

December 14, 2018

**RE: Strategic Plan for NIH Nutrition Research**

To the members of the National Institute of Health’s (NIH) Nutrition Research Task Force (NRTF),

Poor nutrition is the leading cause of poor health in the U.S., overburdening federal budgets, state budgets, private businesses, and the overall economy with rising health care costs and threatening national security with declining military readiness. The NRTF’s Draft Strategic Plan is an important step toward addressing the epidemic through government sponsored research and discovery.

As one of the leading institutions for nutrition science and policy in the world, the Friedman School’s mission is to produce trusted science, future leaders, and real-world impact. The undersigned faculty, experts in the field of nutrition science and policy, are pleased to provide our comments and suggestions on the Draft Strategic Plan, organized by section.

**Strategic Plan Introduction**

**Add a section outlining the NIH’s plan for implementing the numerous research priorities listed in the report, given the agency’s current staff and resources.**

- We salute the National Institute of Health (NIH), National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Office of Nutrition Research (ONR) for moving forward with this important undertaking. We are concerned, however, that ONR with its current small staff and resources, is vastly under resourced to successfully implement a strategic plan of the scope, scale, and national importance proposed in the draft plan. Compared to other NIH offices with similar strategic plans, like the Office of Disease Prevention (ODP) or the Office of Dietary Supplements (ODS), the ONR has been reduced to a much smaller staff with less advanced nutrition expertise. For example, ONR has 4 staff members (1 Ph.D.), compared to the 29 staff members (10 Ph.D.) at ODP and 25 staff members (11 Ph.D.) at ODS. Nutrition research and training as a percentage of total NIH obligations has been decreasing since 2012 (from 5.6% to 5.1%).<sup>1</sup> The final report should outline the agency’s ten year strategy for implementing and evaluating the strategic plan, including a set of indicators and an expanded list of employees dedicated to tracking and monitoring the plan.

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<sup>1</sup> The National Institute of Diabetes and Digestive and Kidney Diseases, Office of Nutrition Research. *NIH Nutrition Research Report, 2015 & 2016*. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health; 2017.

**Add a call for formal review and evaluation of the needs and potential benefits of a new National Institute of Nutrition (NIN).**

- It is striking that the leading cause of poor health, nutrition, is not adequately represented in the NIH. As the nation's health needs and priorities evolve, the NIH and its research priorities must similarly evolve. For example, over time the NIH has added multiple new institutes according to contemporary priorities. In 1937, Congress passed legislation to add a new National Cancer Institute (NCI) to NIH, based on growing recognition of the importance of cancer in the nation's health. In 1950, Congress passed the Omnibus Medical Research Act, establishing the National Institute of Neurological Diseases and Blindness and the National Institute of Arthritis and Metabolic Diseases. The 1950 Omnibus Medical Research Act also gave the U.S. Surgeon General authority to establish new institutes at NIH in the future. A new National Institute of Nutrition (NIN), endorsed and funded by Congress, is a compelling option for addressing the crucial capacity, implementation, and resource needs required to achieve the present Strategic Plan. A NIN would deliver robust, coordinated, and independent evidence on diet and health. It is time to have an NIH Institute devoted not only to a specific disease or diseases, but to one of the core determinants of most of these illnesses including cancer, heart disease, obesity, and diabetes. A NIN is needed to carry out the NIH's Strategic Plan for Nutrition Research, bring a reinvigorated nutrition focus back to the NIH, and adequately address the leading driver of poor health and rising health costs.

**Add a section outlining the value and importance of prioritizing and coordinating implementation research related to existing federal programs that influence nutrition.**

- Several existing large federal programs influence food and nutrition. The NIH Strategic Plan should recognize and prioritize the importance of rigorous research that will improve and leverage the impact of these programs.
- Related to this, the NIH Strategic Plan should also incorporate and prioritize research that will be responsive to specific Congressional policy interest and questions in these areas. For example, in June 2018, the US House Committee on Appropriations highlighted the crucial role of diet-related chronic diseases in rising health care costs and “negative effects on the economy and nation through increased absences from work and decreased productivity, rising business and personal healthcare costs, and impaired military readiness.” In light of these concerns, Congress instructed GAO to investigate and report on six specific questions:
  - What does current scientific research show about the links between diet and chronic health conditions?
  - What is known about the costs of health related disease in the U.S., and what is the federal government's share of these costs?
  - What federal agency food and nutrition-related programs exist that may help reduce the costs and risks of diet-related chronic disease, what strategies, expertise and resources have been dedicated to those programs, and how has progress been measured?
  - To what extent, if at all, have selected federal agencies coordinated their efforts with each other and with other government entities (e.g., international, state, local, tribal) and the private sector to reduce the costs and risks of diet-related chronic disease; and how can any unmet opportunities for improved coordination be addressed?
  - What challenges do selected federal agencies face in reducing the costs and risks of diet-related chronic disease?

