



# What is BANR ?

Bioenergy Alliance Network of the Rockies

BANR is a Coordinated Agricultural Project (CAP) funded by the Agriculture and Food Research Initiative Competitive Grant no.2013-68005-21298 from the USDA National Institute of Food and Agriculture (NIFA).

# The Bioenergy Alliance Network of the Rockies (BANR)

A grant that brings together industry, scientists, educators, and extension specialists to explore the use of beetle-killed & other forest biomass as a bioenergy feedstock, and to provide scientific underpinnings to assess the economic, social and environmental implications of a regional renewable energy industry

5 Major tasks areas include: Feedstock, Harvest Logistics & Processing, System Performance & Sustainability, Education and Outreach.



# CO, MT & WY Educators Engage in Bioenergy...

13 teachers from 3 different states participate a 3-year program to learn about bioenergy resources and create regionally relevant educational materials based on this biofuel concept



# BANR Accomplishments After Year 2...

- ❑ Sharing of current bioenergy classroom activities by BANR teachers
- ❑ Biochar research update & field work with Erika Foster at CSU's ARDEC (Agricultural Research Education Center)
- ❑ Forest research data protocol training & forest monitoring with Tony Vorster
- ❑ Assessment & framework collaboration by working groups on biochar amendments, forest ecology & biofuel production
- ❑ A visit to the CSU Powerhouse/Energy Institute to examine alternative energy sources and uses
- ❑ Updates from John Field about other BANR task groups and their progress
- ❑ Working with black carbon boxes at the College of Natural Sciences Education & Outreach Center at CSU



# RET (Research Experience for Teachers) within BANR...



## Lab Protocols

A WY high school teacher, worked in the lab with a BANR researcher pouring soil slurry into filters for further analysis.

## Forest Monitoring

BANR educators learn a forest monitoring protocol from Tony in the CO state forest



## Biochar Research

A CO middle school educator, measured soil moisture, temperature and CO<sub>2</sub> flux out in the agricultural fields



## Still more BANR ...

- State site workshops in both the Spring & Fall terms  
Implementation of bioenergy-related lessons & activities
- BANR classroom mini-grants awarded to purchase lab materials for classrooms
- Bi-monthly Webinar workshops (socioeconomic impacts, mountain pine beetle, biochar amendment, carbon sequestration...)
- Comparing bioenergy sources Mini-stoves to simulate the pyrolysis of biofuel production
- CO<sub>2</sub> gas probes for classroom use
- Summer workshops
- Continuing collaboration among BANR teacher working groups



The focus in year 3 will be more collaborative work within the working groups through webinar workshops and a deeper understanding of life-cycle analysis.

The broader impact goal is to create units and materials that can be disseminated to other educators.

# Questions

