Federal Interagency Domiciled Feeding Center: Needs and Potential Benefits

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“If a research project in the field is phenomenological, it is often classified as nutrition; when it becomes mechanistic, it is called something else.” Levin & Bier. Research Directions in Nutrition: View from the NICHD. Am J Clin Nutr 1993

Why we should care:  i) nutrition is primarily about health maintenance; ii) nutrition science is transdisciplinary (i.e. cross all agencies; iii) after air, food is our largest environmental exposure; iv) federal missions require credible science; v) public wants credible nutrition information
The Challenges for Nutrition Science

- Scientific method (explicit question, explicit outcomes, intervention, replicability, predictability)
- Inherent difficulty measuring food intake
- Outcomes often take years to “develop” so biomarkers become important; diet may be the “first hit” but other factors may be more important
- Outcomes rarely accounted for solely by differences or variability in food composition
How Could a Domiciled Feeding Center Help?

• Known recipe, ingredients, amount

• Minimize chance to “cheat”

• Potentially larger sample size studied at one time

• Capacity to answer fundamental questions other entities cannot and to “validate” noisy data against more precise measures
What needs to be considered/done?

CONSENSUS Re Importance and Need

- Identify location (where, new or renovated building)
- Identify staffing and logistics (sustainable & flexible)
- Identify necessary research infrastructure (metabolic kitchen, imaging, physiology, analytical capacity-biochemical to “omics”, phenotyping, socio-ecological, behavioral, etc.)
- Identify mechanism to evaluate and approve proposals based on available funding
Six Human Nutrition Research Centers

- BHNRC is the oldest of the six HNRC's
- Located on ~7,000 acres (crops, animals, labs)
- 1 of 3 Centers in Beltsville Location (BARC and National Arboretum)
Monitoring Food Composition

- Provide U.S. Food Composition Data
- Determine Food Consumption and Dietary Patterns of Americans

The USDA-ARS has held this responsibility for over 100 years.
Food Surveys Research Group

- conduct dietary surveys of U.S. population
- provide resulting data to public
- data used for food and nutrition programs and policy decisions
ICHNR Priorities

- Evaluation of DRI’s (Klurfeld)
- FDA-food labeling, food safety, food integrity
- HHS & DOD-diet-related disease; evidence-based food/dietary pattern recommendations
- **COMMON GOAL**- assure/improve health of people and the planet
The Stage Has Been Set

• World population (7.5 billion) expected to reach 9.7 billion in 2050

• By 2050, > 1 in 5 people will be over 60 yr (80% in low- & middle-income countries.)

• Colliding epidemics (ID, NCD, food security)

• Challenges for Mother Earth (natural resources, clean water) and by Mother Nature (drought, floods, rising temp & seas)
MAINTAINING EQUILIBRIUM

Nutritional Status

Dietary Intake

Exercise

Chronic diseases

Sarcopenia

What does a “healthy” plate look like?
How do we provide it?
It was simple in the beginning:

“Let food be thy medicine and medicine thy food”

Hippocrates

Pieter Bruegel - The Harvesters, 1565
But our perspective has changed

Claire Talbot, “Factory Farm”

ANDREA DEL PESCO, “Supermarket”
The focus of academia and research effectively widens the gap

“The Canyon” – Nutrition, Production Ag and Public Health have lost their connections

John Finley
USDA ARS
Bringing it back together is the challenge....

John Finley, USDA ARS
ICHNR’s Domiciled Feeding Center

• The Solution?
• Will not know unless we try.....
• When do we start?