YOU ARE WHAT YOUR BUGS EAT!

DIET, THE GUT MICROBIOTA AND ITS METABOLOME IN HUMAN HEALTH AND DISEASE

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PROGRAM

Welcome and Introduction
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Distinguished Speaker

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Open Forum

Closing
SARAH OHLHORST, MS, RD

NCFAR is a nonprofit, nonpartisan, consensus-based and customer-led coalition that brings food, agriculture, nutrition, conservation and natural resource stakeholders together with the food and agriculture research and extension community, serving as a forum and a unified voice in support of sustaining and increasing public investment at the national level in food and agricultural research, extension, and education.
ABSTRACT
The human gut contains a vast number of microorganisms known collectively as the “gut microbiota”. Despite its importance in maintaining the health of the host, growing evidence suggests the gut microbiota may also be an important factor in the pathogenesis of various diseases, a number of which have shown a rapid increase in incidence over the past century. In some of these diseases, such as the inflammatory bowel diseases (IBD), the microbiota is “dysbiotic” with an altered community structure and decrease in diversity. If the dysbiotic microbiota plays a role in disease pathogenesis, interventions that modify its composition might be a strategy to treat certain disease processes. The composition of the microbiota can be influenced by many factors including age, genetics, host environment, and diet. Diet has an impact upon not only the composition of the gut microbiota but also its function in part through small molecule production that may influence development of both immune-mediated and metabolic diseases. Indeed, there is epidemiologic data associating diet with the development of IBD as well as evidence that diet can influence the microbiota in a manner that impacts upon the development of intestinal inflammation. Based on this evidence, studies are now underway to examine the effect of defined formula diets, an effective therapeutic modality in Crohn’s disease, on both the gut microbiota and its metabolome as a therapeutic probe with the hope of better defining the “healthy” diet in patients with IBD. Ultimately, dietary manipulation of the gut microbiota and its metabolome may be a modality to both maintain health and treat disease.

SPEAKER BIOGRAPHY
Gary D. Wu, M.D. is the Ferdinand G. Weisbrod Professor of Medicine at the University of Pennsylvania Perelman School of Medicine where he is the Associate Chief for Research in the Division of Gastroenterology, Associate Director of the Center for Molecular Studies in Digestive and Liver Disease, and Co-Director of the PennCHOP Microbiome Program. He was the inaugural Director and Chair of the Scientific Advisory Board for the American Gastroenterological Association Center for Gut Microbiome Research and Education and is an elected member of both the American Society for Clinical Investigation and the American Association of Physicians. Research programs in the Wu laboratory focus on the mutualistic interactions between the gut microbiota and its host with emphasis on metabolism including nitrogen balance, intestinal oxygen regulation, and epithelial intermediary metabolism. Of particular interest is the effect of diet on the gut microbiome and its relationship to therapeutic responses associated with the use of defined formula diets in the treatment of Crohn’s disease. Insights gained from these projects will hopefully lead to the development of better diets for patients with IBD.
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