


# Overview of environmental antibiotic resistance work in USDA- Agricultural Research Service



 Presented at the  
*Presidential Advisory Council on  
Combating Antibiotic Resistant Bacteria*  
Washington, D.C. June 22, 2016

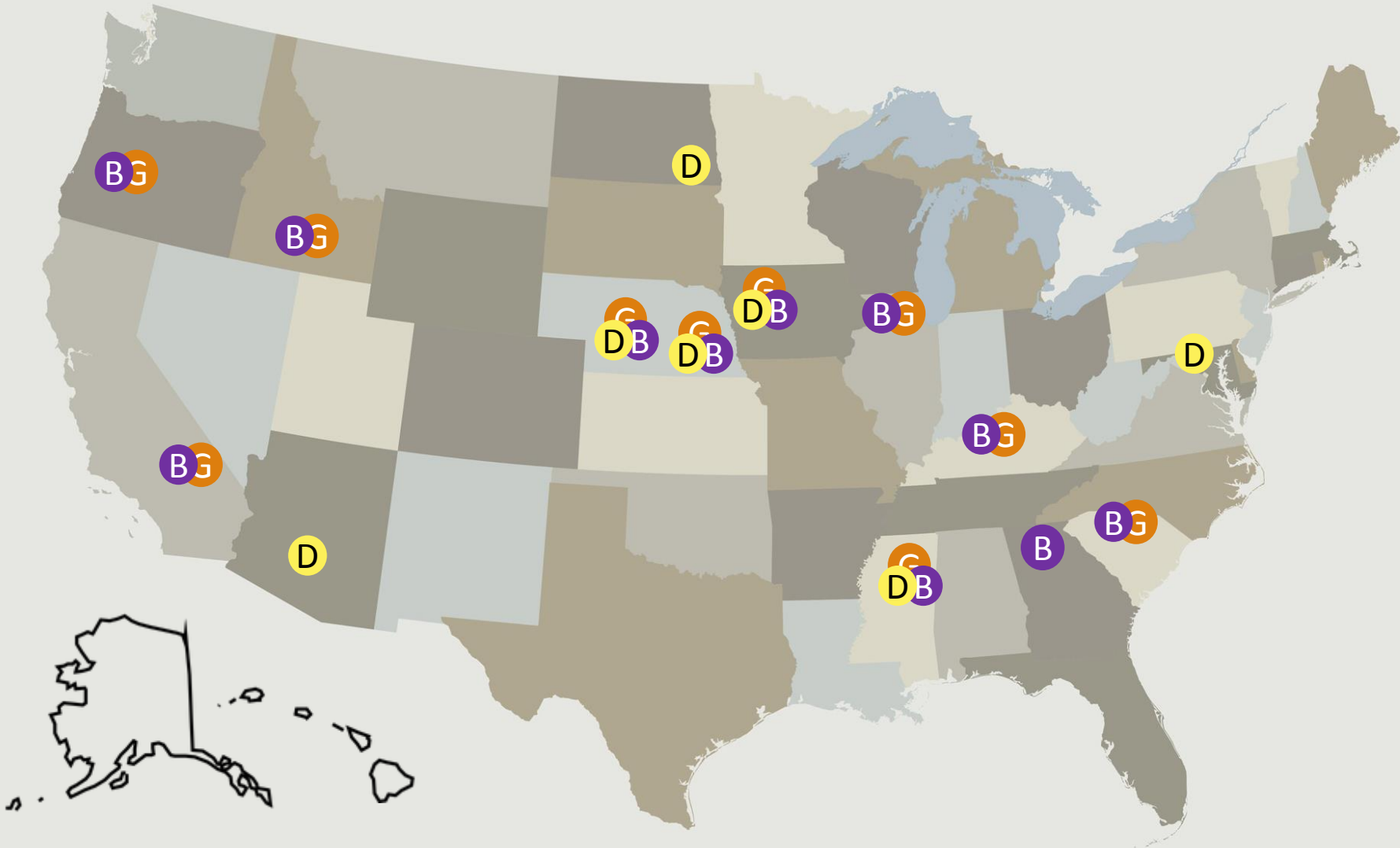


# ARS Locations with active environmental AR programs

**D** Drugs

**B** Bacteria

**G** Genes









## Collaborations and other activities within ARS

Agricultural Antibiotic Resistance Network (AgAR)

Integrating ARG data with GRACEnet/REAP

Multi-location micro-surveillance of four ARG targets in environment

Agency-wide workshops on AR in Agroecosystems, and Alternatives to Antibiotics

BEAR unit now includes leadership with veterinary and environmental AR expertise



## Collaborations and other activities outside ARS

National Institute Food Agriculture – external grants program

State of the Science Workshop

Journal of Environmental Quality Special issue

<https://dl.sciencesocieties.org/publications/jeq/tocs/45/2#h1-SPECIAL>  
SECTION: ANTIBIOTICS IN AGROECOSYSTEMS: STATE OF THE SCIENCE

Bilateral US Canada working group

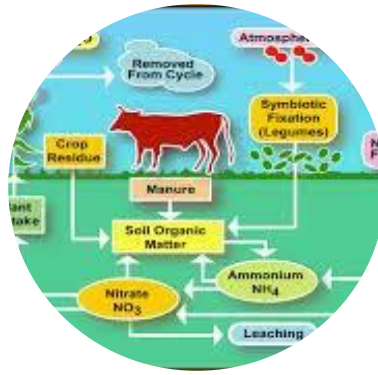




# Examples of ARS Environmental AR Research



**Ibekwe** Watersheds and environmental *E. coli*



**Miller** Impact of drugs on microbial nutrient cycles



**Moorman** Tile drainage and wood bioreactors

**Brooks** AR in swine production phases



**Stockwell** AR in fruit trees and crops



**Dungan** Land application of manures



**Williams** Drugs in irrigation water and plant uptake



**Ducey** Treating manure to reduce environ AR



# AgAR Advisory Team



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# Questions?

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