



New Jersey Institute for Food, Nutrition, and Health
Rutgers, The State University of New Jersey
61 Dudley Road, New Brunswick, NJ 08901-8520

2nd IFNH RESEARCH DAY
November 04, 2020

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AGENDA

8.30-8.40am **Welcome and Report from the IFNH Director (M. Gloria Dominguez-Bello)**

8.40-9.25am **Annual Reports from IFNH Leadership (3 min presentations)**

8.40-9.05am IFNH Center Directors (3 min presentations)

1. George M. Carman, **Rutgers Center for Lipid Research**
2. James Simon, **Center for Agricultural & Food Ecosystems (RUCAFE)**
3. Daniel Hoffman, **Center for Childhood Nutrition Research**
4. Liping Zhao, **Center for Nutrition, Microbiome, and Health**
5. Sue Shapses, Center for **Nutrition, Exercise, and Metabolism**

9.05-9.15am IFNH Program Directors (3 min presentations)

1. Joshua Miller, **One Nutrition Program**
2. Peggy Policastro, **Culinary Health Program**
3. Daniel Hoffman, **NJ Health Kids Initiative**

9.15-9.25am IFNH IFNH-affiliated Core Directors (3 min presentations)

1. *Harini Sampath/James Simon/Qingli Wu - Analytical Core*
2. *Sue Shapses – Clinical Facilities/Kinesiology Core/Body Composition/Bone Core*
3. *Yan Lam - Microbiome Analysis Core*

9.25-9.30am *Break - 5 min*

9.30-12.00pm. **Research Presentations**

9.30-10.00am **Rutgers Center for Lipid Research–** (3 min presentations)

Chair: George M. Carman

Phosphatidate phosphatase hops and scoots along the membrane phospholipid bilayer. Joanna Kwiatek (Carman Lab - Department of Food Science, SEBS)

Polyphenol-induced improvements in glucose metabolism are associated with bile acid signaling to intestinal farnesoid X receptor. Kevin Tveter (Roopchand Lab - Department of Food Science, SEBS)

Lack of beta-carotene 9',10' dioxygenase (BCO2) impacts cardiac postnatal growth and energy metabolism in female mice. Chelsea Holloway (Quadro Lab - Department of Food Science, SEBS)

Role of Intestinal SCD1 in whole-body lipid metabolism and metabolic health. Natalie Burchat (Sampath Lab - Department of Nutritional Sciences, SEBS)

Utilizing molecular dynamics simulations to elucidate a role for bacterial ceramides. Anushriya Subedy (Klein Lab – Department of Biology, Rutgers Camden)

Fibroblast growth factor 15 regulation of drug metabolizing enzymes. Daniel Rizzolo (Guo Lab – Department of Pharmacology and Toxicology Ernest Mario School of Pharmacy and EOHSI)

10.00-10.30am **Center for Childhood Nutrition Research Presentations**– (3 min presentations)

Chair: Daniel Hoffman

Use of adolescent “citizen scientists” to address obesity among Mexican immigrant families. Karen T. D’Alonzo PhD RN APNC FAAN (Rutgers School of Nursing)

Drivers of food choice among women living in informal settlements in Kenya. Shauna Downs, PhD (Rutgers School of Public Health, Department of Urban-Global Public Health)

Who benefits from economic growth? The impact of parental occupation on child undernutrition in low- and middle-income countries. Mark McGovern, PhD (Rutgers School of Public Health, Department of Health Behavior, Society and Policy)

Strengthening vegetable value chains for improved nutrition in a Kenyan slum: Evaluation of a pilot program. Emily Merchant, Doctoral Candidate (Simon Lab, SEBS)

Grow. Prepare. Eat: A Virtual Food Literacy Program. Erin Comollo, EdD (New Jersey Healthy Kids Initiative, New Jersey Institute for Food, Nutrition, and Health)

Rutgers Culture of Health School Program. Sara Elnakib, RD, MPH (Rutgers Cooperative Extension, Department of Family & Community Health Sciences)



