



National Institutes of Health
Office of Dietary Supplements

NIH Initiatives in Nutrition: Roadmap, Strategic Plan...

Paul M. Coates, Ph.D.

DC IFT Food Policy Impact 2017





National Nutrition Research Roadmap: NIH Initiatives

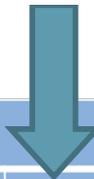
- How does the NIH address nutrition research topics?
- Examples
- A plan
- Website for NNRR

<https://fnic.nal.usda.gov/surveys-reports-and-research/interagency-committee-human-nutrition-research>



Organizing Questions

- **Question 1: How can we better understand and define eating patterns to improve and sustain health?**
- **Question 2: What can be done to help people choose healthy eating patterns?**
- **Question 3: How can we engage innovative methods and systems to accelerate discoveries in human nutrition?**



	HHS Agency			
	CDC	FDA	HRSA	NIH
1. How do we better understand and define eating patterns to improve and sustain health?				
Health Promotion and Disease Prevention and Treatment	X	X	X	X
Individual Differences including “Omics”		X	X	X
Population-level Monitoring	X	X	X	X
2. What can be done to help people choose healthy eating patterns?				
Influences on Eating Patterns	X	X	X	X
Interventions	X	X	X	X
Systems Science	X	X	X	X
Environmental Sustainability				
3. How can we develop and engage innovative methods and systems to accelerate discoveries in human nutrition?				
Assessing Dietary Exposures	X	X		X
Biobehavioral Science		X		X
Behavioral Economics	X	X	X	X
Big Data	X	X		X



NIH Human Nutrition Research

- **Many of the 27 NIH ICs and Offices support nutrition-relevant research; ~4-5% of the total NIH budget**
- **Initiatives, Funding Opportunity Announcements, supplements to existing grants**
- **Common Fund programs on microbiome and on metabolomics**
- **Intramural research programs, including the Clinical Center**
- **Training and career development**
- **Public health information emerging from NIH-supported research**



Let's use an example...

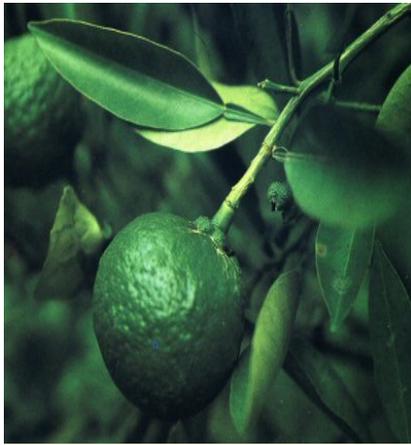
Question 1. How do we better understand and define eating patterns to improve and sustain health?

- **Topical Area 1. Health Promotion and Disease Prevention and Treatment**



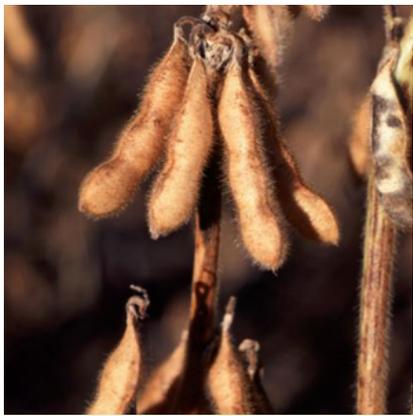
Enhance optimal development and reduce the risk of chronic disease

- **What's the evidence? What's the gap?**
 - **Systematic reviews**
 - **Workshops**
- **Study designs**
- **Variability in individual responses**
- **Role of the microbiome**
- **Translational efforts**
- **Collaborative research**
- **Frame research around public health needs, e.g., Dietary Reference Intakes, NNRR areas of interest**
- **Big data**



There are plenty of others...

- **Establish the causal relationship between nutrition and disease pathophysiology**
 - e.g., FOAs related to the microbiome
- **Understand how nutritional status affects response to different types of physical activity across the lifespan**
 - e.g., nutrigenetics/nutrigenomics approaches; molecular transducers of physical activity
- **Examine the role of nutrition, physical activity and other health habits during pregnancy/gestation and early childhood to enhance health**
 - e.g., maternal nutrition and pre-pregnancy obesity: effects on mothers, infants, and children



But wait, there's more...

