



USDA - ARS
Research Highlights on
Quality

Jungmin Lee

Horticultural Crops Research Laboratory
(HCRL)



Team research addressing quality



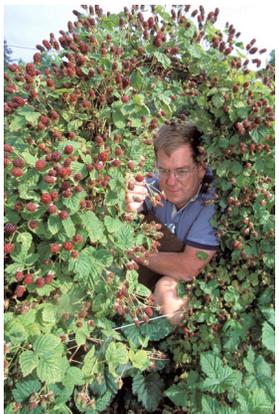
Bob Martin
(ARS, Virologist)

- Grapevine leafroll associated virus (GLRaV)



Paul Schreiner
(ARS, Root Physiologist)

- Vine nutrition and irrigation



Chad Finn
(ARS, Plant Breeder)

- Small fruit breeding



Julie Tarara
(ARS, Viticulturist)

- Vineyard microclimate



Jim Kennedy
(OSU, Wine Chemist)

- Tannin chemistry



Kerri Steenwerth
(ARS, Soil Scientist)

- Vineyard floor management

. . . and industry cooperators

2005 meeting's highlights on quality

Processed Foods Research Unit (PFRU)

- Food processing equipment and analytical instrument capabilities
- Innovative products and packaging

www.ars.usda.gov



Tara McHugh



ARS researchers working on 'quality'

Processed Foods Research Unit (Albany, CA)

- John Roberts (Food Technologist)
- Gary Takeoka (Chemist)
- Wally Yokoyama (Chemist)

South Central Agricultural Research Laboratory (Lane, OK)

- Penny Perkins-Veazie (Plant Physiologist)

Food Composition Laboratory (Beltsville, MD)

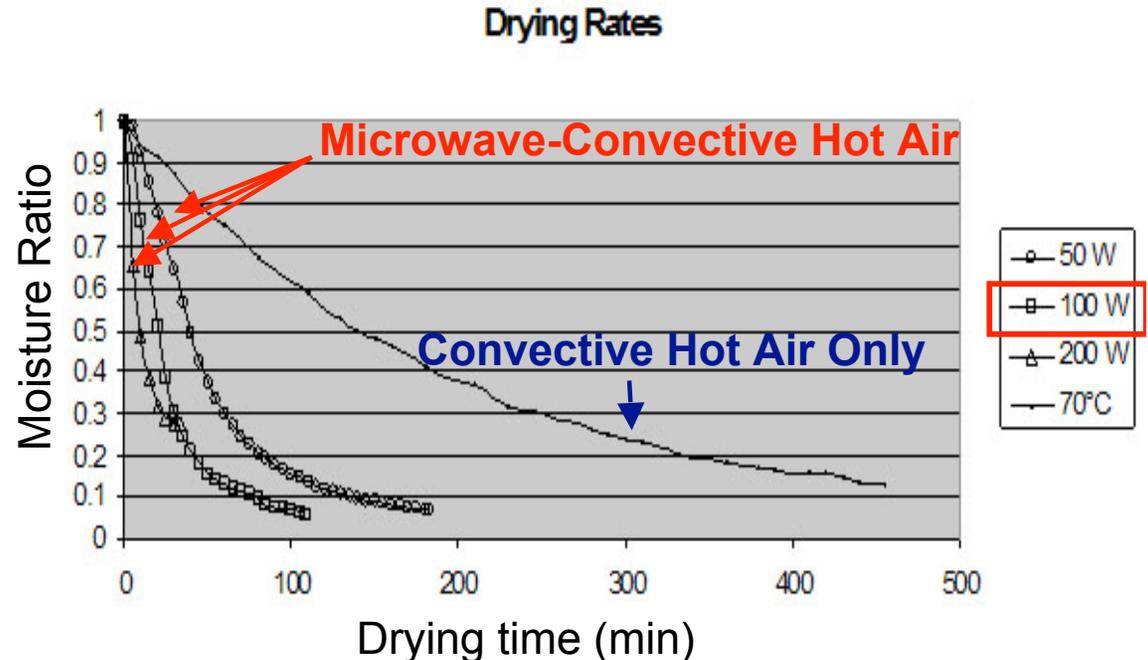
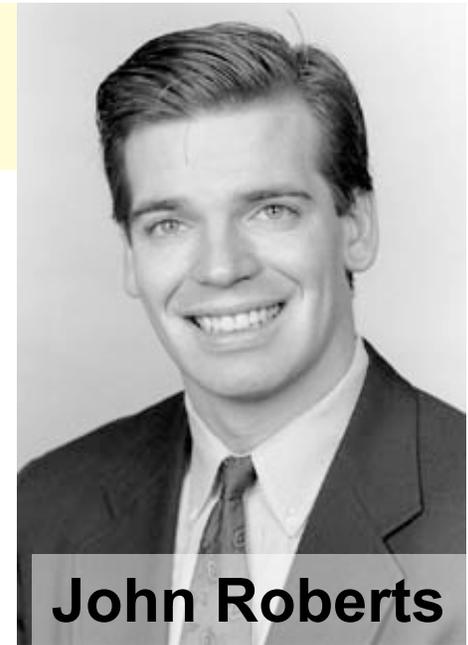
- Jim Harnly (Chemist)