10.30-10.35am *Break - 5 min*

10.35-11.05am ***Center for Nutrition, Microbiome and Health Presentations***– (10min presentations)
Chair: Liping Zhao

The human microbiome in subsistence economy villages with different exposure to medicines. Jincheng Wang (Dominguez-Bello Lab, Department of Biochemistry and Microbiology, SEBS)

Sex-dependent effects of 7,8-dihydroxyflavone on metabolic health are associated with alterations in the host gut microbiome. Priyanka Sharma (Sampath Lab, New Jersey Institute for Food, Nutrition, and Health, SEBS)

Robust dipolar network core for human metabolic health. Guojun Wu (Zhao Lab, Department of Biochemistry and Microbiology, SEBS)

11.05-11.35am ***Center for Nutrition, Exercise and Metabolism*** – (3 min presentations)
Chair: Sue Shapses

Relationships between sleep and health in young adults. Andrea M. Spaeth (Kinesiology and Health, SAS)

Diet quality improves with higher protein intake during modest weight loss. Anna Ogilvie (Shapses Lab - Department of Nutritional Sciences, SEBS)

Murine gut microbial communities influenced by physical activity and diet, but not gender. Robert A. Dowden (Campbell Lab - Department of Kinesiology and Health, SAS)

Nocturnal blood pressure dipping relates to metabolic insulin sensitivity but not vascular function in metabolic syndrome. Nathan R. Stewart (Malin Lab - Department of Kinesiology and Health, SAS)

Alcohol, cannabis, and physical activity behaviors of college freshmen: evaluating sex differences. Kelsey Piersol (Bates & Buckman Labs - Kinesiology and Health, SAS)

The role of Atf4 in the response to dietary sulfur amino acid restriction. William O. Jonsson (Anthony Lab - Department of Nutritional Sciences, SEBS)

11.35-11.40am *Break - 5 min*



11.40am-12.10pm **Center for Agriculture and Food Ecosystems** – (3 min presentations)
Chair: Jim Simon

Reimagining Newark New Jersey's food supply chain system. Kevin Lyons (RU-Business School, Public Private Community Partnerships Newark)

Ag in the City: Cultivating food, health & environmental justice in the Garden State. Meredith Taylor (Office of Urban Extension and Engagement, Dept. Landscape Architecture, SEBS)

Local food and sustainability: Possibilities and problems. Ethan Schoolman (Dept. of Human Ecology, SEBS)

Using ethnic foods and produce to improve food security in the East Coast. Ramu Govindasamy (Chair, DAFRE, SEBS)

Reimagining farming and food systems education at Rutgers. Xenia Morin and Mark Robson (Dept. Plant Biology, SEBS)

12.10pm **Closing remarks from the IFNH Director (M. Gloria Dominguez-Bello)**

12.15-1.15pm **Extended NExT Flash Research Session**
Chair: Sue Shapses

BIOS

Carman, George M., PhD. Director, Rutgers Center for Lipid Research

Dr. Carman is the Board of Governors Professor of Food Science and Founding Director of the Rutgers Center for Lipid Research, New Jersey Institute for Food, Nutrition, & Health. He received his B.A. degree from William Paterson University, M.S. degree from Seton Hall University, and Ph.D. degree from the University of Massachusetts. His postdoctoral training was at the University of Texas Medical School in Houston. Dr. Carman's laboratory is recognized internationally for its work on the biochemical and molecular characterization of phospholipid metabolism/signaling in the yeast *Saccharomyces cerevisiae*. He has authored over 200 refereed publications and has written several review articles on phospholipid metabolism and on its regulation. Dr. Carman is a Fellow of the American Academy of Microbiology, and is the recipient of the Avanti Award in Lipids-American Society for Biochemistry and Molecular Biology (ASBMB), Supelco/Nicholas Pelick Research Award-American Oil Chemists Society, Faculty Mentor of the Year Award-Compact for Faculty Diversity, Chancellor's Award Lectureship in Neuroscience-LSU School of Medicine, Journal of Lipid Research Lectureship Award, Selman A. Waksman Honorary Lectureship Award, Rutgers University Board of Trustees Award for Excellence in Research, and the New Jersey Agricultural Experiment Station Research Excellence Award. He is a former chair and organizer of the Gordon Research Conference on Lipid Metabolism and the Keystone Symposium on Lipid Second Messengers and served as chair of the ASBMB Program Planning Committee and the ASBMB Meetings Committee. He served as President of the Theobald Smith Society, the New Jersey branch of the American Society for Microbiology, and served on the Physiological Chemistry and the Biochemistry and Biophysics of Membranes Study Sections of the National Institutes of Health and served as Associate Editor of the Journal of Biological Chemistry. Dr. Carman currently serves as an Associate Editor of the Journal of Lipid Research and Executive Editor of Analytical Biochemistry.



