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**Health and Medicine Division
Food and Nutrition Board**

**Examining Special Nutritional Requirements in Disease States:
A Workshop**

**Planning Committee on Examining Special Nutritional
Requirements in Disease States**

**April 2-3, 2018
The National Academy of Sciences Building
Lecture Room
2101 Constitution Avenue, NW
Washington, DC**

Workshop Objectives

- Examine pathophysiological mechanisms by which specific diseases impact nutrient metabolism and nutrition status and whether this impact would result in nutrient requirements that differ from the Dietary Reference Intakes.
 - Explore the role of genetic variation in nutrition requirements.
 - Examine nutrient requirements in certain chronic conditions or acute phases for which emerging data suggest a contribution of nutrition status to disease outcomes. Consider the scientific evidence needed to establish such relationships and discuss principles about the relationship between nutrition requirements and specific diseases.
 - Explore how a disease state impacts nutrient metabolism and nutrition status and, conversely, what is the impact of nutrition status on the disease state.
- Identify promising approaches and challenges to establishing a framework for determining special nutrient requirements related to managing disease states.

WORKSHOP DAY 1: APRIL 2, 2018, 8:00 AM – 5:15 PM

8:00 AM Registration

Session 1: Introduction of the Concepts and Context of the Workshop

Moderator: Barbara Schneeman, University of California, Davis

8:30 Origins of the Workshop
*Barbara Schneeman, University of California, Davis, Planning
Committee Chair*

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- 8:50 What Defines a Special Nutritional Requirement?
Patsy Brannon, Cornell University
- 9:10 The Underlying Biological Processes of Special Nutritional
Requirements
Patrick Stover, Texas A&M University
- 9:30 Moderated Panel Discussion and Q&A
- 10:00 Break

Session 2: Addressing Nutrient Needs due to Loss of Function in Genetic Diseases

Moderator: Erin MacLeod, Children's National Health System

- 10:20 Understanding the Basis of Nutritional Needs in PKU
Denise Ney, University of Wisconsin-Madison
- 10:40 Nutritional Inadequacies in Mitochondrial-Associated Metabolic
Disorders
Marni Falk, The Children's Hospital of Philadelphia (via Zoom)
- 11:00 Contribution of Nutrients in Complex Inborn Errors of Metabolism:
The Case of Methylmalonic Aciduria (MMA)
*Charles Venditti, National Human Genome Research Institute,
National Institutes of Health*
- 11:20 Lessons Learned: What We Know about Nutrition Management for
Inborn Errors of Metabolism
Sue Berry, University of Minnesota
- 11:40 Moderated Panel Discussion and Q&A
- 12:00 – 1:00 PM Lunch

Session 3: Disease-Induced Loss of Function and Tissue Regeneration

Moderator: Alex Kemper, Nationwide Children's Hospital

- 1:00 Examples of GI Dysfunction and Malabsorption of Nutrients:
Intestinal Failure
Chris Duggan, Boston Children's Hospital (via Zoom)
- 1:30 Examples of GI Dysfunction and Malabsorption of Nutrients: Cystic
Fibrosis
*Sarah Jane Schwarzenberg, University of Minnesota Masonic
Children's Hospital*
- 1:50 Nutritional Requirements for Inflammatory Bowel Disease
Dale Lee, Seattle Children's Hospital

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- 2:10 Blood-Brain Barrier Dysfunction and Resulting Brain Nutrient Deficiencies
Martha Field, Cornell University
- 2:30 Macro- and Micronutrient Homeostasis in the Setting of Chronic Kidney Disease
Alp Ikizler, Vanderbilt University
- 2:50 Moderated Panel Discussion and Q&A
- 3:15 Break

Session 4: Diseased-Induced Deficiency and Conditionally Essential Nutrients in Disease

Moderator: Bernadette Marriott, Medical University of South Carolina

- 3:30 Arginine as an Example of a Conditionally Essential Nutrient: Sickle Cell Anemia and Surgery
Claudia Morris, Emory University School of Medicine
- 3:50 Nutrition Needs in Hypermetabolic States: Burns, Cachexia, and Surgery
Paul Wischmeyer, Duke University School of Medicine
- 4:10 Traumatic Brain Injury: Pathophysiological Mechanisms and Potential Nutrient Needs
Angus Scrimgeour, U.S. Army Research Institute of Environmental Medicine
- 4:30 Metabolic Turnover, Inflammation, and Redistribution: Impact on Nutrient Requirements
Jesse Gregory, University of Florida
- 4:50 Moderated Panel Discussion and Q&A
- 5:15 Meeting adjourns

WORKSHOP DAY 2: APRIL 3, 2018, 8:00 AM – 1:00 PM

8:00 – 8:30 AM Registration

Session 5: Building the Evidence Base: Research Approaches for Nutrients in Disease States

Moderator: David Suskind, University of Washington

- 8:30 Type and Strength of Evidence Needed for Determining Special Nutrient Requirements
Amanda MacFarlane, Health Canada

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8:50	Identification and Validation of Biomarkers in Disease States <i>Patrick Stover, Texas A&M University</i>
9:10	Innovative Causal Designs for Efficacy. What Type of Evidence is Needed? <i>Nicholas Schork, J. Craig Venter Institute</i>
9:30	Examples of a Complex Disease <ul style="list-style-type: none">• Inflammatory Bowel Disease <i>Gary Wu, University of Pennsylvania</i>• Cancer <i>Steve Clinton, Ohio State University</i>
10:15	Moderated Panel Discussion and Q&A
10:45	Break
Session 6: Future Opportunities	
11:00	Principles Learned from Workshop Presentations <i>Barbara Schneeman, University of California, Davis</i>
11:20	Panel Discussion <i>Susan Barr, University of British Columbia</i> <i>Kristen D'Anci, ECRI Institute</i> <i>Tim Morck, Spectrum Nutrition LLC</i> <i>Ginanne Stallings, University of Pennsylvania Perelman School of Medicine</i>
12:30	Sponsor Remarks <i>Paul Coates, National Institutes of Health</i> <i>Patricia Hansen, U.S. Food and Drug Administration</i> <i>Caren Heller, Crohn's and Colitis Foundation</i> <i>Chantal Martineau, Health Canada</i> <i>Sarah Ohlhorst, American Society for Nutrition</i> <i>Alison Steiber, Academy of Nutrition and Dietetics</i>
1:00	Meeting adjourns