- **Workforce development (examples)**
 - Cancer Prevention Fellowship Program
 - Loan Repayment Programs
 - John A. Milner Fellowship Program
 - Mary Frances Picciano Dietary Supplement Research Practicum
 - T, F, K Awards at various stages of career development
 - Short-term experiences at NIH
- **Public-private partnerships (examples)**
 - Biomarkers of Nutrition for Development (BOND)
 - National Collaborative on Childhood Obesity Research (NCCOR)
 - Vitamin D Standardization Program (VDSP)
- **Big Data (examples)**
 - NIH Big Data to Knowledge (BD2K)
 - NIH Health Care Systems Research Collaboratory Program
 - Environmental Influences on Child Health Outcomes (ECHO)
 - Precision Medicine Initiative (PMI)

NIH Nutrition Strategic Planning Timeline



*Deadlines included in NRTF charter.



NIH OFFICE OF DIETARY SUPPLEMENTS

Strategic Plan 2017–2021

Strengthening Knowledge &
Understanding of Dietary Supplements

DECEMBER 2016



NIH National Institutes of Health
Office of Dietary Supplements

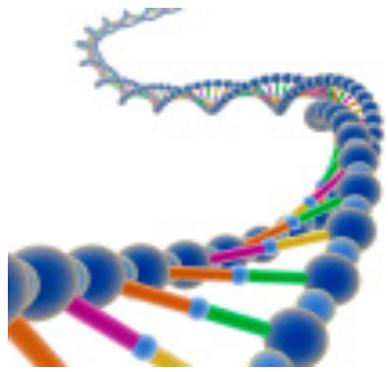


ODS Goals

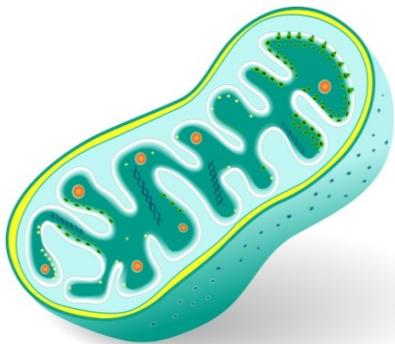
- 1. Expand the scientific knowledge base on dietary supplements by stimulating and supporting a full range of biomedical research and by developing and contributing to collaborative initiatives, workshops, meetings, and conferences.**
- 2. Enhance the dietary supplement research workforce through training and career development.**
- 3. Foster development and dissemination of research resources and tools to enhance the quality of dietary supplement research.**
- 4. Translate dietary supplement research findings into useful information for consumers, health professionals, researchers, and policymakers.**

Identifying Priorities

- What's the public health issue?
- How are nutritional status and bioavailable levels of DS metabolites measured? Are measures reliable?
- Evidence for health effects of DS? At what levels?
- How should ODS and the research community fill the gaps in knowledge?
- How do we translate the results of research for policymakers, clinicians, and the public?



National Institutes of Health
Office of Dietary Supplements

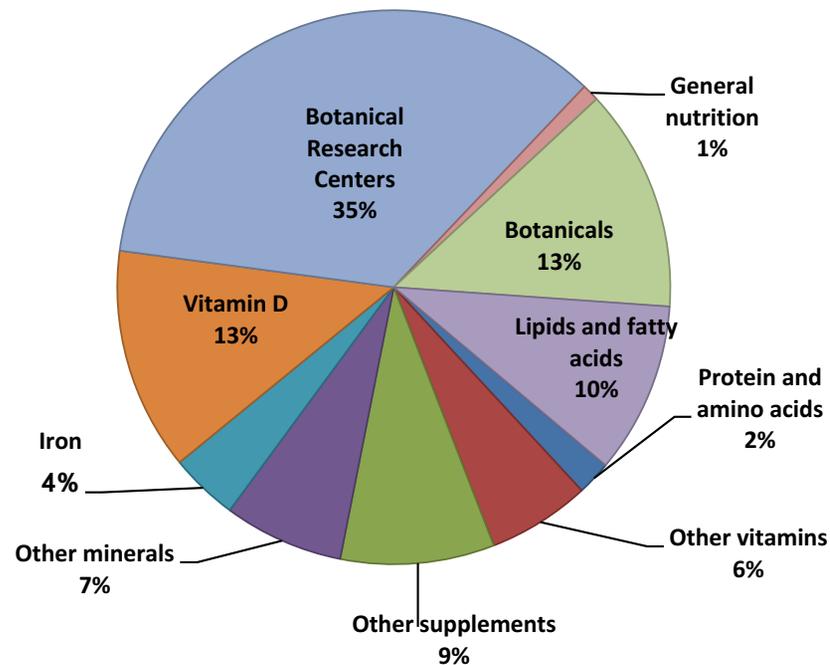


Selected Program Highlights

Research Grant Co-Funding



ODS Extramural Research Portfolio by Investment Category, FY 2015
(\$11.8 million total funding)



