



December 14, 2018

Christopher J. Lynch, Ph.D.  
Executive Secretary of the NIH Nutrition Research Task Force  
Director, Office of Nutrition Research, NIDDK  
Chief, Nutrition Research Branch, DDN, NIDDK  
National Institutes of Health  
Room 6125  
6707 Democracy Blvd  
Bethesda, MD 20892

Re: NOT-DK-19-004; “Request for Information (RFI): Soliciting Input on the Draft Strategic Plan for NIH Nutrition Research”

Dear NIH Nutrition Research Task Force:

The American Society for Nutrition (ASN) commends the National Institutes of Health (NIH) for developing the first ever ten-year strategic plan focused on the future of nutrition research supported by the agency. ASN appreciates the opportunity to comment on the Draft Strategic Plan for NIH Nutrition Research and is encouraged to see that many of the nutrition research priorities and gaps delineated in ASN’s own Nutrition Research Priorities<sup>1</sup> are also found in this draft strategic plan. ASN is a scientific, professional society with more than 6,500 members who conduct nutrition research to help all individuals live healthier lives. ASN supports the dissemination and application of nutrition science to improve public health and clinical practice worldwide. ASN is pleased that nutrition research is receiving rigorous discussion and consideration at NIH, and welcomes the opportunity to serve as a resource to NIH during implementation of the strategic plan for nutrition research.

ASN supports the appropriateness of the research priorities listed in the plan and of the strategies proposed to achieve them, but has suggestions for additional concepts that could be incorporated into the strategic plan for NIH nutrition research:

- NIH should expand support for dose-response studies within the field of nutrition. Although often smaller, dose-response studies are also tightly controlled. With additional support leading to more dose-response studies, data could then be aggregated to reach better conclusions regarding the impact of nutrition variables on health status and chronic disease. This is particularly important for any study looking at nutrient intake and biomarkers of status and/or function and may be especially noted for Theme 2-5: Determine Mechanisms by which Dietary Patterns Affect Health Status and

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<sup>1</sup> Ohlhorst S, Russell R, Bier D, et al. [Nutrition research to affect food and a healthy life span](#). *Am J Clin Nutr* 2013;98: 620-625.

Chronic Disease. Data from dose-response studies is also essential for determining requirements that are used in updating current Dietary Reference Intakes (DRIs) and/or determining new ones.

- It would be beneficial for NIH nutrition-related “omic” and “big data” studies to clearly outline data analysis plans, including assessment of Type 1 statistical errors, in repositories such as ClinicalTrials.gov, before research efforts are undertaken.
- The importance of model systems to nutrition research could be more explicitly mentioned and incorporated throughout the strategic plan for NIH nutrition research (in particular for Theme 3: Explore Individual Variability in Response to Diet Interventions to Inform Nutrition Science, Improve Health, and Prevent Disease and Theme 4: Enhance Clinical Nutrition Research to Improve Health Outcomes in Patients). Elucidating molecular mechanisms is very difficult to do without model systems.
- Nutrition research including dietary bioactive components should be more explicitly mentioned and incorporated throughout the strategic plan for NIH nutrition research. More research is needed on the role of nutritive and non-nutritive components, such as flavanol-based and other dietary bioactives, caffeine, pre/probiotics, and various forms of fiber, in health and disease prevention. Bioactive components are currently sparsely mentioned throughout the plan and no strategies propose in-depth research related to dietary bioactive components.

Additional concepts for consideration and inclusion in the strategic plan for NIH nutrition research are highlighted below, under the most appropriate priority theme:

***Theme 1. Investigate Nutritional Biochemistry, Physiology, and the Microbiome***

***1-1. Advance Nutritional Biochemistry and the Bioinformatics of Nutrition-Related Pathways***

Research efforts should be highly emphasized in the area of randomized controlled trials to test hypotheses regarding the role of the microbiome in disease processes independent of all other confounding factors. These trials must closely control nutritional intake and weight change in order to provide definitive evidence for the role of the microbiome in disease processes. Many current studies in this area are correlative and offer limited support for an independent role of the microbiome in human disease states and processes.

***1-2. Clarify the Integrative Physiology of Ingestive Behaviors***

Research to clarify the integrative physiology of ingestive behaviors should be integrated into studies on the effects of environmental variables (properties of food, etc.) on ingestive behavior in order to understand the relative contributions of each to the issues of over- and undereating.