HCRL Worksite (Parma, ID)

- Jungmin Lee (Food Chemist)

Improved raisin processing

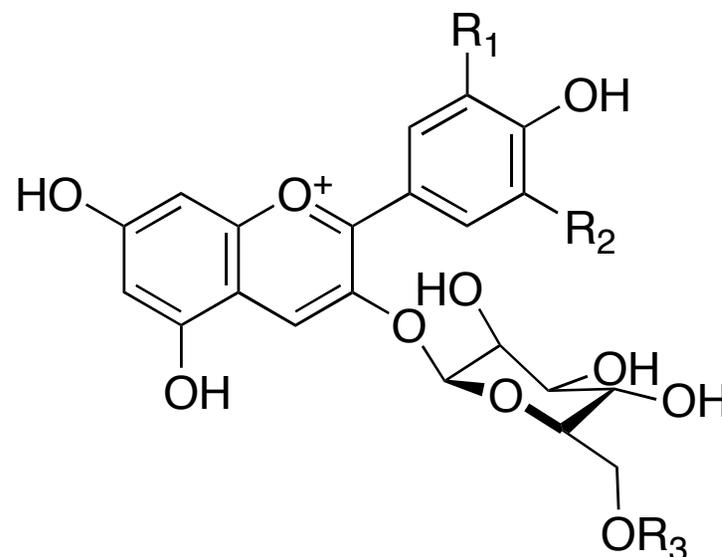
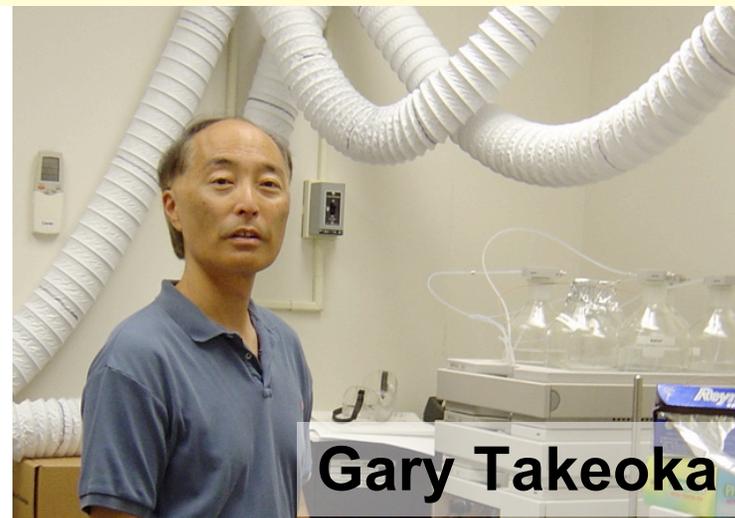
- Microwave-assisted dehydration to improve color and quality
- Reduced drying time and energy expended
- Investigate and develop new processing technologies



Collaborators: Istanbul Technical University faculty (Istanbul, Turkey)

Anthocyanins (ACY) of new table grape cultivars

- Wide variation of ACY
- Acylated ACY concentrated in skin
- Optimize nutritional benefits, color quality and stability of grape and grape products



Collaborators:

David Ramming (ARS, Parlier, CA) and Lan Dao (ARS, Albany, CA)