ODS Co-Funded Investments with NIH-ICs(FY 2015)

	\$ Thousands
National Center for Complementary and Integrative Health	5,765
National Heart, Lung, and Blood Institute	1,638
National Institute of Diabetes and Digestive and Kidney Diseases	1,421
National Cancer Institute	855
National Institute on Alcohol Abuse and Alcoholism	536
National Institute on Aging	462
Fogarty International Center	253
National Institute of Environmental Health Sciences	199
National Institute of Child Health and Human Development	163
National Institute of Neurological Disorders and Stroke	100
National Institute of Allergy and Infectious Diseases	100
National Institute of General Medical Sciences	100
National Eye Institute	91
National Institute of Arthritis and Musculoskeletal and Skin Diseases	85
National Institute of Dental and Craniofacial Research	34

Analytical Methods and Reference Materials Program (AMRM)



- Supports the development of laboratory tools to assist in the verification of manufacturers' label claims and in quality control.
- Supports the Dietary Supplement Laboratory Quality Assurance Program for academic and commercial labs.
- **Supports quality assurance programs for nutritional biomarkers (vitamin D, omega-3 fatty acids.**
- Conducts workshops on methodologies for characterizing dietary supplements and improving laboratory performance.
- Supports the validation of methods used in biomedical research on botanicals and other dietary supplement ingredients.
- Disseminates information and data through its new website that includes a searchable database of analytical methods.

ODS Evidence-Based Review Program



- Sponsored 18 systematic reviews on B-vitamins, ephedra, multivitamins, omega-3 fatty acids, soy, probiotics, calcium and vitamin D.
- Sponsored a 5-volume series of technical reports by AHRQ on the application of systematic review methodology to the field of nutrition.
- Updates of its vitamin D and calcium systematic reviews were used for Dietary Reference Intake evaluations by the National Academies of Science, Engineering, and Medicine.

Dietary Supplement Databases



- The Dietary Supplement Label Database (DSLDB) contains data from >60,000 labels (adds 1,000 new labels/month).
- The Dietary Supplement Ingredient Database (DSID) provides analytically derived information on the amount of ingredients of some dietary supplements (multivitamins, omega-3 fatty acids, prenatal vitamins, green tea).
 - Collaboration with USDA/ARS.
- Computer Access to Research on Dietary Supplements (CARDS) - information on research projects pertaining to dietary supplements funded by the USDA, DoD, and NIH since 1999.
 - Pilot study for National Nutrition Research Database

Vitamin D Initiative



- **Standardization of vitamin D measurement and certification for laboratories measuring vitamin D levels in blood.**
- **Studies of international health and nutrition surveys for vitamin D levels in blood and reported vitamin D intakes.**
- **Systematic review of health outcomes re vitamin D alone or with calcium.**
- **Analysis of vitamin D exposure from sunlight, dietary supplements, and food.**
- **Conference on evaluation and application of evidence for decision-making by practitioners, approaches to counseling in primary care settings when data are uncertain, and issues surrounding laboratory measurement of serum 25(OH)D.**

Workforce Development



- Fund training and career development awards through NIH extramural mechanisms.
- Sponsor ODS Intramural Scholars awards with NIH ICs.
- Collaborate with other Federal agencies to support postdoctoral fellows (e.g., NIST and USDA).
- Offer short-term training opportunities for students and faculty members at ODS.
- Host the annual Mary Frances Picciano Dietary Supplement Research Practicum, a 3-day intensive course on issues in dietary supplement research.

Communicating the Science of Supplements



- Media inquiries and questions from the public about dietary supplements.
- **More than two dozen facts sheets on dietary supplement ingredients and on supplements marketed for specific purposes (such as weight loss).**
- Website provides:
 - Detailed descriptions of ODS program areas and activities.
 - Research funding opportunities, listing of funded grant applications, dietary supplement databases, and PubMed dietary supplement subset.
 - E-newsletters, such as *ODS Update* (directed to professional audiences) and *The Scoop* (for consumers), as well as email blasts on special topics.
- ODS posts daily about dietary supplements and nutrition on Twitter, Facebook.
- **1.6 million visitors per month to the ODS website.**