



# USDA-ARS Grape & Wine Workshop

Genetics, Breeding  
and Germplasm



# Gap Components

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- Breeding and evaluation for:
  - pest and disease resistance
  - environmental adaptation
  - commercial attributes
- Providing clean grapevine materials from around the world
- Improving partnership between ARS and stakeholders
- Enabling technologies for improvement and evaluation of grapevines



# Pest and Disease Resistance

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- Priority pests and diseases:
  - Powdery mildew
  - Wood canker diseases
  - Bunch rots
  - Nematodes
  - Bacterial diseases (PD, crown gall)
  - Post harvest diseases (table and raisin)



# Environmental Adaptation

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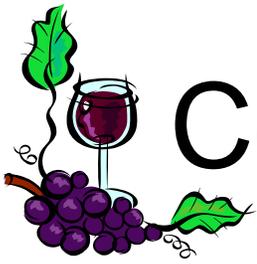
- Cold hardiness
- Desert adaptation
- Regional adaptations
- Stability of quality attributes in different conditions (flavor, aroma, texture, color)



# Commercial Attributes

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- Diverse and improved product quality attributes
  - Color
  - Flavor
  - Shapes
  - Mouthfeel
  - Nutrition/Health
  - Shelf-life



# Commercial Attributes (cont.)

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- Horticultural Attributes
  - Vigor
  - Mechanical management practices
  - Cluster and canopy architecture
  - Early ripening and natural DOV



# Clean Grapevine Material

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- Encourage exploration of genetic diversity from all sources
- Streamline identification, importation, and clean up of valuable grapevine materials
- Develop user-friendly network for variety cataloging, characterization, and communication



# Improving Partnership

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- Communication and Cooperation
  - Industry interface in research process
  - Ongoing dialogue on industry needs and technology transfer
  - Research activities
- Productivity
  - Greater coordination among researchers
  - accelerated timelines
  - reduced costs



# Enabling Technologies

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- Development and integration of genetic tools and information for plant improvement and evaluation
- Identification and diagnostic services that benefit industry and research communities
- Coordination and sharing of commercially relevant characterization practices and information