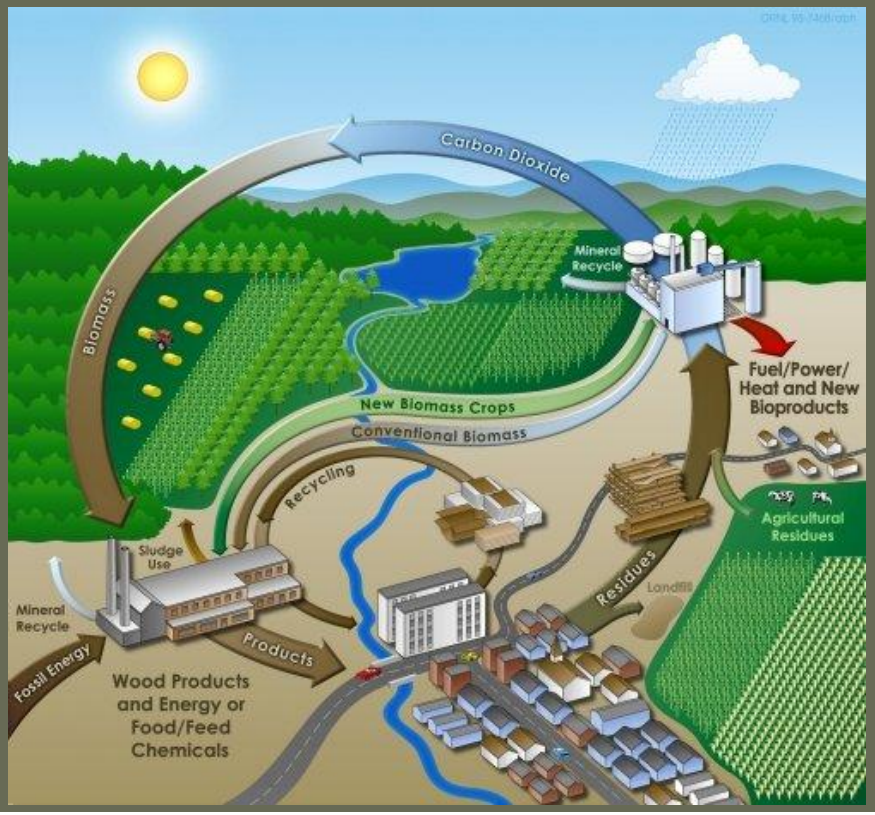
GROWING AMERICA'S ENERGY:

INVESTING IN SCIENCE-SECURING OUR FUTURE

NSF Grant Workshop
Norman, OK
April 30, 2010



USDA NIFA

Dr. Daniel Cassidy – National Program Leader

Discussion Overview

- Who is NIFA
- NIFA Approach to Bioenergy
- NIFA Bioenergy Funding Opportunities
- Who to contact within NIFA

National Institute of Food & Agriculture (NIFA)

- USDA's Extramural funding to advance agricultural research, education, and extension through competitive and non-competitive programs.

- Initiated October 1, 2009

- Dr. Rodger Beachy:
  1st Presidentially-appointed
  NIFA Director

Proposed NIFA Structure

- 4 National Institutes
  - Institute of Food Production & Sustainability
  - Institute of Food Safety & Nutrition
  - Institute of Youth, Family, & Community
  - **Institute of Bioenergy, Climate, & Environment**

- 1 Center
  - Center for International Programs

NIFA Priorities

Societal Challenges

- Global Food Security
- Climate Change
- **Sustainable Energy**
- Childhood Obesity
- Food Safety

New Biology for 21st Century (NAS Report)

- Sustainable Food Production
- Ecosystem Restoration
- Optimized Biofuel Production
- Improvements in Human Health

What hasn't changed?

- All previous CSREES-authorities transferred to NIFA
- Most, if not all, of the previous National Program Leaders retained their responsibilities
- Dedication to work with other REE-Mission Area partners, Federal, State, NGO, Universities, Tribes, Industries, and other stakeholders

NIFA Sustainable Bioenergy Strategy

"Growing America's Fuel"

- **Long-term outcomes:**
  - Meet the goal of 36 Billion gallons/year of biofuel by 2022.
  - Seamless supply-chain integration
  - Well-trained cross-disciplinary workforce

How?

- Development of *Regional-systems* that:
  - Reduce dependence on foreign oil;
  - Net positive impacts of social, environmental, and economic sectors;
  - And compatible with existing systems.