Dominguez-Bello, Maria Gloria, PhD. Director, NJ Institute for Food, Nutrition, and Health

Dr. Dominguez-Bello is the Henry Rutgers Professor of Microbiome and Health at Rutgers University, affiliated to the Department of Biochemistry and Microbiology, and to the Department of Anthropology. She is also the interim Director of the Institute for Food Nutrition and Health (IFNH). She is a Fellow of the American Academy of Microbiology, and of the Infectious Disease Society of America (IDSA), and has been a member of the Editorial Board or a reviewer at several scientific journals, and invited reviewer at funding entities, including NSF, NIH, and different Foundations. She has published extensively on vertebrate-microbial symbiosis, acquisition and development of the human microbiome, effects of antimicrobial modern practices on the microbiome, and strategies for restoration. She works on gradients of urbanization in South America and Africa, through global synergistic collaborations. She is leading the global initiative of the Microbiota Vault, to preserve the diversity of the microbes relevant to human health.

Hoffman, Daniel J., PhD. Director, Center for Childhood Nutrition Research

Dr. Hoffman received his PhD in Nutritional Biochemistry and Physiology in 1999 from the Tufts University Friedman School of Nutrition Science and Policy, completed post-doctoral training at Columbia University and is now an Associate Professor in the Departments of Nutritional Sciences and Epidemiology and the Director of the Center for Childhood Nutrition Research (CCNR). Dr. Hoffman's area of expertise is energy metabolism, body composition, and international nutrition. As the director of the CCNR, Dr. Hoffman is responsible for coordinating interdisciplinary research on childhood nutrition as well as managing program development for a Robert Wood Johnson Foundation initiative and the Rutgers Program in International Nutrition. The focus of Dr. Hoffman's research program is to study the relationship between poor growth in childhood and the development of chronic diseases in adulthood. To accomplish this, Dr. Hoffman directs or collaborates on research projects in Brazil and Mexico to better understand how poor growth early in life influences metabolism and body composition later in life as potential risk factors for chronic diseases. In addition, Dr. Hoffman is a Co-Principal Investigator of a project in Kenya and Zambia to evaluate the impact of increased intake of African-Indigenous Vegetables on dietary diversity and health in rural households. An author of numerous papers and chapters on energy metabolism, body composition, and pediatric nutrition, Dr. Hoffman is also the Deputy Editor of the British Journal of Nutrition and Public Health Nutrition and a member of the Editorial Board of Journal of Nutrition and Annals in Human Biology. Aside from academic work, Dr. Hoffman is an expert consultant to the International Atomic Energy Agency of the United Nations where he provides advising on nutrition-related projects using stable isotopes.

Lam, Yan, PhD. Director, Microbiome Core.

Dr. Lam is an Assistant Research Professor at the Department of Biochemistry and Microbiology. Dr. Lam received nutritional biochemistry and clinical dietetics training in Australia. In 2017, she was invited to join Dr. Liping Zhao's lab at Rutgers University to pursue research in the new area of microbiome nutrition. Dr. Lam leads the newly established Rutgers Center for Microbiome Analysis, also part of the Microbiome Core at IFNH, which aims to facilitate high-quality multi-disciplinary microbiome research within Rutgers and beyond.

