



National Institute of Food and Agriculture  
[www.nifa.usda.gov](http://www.nifa.usda.gov)

# Biomass Research and Development Initiative (And NIFA Activities)

Daniel Cassidy

National Institute of Food and Agriculture

National Program Leader – Forest Based Bioenergy





# Biomass Research and Development Initiative

- Objectives
  - Advanced Biofuels
  - Bioproducts
  - Biobased chemicals
- Technical Areas
  - Feedstock Development
  - Fuels/Product Development
  - Development Analysis (LCA)

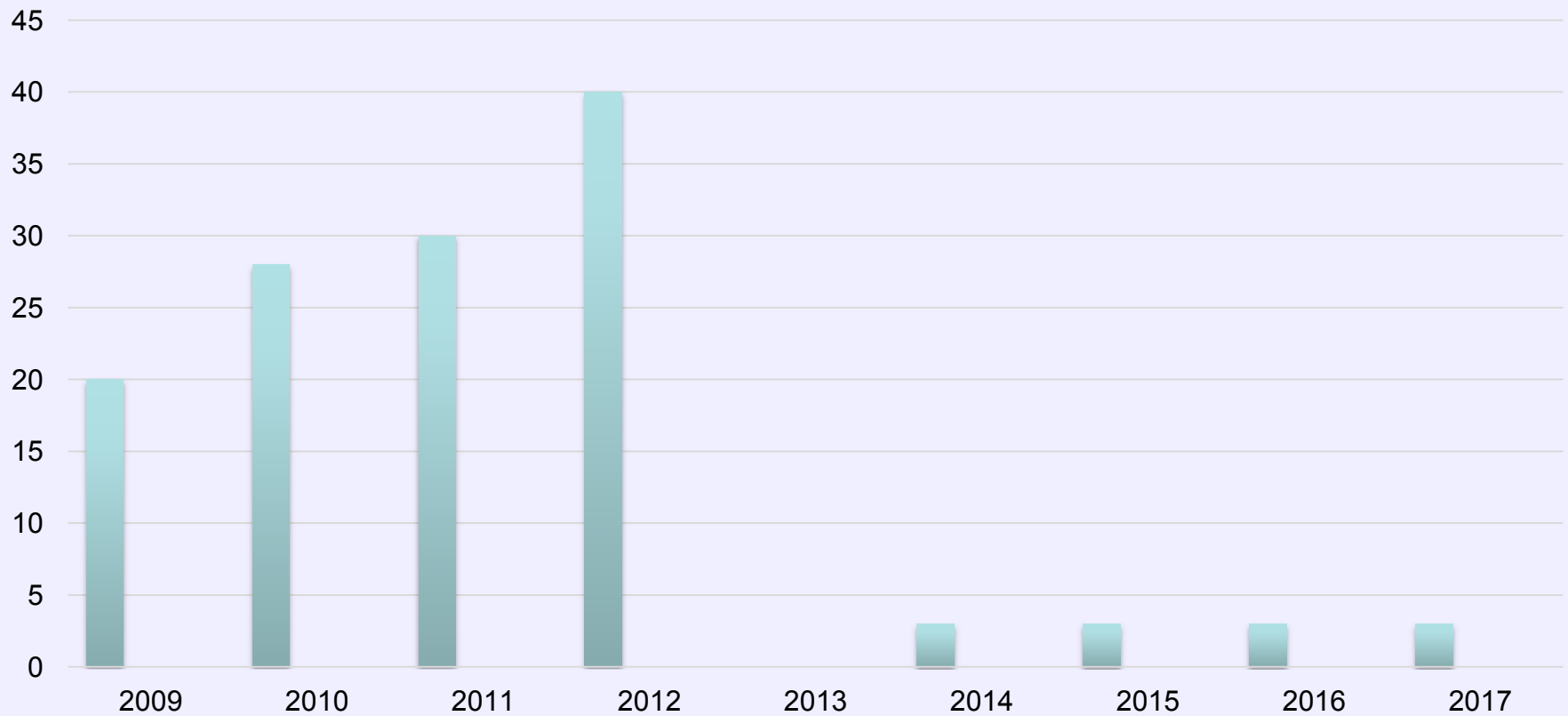


# Process

- Broad eligibility
- Pre-application Review overseen by DOE
- Full Application Review overseen by USDA
- Awards made by each Department
  - No comingling of funds between Departments
  - No comingling of R&D and Demonstration



