THE OHIO STATE UNIVERSITY

Foods for Health Research Initiative

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To the President's Council of Advisors on Science and Technology:

These comments are offered in response to your solicitation for public input on nutrition research. We represent an interdisciplinary group of researchers who are part of a comprehensive program at The Ohio State University, The Foods for Health Research Initiative, which was formed in 2015, dedicated to multidisciplinary, basic, and translational research on the relationship between nutrients, foods, dietary patterns, disease prevention and health promotion. Our research community is composed of 11 faculty hires and over 90 affiliated researchers across the university with expertise spanning disciplines such as food and agricultural sciences, nutrition, neuroscience, microbiology, biochemistry, and medicine. Foods for Health has generated significant scholarly output over the last eight years, including over $48M in externally funded grants and 200 peer-reviewed journal articles. Currently, Foods for Health faculty hires are leading over $18M in research projects focused on the continuum of agriculture, food, nutrition, and health.

1a) What are the crucial evidence gaps in nutrition research and what steps could PCAST recommend that would substantially fill those gaps?

The field of nutrition research provides immense benefit to public health, but it is also complex and highly nuanced.[1] Several aspects of what might be considered basic nutrition are still poorly understood. A prescient example is the lack of robust information needed to provide precise dietary reference intakes for key nutrients across the lifespan. Requirements for several nutrients remain approximations, and more research is needed to support endpoints related to chronic disease on top of nutrient sufficiency.[2,3] An important step for PCAST to consider is advocating for a 'return to basics' approach, wherein resources are allocated to fill these foundational gaps in our understanding of basic human nutrition. Illuminating these dark spots in nutrition science will enable needed innovations in precision nutrition.

1b) What tools, methods or other resources (in addition to funding) are needed to conduct that research?

A wide-scale adoption of dietary assessments as an integral part of healthcare and federally funded clinical research would provide a strong basis to guide research priorities. This would require a simultaneous prioritization of studies that identify objective biomarkers (e.g. molecules measured in blood or urine) of food and nutrient consumption[4] as well as appropriate infrastructure for data sharing. As a result, a wealth of information would be available to inform nutrition-based public health programs, policies, and guidelines that are administered by agencies including the USDA, CDC, NIH, and FDA.

1c) Are there other barriers to research (other than inadequate funding)?

Nutrition research will require an integrated approach that breaks down the traditional silos that currently separate relevant disciplines. Increasing opportunities that allow disparate disciplines to interact will have a direct benefit to nutrition research outcomes in the United States. Nutrition research must span a continuum from the farm through processing, purchasing, home preparation, and consumption.[5] However,

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federal focus on the disciplines relevant to this comprehensive view is highly fragmented among different agencies, which impedes meaningful progress.[6] The structure of federal programs focused on agriculture, food, nutrition, measurement science, and medicine must evolve to enable impactful, interdisciplinary nutrition research.[7] Within Foods for Health, we provide programming and funding opportunities specifically designed to encourage interdisciplinary interactions. We have invested $935,000 in early-stage interdisciplinary work since 2016, which has generated more than $6 million in state and federally funded research. This coming spring, we look forward to hosting a symposium that will bring together researchers across agriculture, food, nutrition, and cancer to discuss collaborative opportunities. These types of strategically-designed programs allow researchers to explore prescient issues from new angles and propose paradigm-shifting work.

At the same time, efforts must be made to increase the number and diversity of professionals working across the agriculture, food, nutrition, measurement science, and health continuum. Increasing the visibility of these career paths may partially help, but structural barriers also exist. For example, dietetic interns typically pay for their precepted experiences, whereas interns in other medical fields may not. Ensuring a pipeline of talented researchers and practitioners is essential for the future of food and nutrition research in the U.S.

3) What can be done to assure equitable access to the benefits of the federal nutrition research investment?

Empowering land grant institutions of higher education will help to ensure equitable access to the benefits of federal investments in nutrition research.[8] By virtue of their charter, these flagship universities provide educational opportunities in the classroom and wider community through research, teaching, and extension services. Additional consideration should also be given to involving the food industry as an active partner in nutrition research. The scale and access of industry could facilitate wide-scale implementation of critical nutrition innovations, but proper care must also be given to avoid biases and conflicts of interest.[9]

Health practitioners will also be a vital part of implementing new findings from nutrition research at the population level, yet health science curricula do not typically include nutrition as a core competency. In addition to this, dietetic services are rarely reimbursed by insurance providers, which currently inhibits access to proper nutritional care.

The 2022 White House Conference on Hunger, Nutrition, and Health was an important first step in elevating nutrition research as a national priority. Earlier this year Dr. Martha Belury, who serves as an associate director of the Foods for Health Research Initiative, provided comments to PCAST on the concept of “Food is Medicine” as a continuation of that discussion. To summarize two important points from her presentation, embracing food as medicine will require a systematic approach to food and nutrition research, and enabling this research will inform needed revisions to federal food and nutrition policies to ensure the health of our nation.

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We hope that the Committee finds these comments and the listed references useful in forming an eventual vision for advancing nutrition science. Please do not hesitate to reach out for further discussion and thank you for the opportunity to provide comments to this critically important issue.

Sincerely,

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