Cooperative State Research, Education, and Extension Service, USDA

Research and Outreach Programs that Affect Nutrition Policy

National Public Policy Education Conference
Farm Foundation, 9/20/05
Susan Welsh, Ph.D., RD
Justification for Investing in Obesity Prevention

• Over 65% of U.S. population is overweight and 30% is obese.

• Illness related to overweight and obesity costs society over $117 billion annually.

• Without a change, 60% will be obese and costs will double by 2020.
OBESITY PROBLEM: Why USDA? Why CSREES?

1. CSREES Goal: A Healthy Well Nourished Population
2. President’s “Healthier US” Initiative: Healthy Diets & More Physical Activity
3. USDA is responsible for Ag & Food Systems
4. Obesity = imbalance of food intake & energy expenditure under the influence of heredity.
5. Etiology, prevention & treatment are multidimensional & extremely complex.
6. CSREES & Land-grant system are uniquely suited to take a multidimensional, coordinated approach.
Biologically determined behavioral predispositions:
- Taste/pleasure
- Sweet, sour, salt, bitter
- Sensory specific satiety
- Brain mechanisms

Experience with food:
Associative conditioning

Physiological conditioning:
- Familiarity: learned safety
- Conditioned preferences
- Conditioned satiety

Social conditioning:
- Models
- Rewards
- Social affective context

Environmental factors:
- Beliefs
- Attitudes
- Expectancies
- Benefits
- Barriers
- Self-efficacy
- Self identity
- Ethical/moral obligations
- Ethnic identities
- Stage in change process
- Knowledge & skills

Social environment:
- Social networks & relationships
- Cultural practices

Physical environment
- Food availability (under & over)
- Technology

Economic environment
- Resources
- Price

Informational environment
- Advertising
- Media

Intra-personal factors:
- Social norms
- Cultural norms

Interpersonal factors:
- Social norms
- Cultural norms

FOOD CHOICE

Contento, SNE, July 27, 2003
USDA AGENCIES Involved in Nutrition – Primary Functions

• **ARS** – Intramural research aimed at understanding the needs for particular nutrients taking a “whole diet” approach

• **CSREES** — External research, ed & ext on nutrient needs, functional foods, nutrition ed research & intervention

• **ERS** — Economic and behavioral research on the determinants of food choices and how to influence outcomes.

• **CNPP** - Nutrition policy & promotion

• **FNS** - Food assistance & FSNE
CSREES: Research, Education and Extension for a Healthier US

- What should we eat
- Biochemical, physiological needs
  - Nutrient availability/Functionality
  - Food composition

- What do we eat
  - Dietary guidance

- Why we eat it
  - Monitoring
  - Behavioral Research
  - Program Development Research

- How we change
  - Information
  - Education (formal & informal)
  - Food assistance

- Intervention

- Outcome
  - Healthier U.S.
CSREES: Primary Functions

CSREES is the Federal Partner in the Land-Grant System

**Federal:** Administer Federal funds to implement research, education, & extension programs

**Extramural:** Provide leadership & support for research, education, & extension programs through the land-grant system & with other partners
CSREES: Food & Nutrition-related Research, Education & Extension Programs

Research
- Individual Investigator led (Hatch, NRI)
- Multi-State, -Disciplinary, -Functional (MRF, Integrated, NRI)

Education
- Higher Ed
- Multicultural Alliances, Info Systems

Extension
- Base Programs & Special Initiatives
- EFNEP, (FSNE)
CSREES: Land Grant System

• 1862’s: 57 State Ag Experiment Stations & Extension Services located at land grant universities

• 1890’s: 18 Historically Black Colleges including Tuskegee

• 1994’s: 33 Tribal Colleges
CSREES: Other Partners

• Other Universities & Colleges
• NGO’s & Commodity Groups
• USDA Agencies
• Federal Agencies (NIH, CDC, FDA)
• White House
Funding for All CSREES-Related Human Nutrition Research, 2000-2003, (in thousands)
CSREES Funding for All Human Nutrition Research Programs by Source, 2000-2003 (in thousands)
CSREES Funding for Human Nutrition Areas, 2000-2003 (in thousands)
Number of Projects Within Human Nutrition Research Areas, 2000-2003