Pterostilbene

- as a new PPAR α agonist

- Pterostilbene

Analog to resveratrol

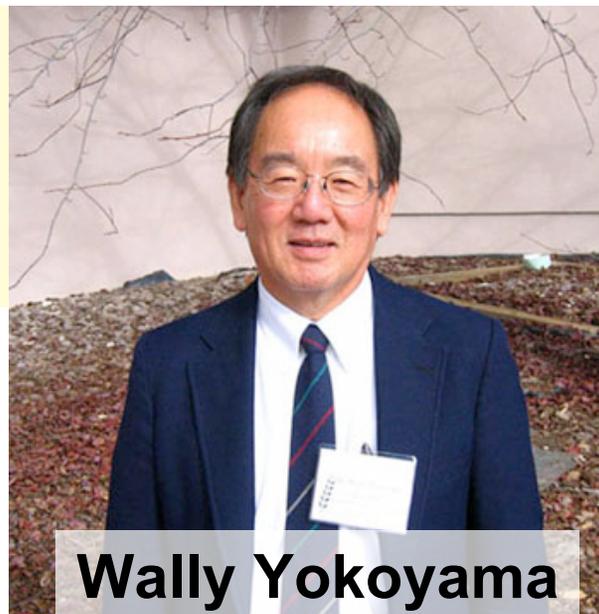
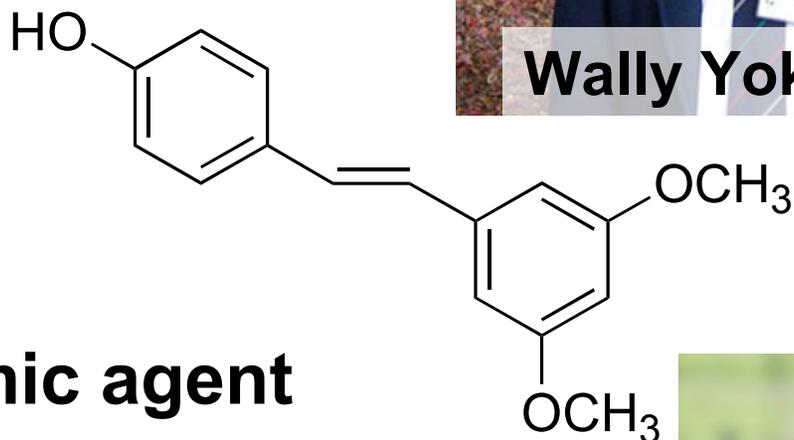
Antifungal

Cancer preventative

Antidiabetic

Effective hypolipidemic agent

- Improve nutritional value of food and help fight diabetes



Wally Yokoyama



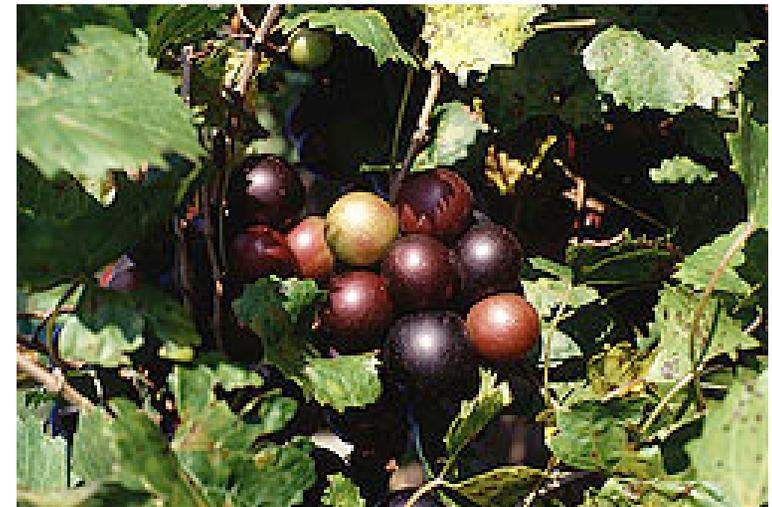
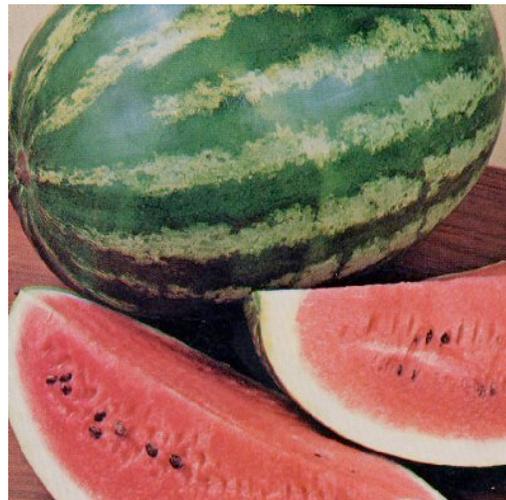
Collaborators: Agnes Rimando (ARS, Oxford, MS) and University of Mississippi faculty (University, MS)

Enhancing muscadine grape quality

- Enriching carotenoids in fruits and vegetables
- Improve fresh market quality
- Increase beneficial health compounds
- Improve healthful compounds in fruits and vegetables