# BRDI Funding in Millions





# Applications and Budget

- 414 LOI/Pre-applications
- 47 Full Proposals
- \$67.72 Million ask
  - USDA Combined year budget ~\$7.2 Million
  - DOE up to \$3 Million



# Topical Areas

- Feedstock Development: 7
- Biofuels/Bioproductions Development: 36
- Systems Analysis: 4



# Review Committee

- 14 Members plus a Panel Manager
  - 3 Federal Scientists
  - 3 Industry representative
  - 6 Academia representatives
  - 2 Private Consultants



# Committee Diversity

- 6 Females
- 5 Minority
- 12 States Represented
- 8 Former BRDI Panelists
- Members of the TAC involved





## USDA Awardees

- *“Integrated biorefinery to produce ethanol, high value polymers, and chemicals from lignocellulosic biomass”*
  - *University of California-Riverside*
    - *University of Tennessee*
  - *\$1.3 Million*



## USDA Awardees

- *“Cotreatment for low-cost fermentation of cellulosic biomass”*
  - Dartmouth College
    - Penn State, Bioenergy Science Center, Enchi Corp.
  - \$1.8 Million



## USDA Awardees

- *“Development of stochastic techno-economic and life cycle models for quantifying the economic and environmental costs of cellulosic bioenergy”*
  - *State University of New York*
  - *\$907,000*



## USDA Awardees

- *“Forest bioenergy and biofuels integration: Sustainability, energy balance, and emissions from forest restoration in the southern Rocky Mountains”*
  - *University of Montana*
    - *University of N. Arizona, USFS RMRS*
  - *\$1.3 Million*



## USDA Awardees

- *“Mid-Atlantic Biomass Sorghum Collaborative to Optimize Agronomic Production and Grower Profitability ”*
  - *North Carolina Biotechnology Center*
    - *NCSU, Virginia Tech, Chemtex International*
  - *\$1.9 Million*



## DoE Awardees

- “Improving tolerance of yeast to lignocellulosic feedstocks and products”
  - Massachusetts Institute of Technology
- “Biomass gasification for chemical production using chemical looping techniques”
  - Ohio State University
    - 8 Industrial partners



# Multistate Review Report

## November 1, 2016

- University of Kansas
- Domtar Pulp and Paper
- Forest Service – RMRS
- University of Florida
- University of Kentucky
- Exelus, Inc.



## BRDI FY 16-17

- Draft RFA developed and going through approval
- Incorporated TAC recommendations
- Streamlining process and timeline
- Release Date: Soon
- Last Solicitation under this Farm Bill