- Nutrient Composition of Food: 616 projects
- Requirements and Functions of Nutrients & Other Food Components: 1536 projects
- Nutrition Education & Behavior: 677 projects

Total: 2839 projects
Nutrient Composition & Function: NRI 31.0
Bioactive Food Components for Optimal Health

National Program Leader: Etta Saltos esaltos@csrees.usda.gov

PRIORITIES:

– Mechanistic studies of bioavailability, function, efficacy and safety of physiologically active dietary components and neglected nutrients

– Interrelationships among dietary components in promoting health

– Mechanisms underlying relationship between diet and optimal health

*Priorities listed here are from 2005, but are not expected to change significantly in 2006
“Bioactive Food Components for Optimal Health”
Program Statistics – FY 2005

• # of Proposals Submitted – 73 (61 standard research proposals, 2 conference proposals, 10 seed/equipment proposals)

• # of Proposals Awarded – 14 (8 standard research grants, 2 New Investigator awards, 1 conference grant, 2 equipment grants, 1 standard strengthening award)

• % Success – 18% (standard grants)

• Average Award Size - $375,000 (standard grants)

• Average Award Duration (years) – 2.9 (standard grants)
Examples of Research Funded through the NRI on Nutrient Composition and Function

- Dietary Choline and Folic Acid and Optimal Brain Development (Ziesel, University of North Carolina)
- Regulation of Embryonic Vascular Development by Vitamin A (Zile, Michigan State University)
- Processing Effects on the Content and Absorption of Grape and Berry Polyphenolics (Howard, University of Arkansas)
- Expanding the market of Anthocyanin-Rich Commodities through Characterization of components with Biological Activity (Giusti, Ohio State University)
- Maternal/Fetal Bone Health in Pregnant Adolescents (O’Brien, Johns Hopkins University)
- Estimating Human Physiological Zinc Requirements (Hambridge, University of Colorado)
Nutrition Education & Behavior: NRI 31.5
“Human Nutrition and Obesity”

National Program Leaders: Etta Saltos esaltos@csrees.usda.gov
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• All projects must address some aspect of food as it relates to obesity
• Integrated Projects must incorporate 2 of the 3 university functions: research, education & extension/outreach
“Human Nutrition and Obesity”
Program Priorities*

• Research — funding limit $500 K total—Epidemiologic studies of factors related to obesity prevention (including secondary data analysis)

• Integrated — funding limit $1.5 M total
  – Influence of social/psychological factors
  – Role of lifestyle, physical activity, culture/ethnicity
  – Role of educational factors, access to information
  – Influence of economic factors, public policy

*Priorities listed here are from 2005, but are not expected to change significantly in 2006
“Human Nutrition and Obesity”
Program Statistics – FY 2004

• # of Proposals Submitted -- 88

• # of Proposals Awarded – 13 awards, plus 2 Bridge Grants

• % Success – 15% (excluding Bridge Grants)

• Average Award Size - $790,000 (excluding Bridge Grants)

• Average Award Duration (years) – 3.7 years (excluding Bridge Grants)
Examples of NRI-Funded Integrated Projects in Nutrition Education and Behavior

- Risk for and Prevention of Early Childhood Overweight: Does the WIC Program play a role? (Harrison, UCLA)

- Socially Constituted Food Consumption of Adolescents (Kennedy, University of Nebraska)

- Providing Nutrition Information at the Point of Sale in Dining Service Environment (Kolodinsky, University of Vermont)

- Behavior change for Obesity Prevention in Young Adults (10 universities)

- Seven Generations of Health: A transgenerational approach to Human Nutrition and Obesity Intervention in Indian Country (Goodman, SIPI)