- What additional actions, if any, have stakeholders identified that selected federal agencies could take to reduce the costs and risks of diet-related chronic disease?
- The directive to GAO further specified Congress’ interest in policies and activities of specific federal agencies to support nutrition and public health. This included the Department of Health and Human Services (HHS), which oversees Medicare, Medicaid, the Children’s Health Insurance Program, the Centers for Disease Control and Prevention, the National Institutes of Health, and the Food and Drug Administration; and the U.S. Department of Agriculture (USDA), which oversees the Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants, and Children, the Food Insecurity Nutrition Incentive that provides financial incentives in SNAP to buy fruits and vegetables, the National School Lunch Program, the School Breakfast Program, and the Fresh Fruit and Vegetable Program in low-income elementary schools. In addition, the directive to GAO noted USDA’s additional roles in agricultural production through commodity support and federal crop insurance; in food and nutrition research through the Agricultural Research Service and National Institute for Food and Agriculture; and in the development of the *Dietary Guidelines for Americans*, jointly with HHS, every 5 years. The directive also incorporated the Department of Defense (DOD) Military Health System, which provides care to active duty forces and their families; and the Defense Logistics Agency and several other DOD organizations, which purchase billions of dollars of food each year for service members and their families, relevant to both their health and influencing overall food markets. Consistent with this Congressional priority, the NIH should create specific research priorities and funding mechanisms to evaluate the role of interventions in these existing federal programs and systems to improve nutrition, reduce diet-related illness, reduce diet-related healthcare costs, and reduce negative effects on the economy and nation that occur through increased absences from work and decreased productivity, rising business and personal healthcare costs, and impaired military readiness.
- In addition, The Consolidated Appropriations Act of 2018 instructs the Office of the NIH Director to work across agencies to report on relevant *Food is Medicine* research such as on medically tailored meals, medical nutrition therapy, produce prescription programs, and the role of proper nutrition in aging and in reproductive health; and encourages additional cross-agency NIH collaboration on these topics.<sup>6</sup> Consistent with this Congressional priority, the NIH should create specific research priorities and funding mechanisms to evaluate the role of such interventions in healthcare systems, including Medicare and Medicaid.

### **Theme 1**

#### **“Investigate Nutritional Biochemistry, Physiology, and the Microbiome”**

**Page 15, Theme 1-1, add:** “Research across different cultures and population sub-groups will also be important to understand how different dietary patterns may warrant pairing with different behavioral advice.”

### **Theme 2:**

#### **“Assess the Role of Nutrition and Dietary Patterns in Development, Health, and Disease Across Life Stages”**

**Page 25, Theme 2-2a, add:** Longitudinal “and intervention, including multi-level intervention,” studies.

**Page 26, Theme 2-2a, add bullet:** “Behavioral interventions to improve the dietary intake of infants with respect to metabolic health and cognition, especially in vulnerable populations such as underserved minority and lower socioeconomic groups.”

**Page 29, Theme 2-3, add to bullet two:** after “specific foods” insert “, food additives (e.g. non-nutritive sweeteners),”.

**Page 29, Theme 2-3, add to final bullet:** health “and cognitive” outcomes.

**Page 30, Theme 2-4, add bullet:** “Evaluate combinations of specific foods and nutrients for effects on cognition or health, to assess whether food-based and other multi-component solutions have greater efficacy than single-nutrient or single-focus solutions.”

### **Theme 3**

#### **“Explore Individual Variability in Response to Diet Interventions to Inform Nutrition Science, Improve Health, and Prevent Disease”**

**Page 36, Theme 3-2, add new bullet after bullet two:** “Examine the impact that federal feeding programs meant to reduce food insecurity (e.g. the Supplemental Nutrition Assistance Program (SNAP), Special Supplemental Nutrition Program for Women, Infants, and Children, the Food Insecurity Nutrition Incentive , the National School Lunch Program, the School Breakfast Program, and the Fresh Fruit and Vegetable Program) have on diet quality; and how changes to the program designed to improve diet-quality (including incentives and disincentives) might impact participants.”

**Page 36, Theme 3-2, add to bullet four:** after “health interrelationship,” add “and responses to diet interventions and nutrition education.”

**Page 36, Theme 3-2, add new bullet:** “Evaluate the long term effectiveness of significant sustained weight loss as a strategy to improve health in the overweight and obese populations, with a specific focus on the impact of weight cycling – weight loss, regain, loss and regain over five years periods – and the impact of an evolutionary scheme where the body recognizes only two states, famine and non-famine.”

**Page 36, Theme 3-2, add new bullet:** “Conduct studies on international populations. A more robust global nutrition research agenda provides unique opportunities to make discoveries that benefit all Americans.”

**Page 36, Theme 3-2, add new bullet:** “Conduct studies on under-represented and socioeconomically diverse U.S. subpopulations in multiple geographies.”