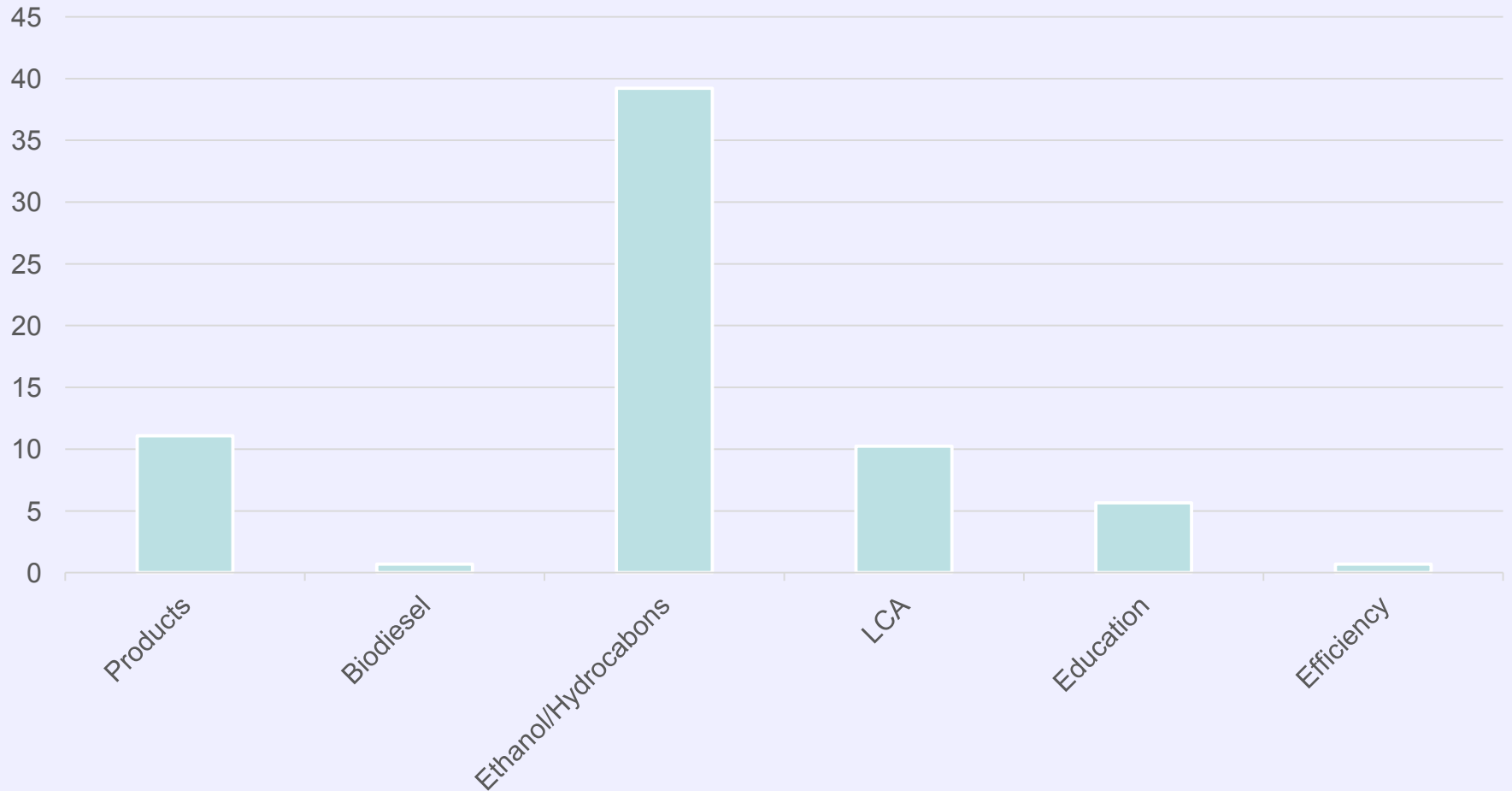


# NIFA

- Extramural funding arm of USDA
- Research, Education, and Extension
- 4 Institutes and Center for International Programs
  - Institute of Bioenergy, Climate, and Environment
    - Division of Bioenergy