Miller, Joshua, PhD. Director, One Nutrition

Dr. Miller is Professor and Chair of the Department of Nutritional Sciences in the School of Environmental and Biological Sciences at Rutgers and is the coordinator of the IFNH One Nutrition program. Dr. Miller's primary expertise is in B vitamins (folate, vitamin B12, vitamin B6, riboflavin) and one-carbon metabolism. His research focuses on the influences of B vitamins and related metabolites on cognitive function and risk of Alzheimer's disease and dementia in older adults. He also has research interests in novel strategies for assessing vitamin B12 status and absorptive capacity, and the influence of riboflavin on blood pressure in individuals genetically predisposed to hypertension. His work has



been funded by the NIH, the American Cancer Society, and the Breast Cancer Research Programs of the State of California and the U.S. Department of Defense.

Policastro, Peggy, PhD, RDN. Director, Culinary Health Program

Dr. Policastro is the Director of the Culinary Health Program at the IFNH. Dr. Policastro works with children and adolescents using Behavioral Economics to nudge individuals towards healthier food choices. Dr. Policastro is a Registered Dietitian who was named the 2012 Academy of Nutrition and Dietetics Nutrition Educator of the Year, recipient of 2016 Mary Abbott Hess Award for Recognition of an Innovative Food/Culinary Effort and was recently named 2020 Top Women in Metro New York Foodservice & Hospitality-Education Category. She directs the IFNH Student Ambassador Program and was named 2018 Rutgers University Student Supervisor of the Year. Dr. Policastro works closely with Chefs to institute Menus of Change principles and is an active member of the Menus of Change University Research Collaborative where she holds the position of Chair of the Research Working Group. Peggy holds a PhD in Interdisciplinary Studies-Nutritional Science and Psychology from Rutgers University

Sampath, Harini, PhD. Co-Director, Bioanalysis and Metabolomics Core

Dr. Sampath is an Assistant Professor in the Department of Nutritional Sciences and the New Jersey Institute for Food, Nutrition, and Health, at Rutgers University. In her work, she uses her training in Biochemical and Molecular Nutrition to identify nutritionally and genetically-modified pathways leading to metabolic diseases such as type 2 diabetes and cardiovascular disease. Her work is funded by the NIH, the Marie-Curie Foundation, and the American Heart Association and has been published in numerous journals including the Journal of Biological Chemistry, the American Journal of Physiology, Cell Metabolism, and Endocrinology. Harini also serves on the Editorial Board of *Biochimica et Biophysica Acta – Molecular and Cell Biology of Lipids* and on the Steering Committee for the International Conference on the Bioscience of Lipids (ICBL). Harini received her Ph.D. from the University of Wisconsin-Madison in 2008 and her B.S. from the University of New Hampshire in 2002.

Simon, James, PhD. Director, Center for Agriculture and Food Ecosystems (RUCAFE)

Dr. Simon serves as the Director of the Center for Agricultural Food Ecosystems (RUCAFE), whose mission is to bring a uniquely diverse and holistic approach to researching food systems and designing innovative and culturally appropriate methods to sustainably nourish our growing human population in balance within our global ecosystems. Simon, a Distinguished Professor of Plant Biology, also serves as Director of the New Use Agriculture and Natural Plant Products Program (NUANPP), SEBS, which seeks to identify new crop opportunities, new applications of bioactive and nutritious plant compounds and new products from fruits, vegetables, herbs and marine organisms. Simon's research programs are funded by the NIH, USDA, USAID and State Department and focus on food systems, improving food security and using agriculture as key economic driver to improve income generation and human capacity development. As a plant biologist, Simon's expertise is also in plant genetics and breeding for disease resistance, nutrition, and flavor; community development; food safety and quality control. He has earned many national and international awards including The Chancellor's Award for International Impact, Distinguished Service to Agriculture Award, Special Service Award, Association for International Agriculture & Rural Development, Recipient of the International Excellence Award for Scientific Excellence in a USAID Collaborative Support Research Program, Board for International Food Agricultural Development, USAID, and other industry and academic awards for research excellence and impact. Internationally, Simon developed market-first, science-driven models of commercialization to improve food security and income generating opportunities for vulnerable populations that over time led to research projects around the world with a focus in sub-Saharan Africa. Simon's strength and interest is in bringing together multi-disciplinary teams of faculty, universities and the public and private sector into strategic partnerships that build new or strengthen food ecosystems.