### **Theme 4**

**“Enhance Clinical Nutrition Research to Improve Health Outcomes in Patients.”**

**Page 37, Introduction, line 4:** after “length of stay in hospital” insert “hospital readmission,” line 6, after “deficiencies and malnutrition” insert “and improving diet quality.”

**Page 38, Introduction, last paragraph, before last sentence, add:** “It also includes individuals with conditions particularly sensitive to diet (e.g. chronic heart failure) and interventions such as medically-tailored meals, medical nutrition therapy, produce prescription programs, and the role of proper nutrition in aging and in reproductive health; and encourages additional cross-agency NIH collaboration on these topics.”

**Page 39, 4-2, paragraph 2, line 3:** after “malnourished.” Insert “Planetary health also has direct links to human health and malnutrition, through food availability, air quality, and environmental events.”

**Page 40, 4-2, add new second bullet:** “Study the double burden of malnutrition, characterized by the coexistence of undernutrition along with overweight and obesity, or diet-related noncommunicable diseases, within individuals, households and populations, and across the life course.”

**Page 42, Theme 4-5, add new bullet:** “Evaluate the impact medically-tailored meals, medical nutrition therapy, and produce prescription programs have on the health of patients with highly diet-dependent diseases such as insulin resistance and type-2 diabetes, and explore developing a health care quality measure that identifies patients who would benefit significantly from these interventions. Evaluate the role of such interventions in healthcare systems, including Medicare and Medicaid, with a focus on cross-agency NIH collaboration on these topics.”

**Theme 5**

**“Advance Implementation Science to Increase the Use of Effective Nutrition Interventions”**

**Page 43, Introduction, paragraph 3, line 5, add new sentence:** following “those changes over time.” insert “The food environment in particular plays a key role that may overwhelm the limits of behavior change.”

**Page 43, Introduction, paragraph 3, line 6:** after “food environment,” insert “and leveraging existing federal and state programs,”.

**Page 44, Introduction, paragraph 4, line 3:** after “science of behavior change” insert “, and policy, systems, and environmental change.”

**Page 44, Theme 5-1, paragraph 1, line 5:** after “communication strategists” insert “behavioral economists,”

**Page 44, Theme 5-1, paragraph 1, line 6:** after “focusing on understanding” insert “the food environment,”.

**Page 44, Introduction, paragraph 4, line 7:** after “(e.g., hybrid designs)” insert “, responsive to specific Congressional policy interest.”.

**Page 45, Theme 5-1, bullet 4:** strike “and” after “impact of nutrition” and insert after “cooking literacy” “and time available for food preparation”.

**Page 45, Theme 5-1, bullet 5:** after “interventions” insert “and the use of culinary techniques to make the healthy choice the delicious choice.”

**Page 46, Theme 5-2, bullet 2:** after “registered dietitians” insert “primary care physicians,”.

**Page 46, Theme 5-2, add a new bullet:** “Design and test a nutrition vital sign that could be added to the electronic health record that would improve provider and patient attention to diet-related health risks.”

**Page 46, Theme 5-2, add a new bullet:** “As per Congress’ recent call for evidence-based approaches in [SNAP-Education](#), the nation’s largest and most important federal nutrition education and obesity prevention program, build evidence base for policy, systems, and environmental change interventions for use by states and communities to prevent excessive weight gain that can be used among SNAP eligible populations.”

**Page 46, Theme 5-2, add a new bullet:** “Identify opportunities for coordination among existing federal programs with broad reach and large potential impact on public health including the Department of Health and Human Services (HHS), the Centers for Disease Control and Prevention, the National Institutes of Health, the Food and Drug Administration (FDA), the United States Department of Agriculture (USDA), the Department of Defense (DOD) Military Health System, and the Defense Logistics Agency.”

**Page 46, Theme 5-2, add a new bullet:** “Evaluate the role of interventions in the aforementioned existing federal programs and systems to improve nutrition, reduce diet-related illness, reduce diet-related healthcare costs, and reduce negative effects on the economy and nation that occur through increased absences from work and decreased productivity, rising business and personal healthcare costs, and impaired military readiness.”

**Page 46, Theme 5-2, add a new bullet:** “Conduct assessments of cost-effectiveness and return on investment to support replication and adoption of effective interventions at the community, local, state, and national level and in a variety of programs, both private and public.”

## **Theme 6**

### **“Develop and Refine Research Methods and Tools”**

**Page 49, 6-1a, add new second bullet:** “Combine images of plates of food with artificial intelligence to develop an accurate method of measuring food intake to replace unreliable recalls of food consumed.”

Thank you for the opportunity to provide feedback on the Draft Strategic Plan for NIH Nutrition Research. We strongly encourage the Nutrition Research Task Force to incorporate our comments to promote a more comprehensive and impactful research agenda.

Sincerely,



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*These comments represent the recommendations of individual Tufts faculty members, compiled with staff support. The opinions expressed in this document do not necessarily represent the views or opinions of the Friedman School of Nutrition Science and Policy, Tufts University, the Human Nutrition Research Center on Aging, or its affiliates.*