



NASULGC National Association of State Universities and Land-Grant Colleges

Cooperative Extension Service and Energy Education

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NASULGC: A Public University Association



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Who is Cooperative Extension?

- 75 Land-Grant Universities
 - 57 States, Territories and DC
 - 18 Historically Black Land-Grants
 - Native American Institutions



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Land Grant Universities

- 1862 Morrill Act
 - Agriculture
 - Mechanical Arts
 - Military Science
- Today Major Public Universities



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Focus of Land-Grant Universities

- Learning
- Discovery
- Engagement





Legislation Expanded Efforts

- 1890 Morrill Act
- 1887 Hatch Act
 - Agricultural Experiment Stations (Research)
- 1914 Smith–Lever Act
 - Cooperative Extension Service
- 1994 Native American Institutions



Extending Research-based Knowledge

- Engagement and Cooperative Extension
 - Linked to University and Other Research
 - Over 3,000 County Offices
- USDA – Historic and Ongoing Linkages
- Many Other Agencies and Groups
- Engaging Individuals, Business and Communities in Transformational Learning



Cooperative Extension System

- **Cooperative is Intentional!**
- Non-formal, non-credit learning
- Community-based
 - **Learning community often engaged in the development of the learning process**
- Often first responders in education
- Deploying knowledge to user communities
- Applied research with users
- Most Programs at no or minimal cost





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Transformational Learning

- Setting Learning Outcome Goals
- Developing Education Programs
- Delivering Education Programs
- Measuring Outcome Goals



Seeking Actionable Change

- Changing behavior, habits, policy and practices
- Beyond just knowledge
- Action



Partnerships and Funding

- States through the **Land-Grant Universities**
- Local Governments – **Counties and Cities**
- Federal
 - USDA
 - **Cooperative States Research, Education, and Extension Service**
 - Other Partnerships
- Private Partnerships
 - Foundations, Associations and other



Community-based Programs

- **Economic and Community Development**
- **Families and Home**
- **Personal Development**
- **Environment**
- **Plants**
- **Animals**
- **Energy**





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Economic and Community Development

- Small Business Development
- Entrepreneurship
- Disaster Preparation and Response
- Public Issues Education
- Energy





Families and Home

- Family Financial Management
- Housing
 - Energy Efficiency
 - Environmental Safety
- Parenting
- Caregiving/Elder Care

- **Energy**



Photo from
<http://Servingthosewhoserve.org>



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Personal Development

- Healthy Life Style
- Stress Management
- Nutrition
- Food Safety
- 4-H Youth Development
 - After-school
- Leadership Development
- **Energy Choices**





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Environment

- Water Quality
- Soil Conservation
- Pesticide Management and Use Training
- Home Air Quality
- Climate Change
- Energy





Plants

- Home Horticulture and Gardening
- Small Farming and Community Gardens
- Commercial Crop Production
- Food Processing
- Woodlands and Forests
- **Energy Production**





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Animals

- Ranching
- Veterinary and Public Health
- Commercial Animal Production
- Sustainable Agricultural Systems
- Insect and Pest Management
- **Energy and Waste Streams**





Cooperative Extension

Energy Responses

- Agricultural Systems
- Renewable Energy
- Energy Efficiency
 - Homes
 - Businesses
 - Local Government/Communities
 - Educational Institutions



Agricultural Systems

- Equipment and buildings
- Indirect energy use
- Integrated energy systems
- Land-based sources of energy
- Sustainable Resources



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Renewable Energy

- Bio-fuels and products
- Solar
- Wind
- Methane
- Geothermal
- Co-generation



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Energy Efficiency

- Building Sciences
- Agricultural Production Systems
- Food Processing Systems
- Communities



Some History

- Before 1977
 - Farm Efficiency
- 1977 Legislation created energy extension program
 - Eliminated in 1990's



DOE/NASULGC Partnership

- Pilot project 2005-2008
 - Biomass
 - Housing in Hot-Humid Zone
 - Youth Education in Energy
 - Structures – Educational Programs
 - Integrating Research
- Limited funding



Other Partnerships

- DOE/NASULGC
- Sun Grant Program
- Energy Star
- USDA/REE Energy Science and Education Program
- State Energy Offices
- Many Others



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eXtension

- Developed by LGUs
 - Currently funded by LGUs and USDA/CSREES
- 24/7/365 Trusted Information and Education
- Communities of Practice
- <http://about.eXtension.org>



Possible COPs

- Bio-fuels and Products
 - Ethanol, Bio-diesel, Methane
- Energy Efficient Buildings and Structures
 - Homes, Small Businesses, Educational Institutions, Local Government
- Renewable Energy
 - Scalable energy systems, net-zero farms
- Rural Communities Dealing with Changing Land-use



Program Connections

- For local program information and access call
 - one of the 3,000 local county or city Cooperative Extension Offices, or
 - the state Cooperative Extension Office at the Land-Grant University



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