Shapses, Sue, PhD, RDN. Director for the Center for Human Nutrition, Exercise and Metabolism

Dr. Shapses is the Director for the Center for Human Nutrition, Exercise and Metabolism at the Rutgers Institute for Food, Nutrition, Health, a Professor in the Department of Nutritional Sciences, and an Adjunct Professor in the Department of Medicine, Rutgers-RWJ Medical School. She contributes to team leadership in the NJ Obesity Group. She received her MS and PhD from Columbia University (IHN) followed by postdoctoral training at Albert Einstein College of Medicine (Critical Care Medicine) and at Columbia University (Orthopaedic Biochemistry) with more recent training in the Department of Endocrinology, University of Sydney, Australia. Dr. Shapses has served on the Institute of Medicine committee to develop the current Dietary Reference Intakes for vitamin D and calcium. She devotes time to serve as Associate Editor for the Am. J. Clin. Nutr., and as Editor for Nutrition, Exercise & Lifestyle Section of Current Osteoporosis Reports. Dr. Shapses teaches undergraduate and graduate students and works closely with trainees on clinical and translational projects. Dr. Shapses' research emphasizes the endocrine regulation of obesity and osteoporosis using caloric restriction and nutrients to study gastrointestinal absorption and bone metabolism. Studies also address dietary protein and quality, dietary factors in obesity affecting inflammation and glycemic indices.

Wu, Qingli, PhD. Co-Director, Bioanalysis and Metabolomics Core

Dr. Wu is the co-Director of the new Bioanalysis and Metabolomics Core in the IFNH and the New Use Agriculture and Natural Plant Products Program. As an Associate Research Professor, Department of Plant Biology his expertise is in natural products chemistry and bioanalysis for bioavailability and metabolomics. Dr. Wu's research focuses on discovering new applications of bioactive and nutritious plant compounds and new products from botanicals. Wu has served as co-PI with in several national NIH consortium leading work in quality control and bioanalysis for the botanical/bioanalysis cores of different NIH/NCCAM programs, (i) Purdue University and University of Alabama National Botanical Center on Age Related Diseases (2000-2010); (ii) NIH Center of Excellence for Research on Complementary and Alternative Medicine for Alzheimer's disease on the protective roles provided by grape derived polyphenolic compounds (2007-2012) and (iii) NIH Centers for Advancing Research on Botanicals and Other Natural Products (CARBON) Program "Dietary Botanicals in the Preservation of Cognitive and Psychological Resilience" (2015-2021) and most recently the new U19 NIH CARBON program, "Influence of Dietary Botanical Supplements on Biological and Behavioral Resilience" the latter three led by Mt. Sinai Medical School, and is a co-PI with Nick Bello for an NIH R01 titled "Effects of raspberry ketone on body weight and metabolic outcomes in obesity" (2017-2022).

Zhao, Liping, PhD. Director, Center for Nutrition, Microbiome, and Health

Dr. Zhao is the Eveleigh-Fenton Chair of Applied Microbiology, Department of Biochemistry and Microbiology at the School of Environmental and Biological Sciences. His work consists of developing molecular and genomic tools for systems understanding and predictive manipulation of the complex microbial communities in human and animal guts. His research addresses interactions between diet and gut microbiota in onset and progression of chronic diseases such as obesity and diabetes, and also in formulating interventions integrating traditional Chinese medicine and medicinal foods into modern day diet, to modulate the relationship between gut microbiota and human host, to achieve preventive health care.