***Theme 2. Assess the Role of Nutrition and Dietary Patterns in Development, Health, and Disease across Life Stages***

***2-1. Examine the Role of Prenatal Nutrition for the Health of Mother and Offspring and***

***2-2. Research Nutrition in the Birth-to-24 Month Period***

Because of the implication on adult health, interventional studies to prevent small for gestational weight birth offspring should be included within the research strategies highlighted.

***Theme 4. Enhance Clinical Nutrition Research to Improve Health Outcomes in Patients***

***4-5. Optimize Nutrition Interventions for Patients with Special Nutritional Requirements***

While Section 4.5 focuses on disease states currently, certain medical conditions also require optimal nutrition support recommendations for recovery, such as with burn and trauma patients. We know relatively little about vitamin and micronutrient handling and requirements and adequate provision of both during these states, although nutrition has a substantial effect on the recovery and outcome of burn and trauma patients. Also, it is critically important to understand mechanisms of nutrient loss in medical conditions and disease states to learn how to prevent these in mechanism-focused research. Examining Special Nutritional Requirements in Disease States: Proceedings of a Workshop<sup>2</sup> explores the evidence for special nutritional requirements in disease states and medical conditions that cannot be met with a normal diet. It may be useful to rephrase the future research activities that could be pursued in this Priority to include a broader range of conditions, as suggested below.

- Develop/identify specific biomarkers for morbidities associated with inborn errors of metabolism and other diseases and medical conditions involving special nutritional considerations.

***Theme 6. Develop and Refine Research Methods and Tools***

***6-7. Encourage the Use of Controlled Human Feeding Studies***

Intramural support is needed for facilities that conduct controlled human feeding studies, as well as extramural funding in this area for investigators. NIH should examine the various facilities that currently conduct controlled human feeding studies throughout the entire translational paradigm, including, but not limited to, General Clinical Research

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<sup>2</sup> National Academies of Sciences, Engineering, and Medicine. 2018. [Examining Special Nutritional Requirements in Disease States: Proceedings of a Workshop](#). Washington, DC: The National Academies Press.

Center metabolic kitchens, the Clinical and Translational Science Institute network, U.S. Department of Agriculture Human Nutrition Research Centers, and other Biomedical Research Centers. These specialized facilities run by experienced research personnel provide for reliable controlled human feeding studies that are difficult, if not impossible, to replicate elsewhere.

### ***Theme 7. Support Training to Build an Outstanding Nutrition Research Workforce***

While training focused on the microbiome and big data are important, the strategic plan on NIH nutrition research should include broad nutrition research pipeline development over the next ten years. The recruitment and strong support of a diverse and interdisciplinary nutrition research workforce throughout their training and early independent career is needed. Theme 7 identifies registered dietitians, yet many other health professionals should have additional training in nutrition science and research, including physicians, pharmacists and nurses. Novel opportunities to support new investigators should be explored, including university cross-collaborations, where a new investigator partners with a more senior investigator even if they are not at the same university. The future of nutrition science depends on the commitment of NIH, as well as other research funding institutes, to support the nutrition research enterprise.

As the strategic plan for NIH nutrition research is implemented, ASN would like to see this strategic plan translated into more NIH-supported nutrition initiatives, as well as dedicated funds to support specific and focused Funding Opportunity Announcements (FOAs) related to these important nutrition research topics. Continuous nutrition research funding has profound effects on the health of all Americans, as well as global communities. A continued commitment to fund these priority nutrition research areas from each of the agencies that make up the NIH Nutrition Research Task Force is essential to grow our fundamental knowledge of nutrition that will be translated into public health benefits.

ASN also encourages the NIH to review how nutrition-related research grants are faring and evaluated. Individuals with specific nutrition expertise are needed on study sections for critically evaluating research related to nutrition. This would help ensure that nutrition is included as a variable in studies of physiology, biochemistry and metabolism. Existing or new study sections to include the broader field of nutrition research are needed, and existing nutrition study sections should be re-evaluated to ensure that all areas of nutrition receive appropriate peer review.

ASN applauds the NIH for its significant contributions to advancing our understanding of the connections between nutrition and health throughout the lifespan. ASN supports action-oriented steps to continue to advance nutrition research at the NIH and offers the Society as a partner to achieve these goals. The draft Strategic Plan for NIH Nutrition

Research provides many opportunities for NIH to partner with ASN and others to promote and advance nutrition research. ASN thanks the NIH Nutrition Research Task Force for your efforts and offers the assistance of our Society as you implement the Strategic Plan for NIH Nutrition Research.

Sincerely,

A handwritten signature in black ink that reads "Catherine J. Field". The signature is written in a cursive style with a large initial "C" and "F".

Catherine Field, PhD, RD  
2018-2019 ASN President