

ESS Preliminary Priorities Survey Results

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\$200 MILLION PROGRAMS IN BIOENERGY, FEEDSTOCKS AND CONVERSION

- Sustainable production/development of feedstocks including forests, algal systems, and also municipal solid waste
- Develop 2nd and 3rd generation biofuels;
- Develop improved bioconversion processes
- Develop regional experimental biorefineries
- Engineer plants to produce coproducts and be productive under water limiting conditions and on marginal lands.
- Develop cost effective systems for small communities

Note: Environmental impacts, sustainability and water must be included in any discussion of bioenergy

\$200 MILLION PROGRAMS IN HEALTH AND NUTRITION, CULTURAL CONSUMPTION PRACTICES, FOOD AND HEALTH

- Fundamental and applied research that provides solutions to food-related health challenges (obesity, diabetes, heart disease, cancer, etc);
- Characterize and utilize ethnic foods in biomedical/preventative disease applications;
- Develop functional foods with improved nutritional and/or medicinal properties;
- Research on the “culture of consumption” and develop interventions

Note: Most projects should have strong outreach components involving Extension. Many should also involve industry, schools and agencies that deliver nutrition education

\$200 MILLION PROGRAMS IN CLIMATE CHANGE, MITIGATION AND ADAPTATION

- Carbon sequestration and life-cycle carbon balance;
- Mitigation and contribution so agriculture to climate change
- Competitively fund research and extension projects that focus on:
 - Life cycle analyses
 - Sustainable food, fuel, and fiber systems;
 - Conversion of lands to forests and to other plants species
 - Plants adapted to new climate paradigms
 - Regionally adapted climate models
 - Endemic and invasive pests and diseases;
 - Social and/or ecological resiliency
 - Water and climate change (affects on water quality, quantity, seasonality, and predictability)

Note: While not specifically stated, this effort must include “the environment”

\$200 MILLION PROGRAMS IN FOOD SAFETY

- Study the ecology of pathogens from field to fork (pathogen types, prevalence, concentration, serotypes, fingerprinting, food types, geography, climate, season, etc.);
- Develop pathogen controls based on the multiple hurdle concept, microbial physiology, and modes and mechanisms of action of hurdles;
- Develop and implement methods rapidly detect, respond to, and recover from food borne illness, including trace-back and trace-forward labeling to identify contaminate food products;
- Broadly implement food irradiation
- Develop coordinated, regionalized food safety system

\$200 MILLION PROGRAMS IN FOOD SECURITY AND WORLD HUNGER

- Develop smaller scale production systems that are economically viable regionally using local production as a core, i.e. match production with local consumption;
- Increase in scientific knowledge pool and training for international graduate students and professionals;
- Use biotechnology to enhance traits and production of local food crops;
- Reduce food crop use for bioenergy production
- Establish collaborative international research programs between US land-grant institutions and partner institutions in foreign countries;

Notes:

Must increase number of persons entering farming in the U.S

All efforts must include water availability

HIGH PRIORITY THEMES NOT IDENTIFIED

- Bioproducts
- Water resources management - quality and quantity
- Infrastructure and buildings programs
- Human capacity development

NIFA INSTITUTES

- YES 66% support the concept
- Plant and Animal Systems - Yes 80%
- Bioenergy and Climate Change - Yes 60%
- Health Nutrition and Food Safety - Yes 80%

Concerns:

Creation of institutes may result in an inflexible structure; suggest using the NSF Divisions model

One institute might dominate

Need to minimize the number to assure resources

OTHER INSTITUTES:

Institute for formula programs – No 75%

- Plant and Animal Diseases
- Families and Communities
- Natural Resources and Environmental Management

INCREASES TO FORMULA FUNDS

- General support for inflationary to 5% annual increases, which ever is greater