- Tween Power: Preventing Obesity through wise Expenditures of Resources (Anliker, University of Massachusetts)

- WIN the Rockies: A Food and Nutrition-Related Behavior Change Consortium Project in WY, MT and ID (Moore, University of Wyoming)
Formula: Multistate Research Fund

• Stage-Based Interventions to Increase Fruit & Vegetable Intake in Young Adults
• Parent & Household Influences on Calcium Intake Among Preadolescents
• Systems Analyses - Relationships of Ag & Food Systems to Community Health
• Sustaining Local Food Systems in a globalizing Environment
• Econ & Psych Determinants of Household Savings Behavior
Cooperative Extension System

- Partnership of CSREES & Land-Grant Universities
- **Base Program** in Nutrition & Health: Community programs to help individuals, families & communities make healthy food & lifestyle choices
- **Special Initiative**: Reversing Childhood Obesity Trends
Cooperative Extension System Focus Area:  
**REVERSING CHILDHOOD OBESITY TRENDS**

Mission:

Reduce the prevalence of childhood obesity

via Extension’s innovative programming, and unique delivery modes to achieve healthy weights.
Reversing Childhood Obesity
Leadership Team Accomplishments

• Established a Web Site
  http://www.CNR.Berkeley.EDU/cwh/index.html

• Publish Bi-Monthly Newsletter focusing on pediatric research

• Established State contacts nationwide

• Developing online course In Childhood Overweight and Obesity

• Developing a Family-Centered Training and Resource Kit
Expanded Food and Nutrition Education Program (EFNEP)

Budget 2005: $58M
EFNEP outcomes that reduce risk of obesity

- Increased fruit and vegetable intakes
- Increased dairy intakes
- Increased food security
- Increased fiber intakes
- Increased physical activity
- Breastfeeding (can help both infants & mothers)
- Learning appropriate portion sizes
- Shift from weight focus to health focus
- Choosing healthy beverages – water, milk
- Decreasing sedentary activity
EFNEP: SUMMARY OF FOOD GROUP IMPROVEMENT - FRUIT

Percent of Participants

0 Serving | 1 Serving | 2+ Serving

Entry | Exit

Graph showing the percentage of participants in different serving categories of fruit.
EFNEP: SUMMARY OF FOOD GROUP
IMPROVEMENT - VEGETABLES

Percent of participants

0 Serving 1 Serving 2 Serving 3+ Serving

Entry Exit

0 5 10 15 20 25 30 35 40 45 50
EFNEP Participants With Improved Practices

- Food Resource Mgmt.
- Nutrition Practices
- Food Safety Practices
- Dietary Intakes
EFNEP Participants with Acceptable Practices

- Food Safety
- Food Res. Mgt.

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<td>10</td>
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<tr>
<td>Food Res. Mgt.</td>
<td>70</td>
<td>30</td>
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EFNEP: Physical Activity Impact

About 40% of graduates report more often participating in at least 30 minutes of moderate physical activity every day.
CSREES, Cooperative Extension System, 4-H Enrollment

- Healthy Lifestyle Ed      2,376,907
  Foods & Nutrition       1,006,469
  Food Safety             421,970
  Fitness & Sports       111,338
  Physical Health         35,148

Estimate: 4-H reaches 23% of youth sometime between K-12
WHAT WE WANT TO ACHIEVE

– Development of the research base for dietary guidance
– Understanding of the factors that influence choices related to food and physical activity
– Development of effective strategies to change behavior
– Development of sensitive instruments to measure change
– Increases in the numbers of researchers & educators capable of addressing complex nutritional issues
CSREES Information

• CSREES Web site: www.csrees.usda.gov
  Food, Nutrition and Health is one of the National Emphasis Areas which includes an obesity page

• White paper on obesity available on Web: http://www.csrees.usda.gov/newsroom/white_papers/obesity_Aug04.pdf
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