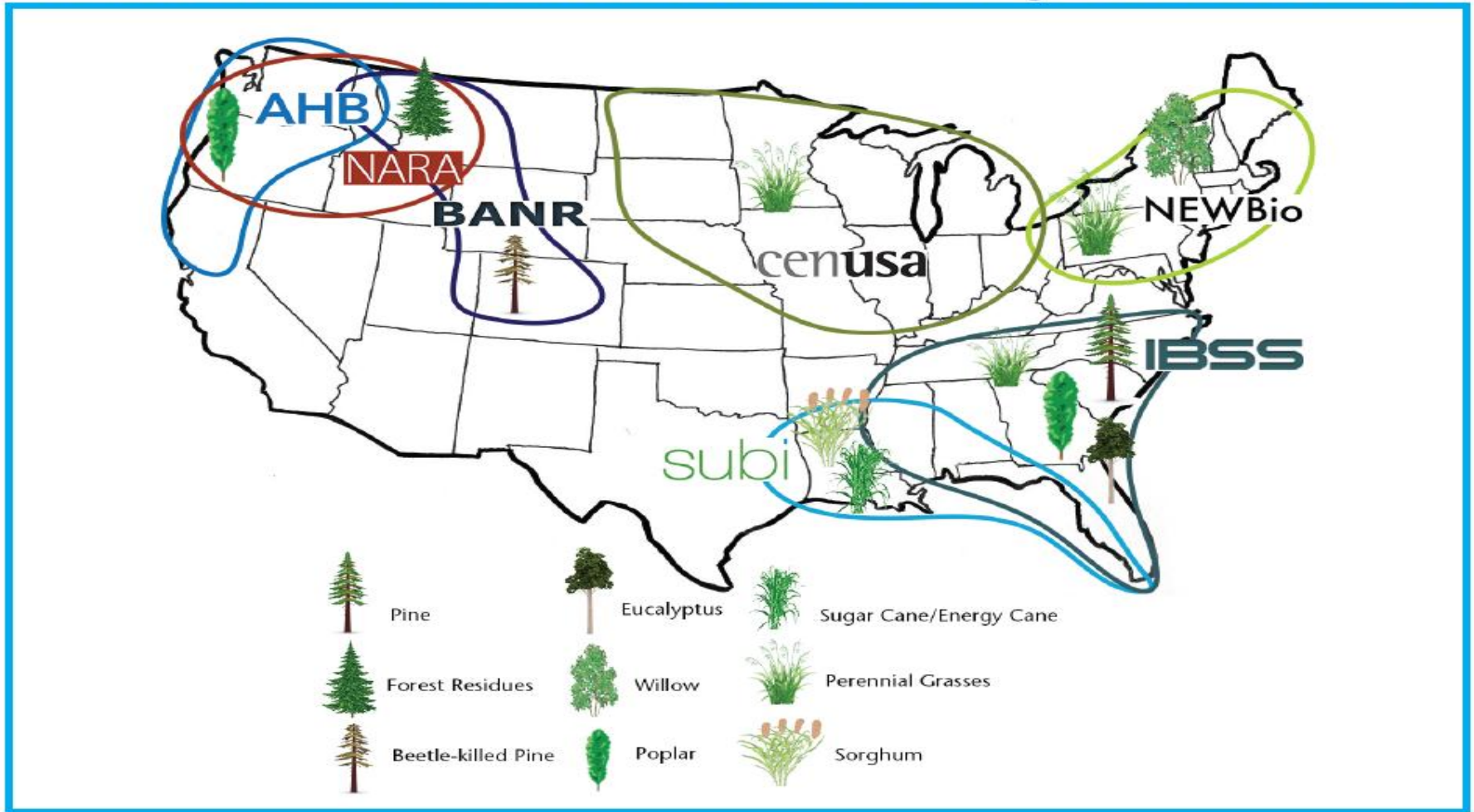


# 2015 Budget (~\$67 Million)





# AFRI Biofuel Feedstocks and Project Locations





## AFRI CAP Success

- NARA and Gevo
- 20% blend
- Forest residues
- 70% less CO<sub>2</sub>
- November 14





# AFRI Sustainable Biomass Education

- 3,394 Educators and Students reached
  - 30 states
  - 33% Minority
  - 38% teach where free/reduced lunch rate exceed 50%
- 30,240 Professional Development Credits



# Outcomes

- \$1.6 Million grant for Anaerobic Digester
- Teacher of the Year
- New School Business
  - Tomato Mulch Mats
- Community College Certificates



## Other AFRI Foci

- Co-Products Development
- Land-use Change
- Carbon Sequestration
- Wildlife and Pollinators
- Socio-Economics and Policy



# Other NIFA Competitive Programs

- Biodiesel Education Program
- Joint Feedstock Genomics with DOE
- Sun Grant Initiative
- Critical Ag. Materials Program
- Forest Research Initiative
- Innovation at the Nexus of Food, Energy, and Water





# Future Bioenergy at NIFA

- Hiring
  - Division Director, NPL for Logistics
    - Just hired new NPL for Agricultural Bioproducts
- FY 2016 RFA review
- New topics for FY 2017 and beyond
- Intensified Cooperation