and children throughout childhood. She is Principal Investigator of Project Viva, a unique U.S. pre-birth cohort study that has followed pregnant women and their children since 1999. She is also Principal Investigator and a co-leader of the team assessing cardio-metabolic, respiratory, and neurocognitive outcome measures on children enrolled 1996-1997 in the Promotion of Breastfeeding Intervention Trial (PROBIT), a cluster

randomized trial of breastfeeding promotion in the Republic of Belarus. She has served on committees to develop maternal nutrition guidelines both nationally and internationally. Dr. Oken received her medical degree from Harvard Medical School in 1996 and completed her internship and residency in internal medicine and pediatrics at the Harvard Combined Program. She completed her fellowship in general internal medicine at Harvard Medical School and obtained her master's degree in public health from the Harvard School of Public Health. Dr. Oken is a member of the workshop planning committee.

Elizabeth N. Pearce, M.D., M.Sc., received her undergraduate and medical degrees from Harvard and a master's degree in epidemiology from the Boston University School of Public Health. She completed her residency in internal medicine at Beth Israel Deaconess Medical Center, and her fellowship in endocrinology at Boston University. She is a professor of medicine at Boston University School of Medicine in the Section of Endocrinology, Diabetes, and Nutrition. She was the 2018-2019 president of the American Thyroid Association. She also serves as the regional coordinator for North America for the Iodine Global Network. She is an associate editor at *Thyroid* and at *Endocrine Practice* and has served on multiple additional editorial boards, including those for the *Journal of Clinical Endocrinology and Metabolism*, *Clinical Endocrinology*, and *Lancet Diabetes & Endocrinology*. She recently co-chaired the American Thyroid Association's Thyroid in Pregnancy Guidelines Task Force. Her research interests include the sufficiency of dietary iodine in the United States, thyroid function in pregnancy, the thyroid effects of environmental perchlorate exposure, and the cardiovascular effects of subclinical thyroid dysfunction. Dr. Pearce was the 2011 recipient of the American Thyroid Association's Van Meter Award for outstanding contributions to research on the thyroid gland and the 2018 Women in Thyroidology Woman of the Year.

Rafael Pérez-Escamilla, Ph.D., is Professor of Public Health, Director of the Office of Public Health Practice, and Director of the Global Health Concentration at the Yale School of Public Health. He is a member of the National Academy of Medicine (elected in 2019). His global public health nutrition and food security research program has led to improvements in breastfeeding programs, iron deficiency anemia among infants, household food security measurement and outcomes, and maternal, infant, and young child nutrition counseling programs. His health disparities research involves assessing the impact of community health workers at improving behavioral and metabolic outcomes among Latinos with type 2 diabetes. He has published over 330 research articles, 3 books, and numerous journal supplements, book chapters, and technical reports. He is a former member of the National Academies of Sciences, Engineering and Medicine (NASEM) Food and Nutrition Board. He served in the 2010 and 2015 U.S. Dietary Guidelines Advisory Committees. He has been a senior advisor to maternal-child health and nutrition programs as well as household food security projects funded by WHO, PAHO, UNICEF, FAO, UNESCO, United Nations Development Programme, Centers for Disease Control and Prevention, USDA, USAID, The World Bank, the Gates Foundation, the Robert Wood Johnson Foundation, the Family Larsson-Rosenquist Foundation, and the Governments of Mexico, Brazil, and Colombia. In 2015-2016, he served as Chair of the Robert Wood Johnson Foundation-Healthy Eating Research Panel on Best Practices for Promoting Healthy Nutrition, Feeding Patterns, and Weight Status for Infants and Toddlers from Birth to 24 Months, which authored the report, *Feeding Guidelines for Infants and Young Toddlers: A Responsive Parenting Approach*. He obtained his B.S. in chemical engineering from the Universidad Iberoamericana in Mexico City and his M.S. in food science and his Ph.D. in nutrition from the University of California at Davis.

Leanne M. Redman, Ph.D., FTOS, is a professor at Pennington Biomedical Research Center within the Louisiana State University System where she directs the Reproductive Endocrinology and Women's Health Research Program and the Maternal and Infant Nutrition Core Laboratory. Dr. Redman directs a million dollar research portfolio that is focused on how lifestyle, in particular nutrition and physical activity, influence body composition and metabolism. The cornerstone of this work attempts to understand how best to work with primary care physicians and within the WIC programs to counsel pregnant women on healthy weight gain during pregnancy and to understand how pregnancy pounds affect the future health of mom and baby. Dr. Redman is a scientific co-investigator several studies involving exercise, weight management, breastfeeding, and the management of insulin resistance including a study in women with gestational diabetes. Her work is at the forefront of developing and testing e-health technologies, such as smartphone apps, for delivery of complex lifestyle interventions and enhancing the compliance of

individuals to national dietary and exercise guidelines. Her work has produced more than 150 research articles on nutrition, exercise, and weight management. Dr. Redman holds a Ph.D. in physiology and OB-GYN from the University of Adelaide in Australia and completed 4 years of post-doctoral training at Ohio University and Pennington Biomedical Research Center.

Anna Maria Siega-Riz, Ph.D., is Dean and Professor in the School of Public Health and Health Sciences at the University of Massachusetts Amherst. Dr. Siega-Riz's research focuses on the first 1,000 days of life by understanding the influence of maternal weight status and dietary patterns/behaviors in the etiology of adverse pregnancy outcomes, including but not limited to, gestational diabetes, pregnancy induced hypertension, pre-eclampsia, preterm birth, and inadequate or excessive gestational weight gain. She is also exploring food reward and sensitivity among pregnant women and early determinants of childhood obesity in the Pregnancy Eating Attributes (PEAS) study funded by NICHD with colleagues at the University of North Carolina and the association of maternal preconceptional health with childhood eating and weight status among Hispanics in the Hispanic Community Health Study/Study of Latinos funded by National Institute of Diabetes and Digestive and Kidney Diseases. Other research interests include examining the determinants and consequences of food insecurity and the implications of food policy on health outcomes. Dr. Siega-Riz holds a B.S. from The University of North Carolina at Chapel Hill, an M.S. from The University of North Carolina in Greensboro, and a Ph.D. from The University of North Carolina at Chapel Hill. Dr. Siega-Riz has served on five National Academies consensus studies, two workshop planning committees, and currently serves on the division committee for the Health and Medicine Division. Dr. Siega-Riz is the chair of the workshop planning committee.

Janet Thorlton, Ph.D., M.S., R.N., CNE, is a clinical associate professor with the Department of Health Systems Science, Urbana Campus at the University of Illinois-Chicago College of Nursing. The goal of her research is to reduce preventable harm from substance misuse, abuse, and errors. Her program of research has led to mining and analyzing large national datasets, using findings to raise awareness and thereby improve population health, promoting health literacy, reducing preventable harm, and building health policy competency. In 2018, Dr. Thorlton was honored with the Nursing Informatics Practice Award at the Summer Institute in Nursing Informatics: University of Maryland School of Nursing. She has served as a reviewer for several journals including, but not limited to, *Western Journal of Nursing Research*, *American Journal of Public Health*, *Journal of School Nursing*, and *Annals of Epidemiology*. Some of her professional memberships include the Sigma Theta Tau International, Midwestern Nursing Research Society, Healthcare Information and Management Systems Society. Dr. Thorlton received her B.S.N. from Lakeview College of Nursing and her Master's and Ph.D. in nursing from the University of Illinois at Chicago-College of Nursing.