Bioenergy Supply-chain Segments

- **Feedstock Development**
- **Sustainable Feedstock Production Systems**
- **Feedstock Logistics**
- **System Performance Metrics, Modeling, Analysis, and Decision Tools**
- Feedstock Conversion/Refining
- Markets and Distribution
- Health and Safety Issues

NIFA Bioenergy Funding Programs

- Agriculture and Food Research Initiative
- Biomass Research and Development Initiative
- Critical Agricultural Materials
- Small Business Innovation Research
- Hatch, RREA, McIntire-Stennis Formula Grants
- Federally-directed Administrative Research

Agriculture and Food Research Initiative

- Combines NRI and IFAFS programs
- Largest competitive program for Research, Education, Extension, and Integrated projects
- Funding for FY 2010: ~$262 Million
  - Sustainable Bioenergy Focus: $40 Million
- Eligibility differs with regard to project type
  - Single Function vs. Integrated Program

AFRI – Sustainable Bioenergy

- Regional Approaches to Sustainable Bioenergy
- Sustainable Bioenergy Research
- Investing in America's Scientific Corps: Stimulating a New Era of Students & Faculty in Bioenergy
- National Loblolly Pine Genome Sequencing

Regional Approaches to Sustainable Bioenergy - Objectives

- Establish 3-5 Regional systems for the sustainable production of bioenergy and biobased products;
- Feedstocks of focus:
  - Energycane
  - Perennial Grasses
  - Sorghum
  - Woody Biomass
  - Oil crops (Oilseeds and Algae)
- Supports **Non-ethanol** based fuels

Regional Approaches to Sustainable Bioenergy - Specifics

- Regional Coordinated Agricultural Project (CAP)
  - Integrated Projects
  - Letters of Intent: **Due July 9, 2010**
  - Budgets up to **$9 Million/year**
    - **Project period of up to 5 years ($45 Million total)**
  - Contact William Goldner
    - wgoldner@nifa.usda.gov

Regional Approaches to Sustainable Bioenergy – Planning Grants

- Regional Systems CAP Planning Grants
  - Applications: **Due May 14, 2010**
  - Budgets up to **$50,000/year for 1 year**
  - Contact Jim Dobrowolski
    - jdobrowolski@nifa.usda.gov

Sustainable Bioenergy Research

- 3 Topical Areas for FY 2010
  - Crop protection for sustainable feedstock production
  - Enhanced-value co-product development
  - Carbon sequestration and bioenergy production
- Research Projects
- Letters of Intent: **Due April 30, 2010**
- Budgets: **$200,000/year; 5-year project period**
- Contact: Mary Purcell-Miramontes
  - mpurcell@nifa.usda.gov

Sustainable Bioenergy Research Future Focus

- FY 2011
  - Impacts of policy on production systems
  - Scalable conversion technologies
  - Impacts of production systems on pollinators and wildlife
- FY 2012
  - Land-use changes resulting from production systems
  - Socioeconomic impacts of biofuels on rural communities
  - Logistics of handling feedstocks for biofuels

Investing in America's Scientific Corps: Stimulating a New Era of Students & Faculty in Bioenergy

- Develop diverse workforce to meet the new needs of a bioeconomy
- Education Project
  - Letters of Intent: **Due April 30, 2010**
  - Budgets up to **$1 Million/year**
    - **Project period of up to 5 years ($5 Million total)**
  - Contact Daniel Cassidy
    - dcassidy@nifa.usda.gov

National Loblolly Pine Genome Sequencing

- Accelerate the completion of the genome sequence for improved adaptation for climate change and biofuels production
- Research Project
  - Letters of Intent: **Due May 7, 2010**
  - Budgets up to **$3 Million/year**
    - **Project period of up to 5 years ($15 Million total)**
  - Contact Ed Kaleikau
    - ekaleikau@nifa.usda.gov

Biomass Research & Development Initiative

- Joint Department of Energy-NIFA program
  - **VERY Competitive**

- Focus on:
  - Feedstock Development
  - Biofuels & Biobased Products Development
  - Biofuels Development Analysis

- Funding from USDA:
  - FY 2010: $28 Million
  - FY 2011: $30 Million
  - FR 2012: $40 Million

- RFA tentative release early May

Critical Agricultural Materials

- Research to replace petroleum-based materials
  - Model to support USDA Biopreferred program
- FY 2009 Funding: $1 Million
- RFA tentative release mid-spring
- Contact: Carmela Bailey
  - cbailey@nifa.usda.gov

Small Business Innovative Research

- Stimulate technological innovations in the private sector
- Increase commercialization of USDA-supported research
- Topical Area examples:
  - Forests and Related Resources
  - Plant Production and Protection – Biology
  - Plant Production and Protection – Engineering
- University members can serve as consultants

“Formula Funded” or Non-competitive

- Renewable Resources Extension Act
  - “Role of Extension in Forest-based Bioenergy”
- E-Extension
  - Communities of Practice
- Hatch and McIntire-Stennis
  - Research, Education, and Extension efforts

NIFA Bioenergy Expertise

- Carmela Bailey: Biobased Products
- Daniel Cassidy: Forestry, Bioenergy
- Nancy Cavallaro: Carbon Sequestration
- Jim Dobrowolski: Range and Grasslands
- Bill Goldner: SBIR, Biofuels Systems
- Fen Hunt: Resource Economics
- Ed Kaleikau: Plant Genetics/Genomics
- Shing Kwok: Biotechnology
- Mary Purcell-Miramontes: Integrated Pest Management