**Penny
Perkins-Veazie**

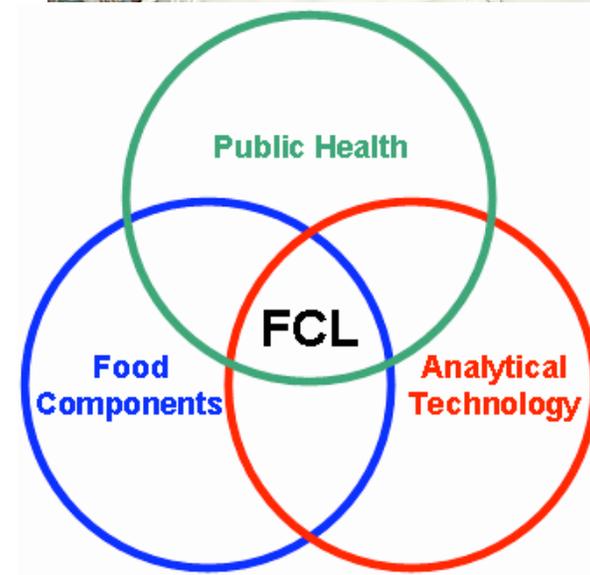


Collaborator: Stephen Stinger (ARS, Poplarville, MS)

Faster and better food analysis

- Screening methods for phenolic compounds in food
- Analytical method evaluation for USDA's national nutrient database
- Extraction procedures for phenolic analysis
- Other compounds. . .
- Develop innovative measurement system

Collaborators: Joanne Holden, Longze Lin, and Dave Luthria (ARS, Beltsville, MD)



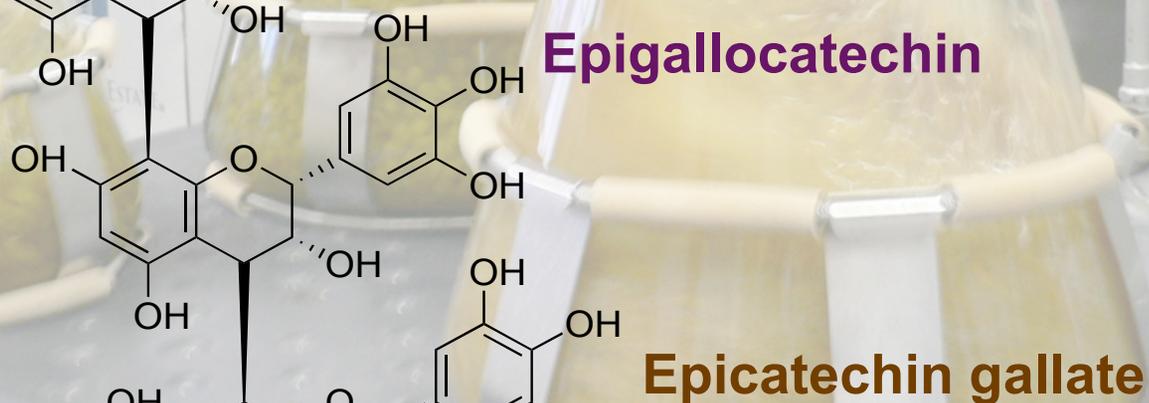
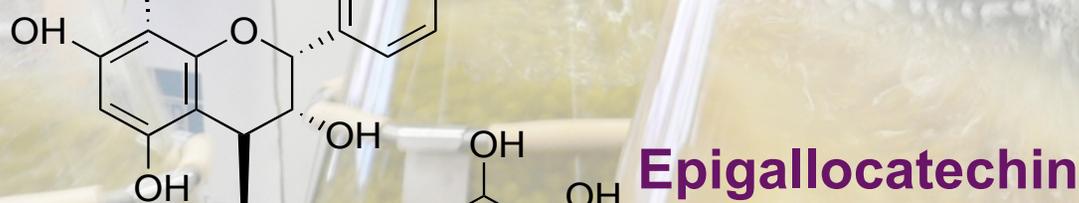
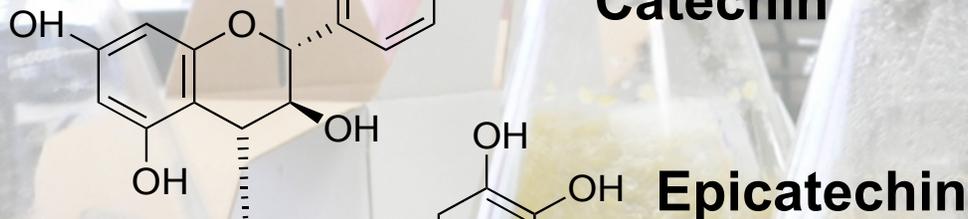
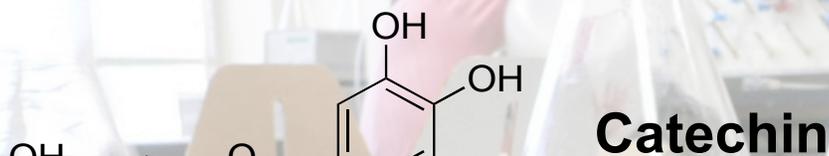


Cabernet Sauvignon grape quality: cover crop, tillage, and rootstock



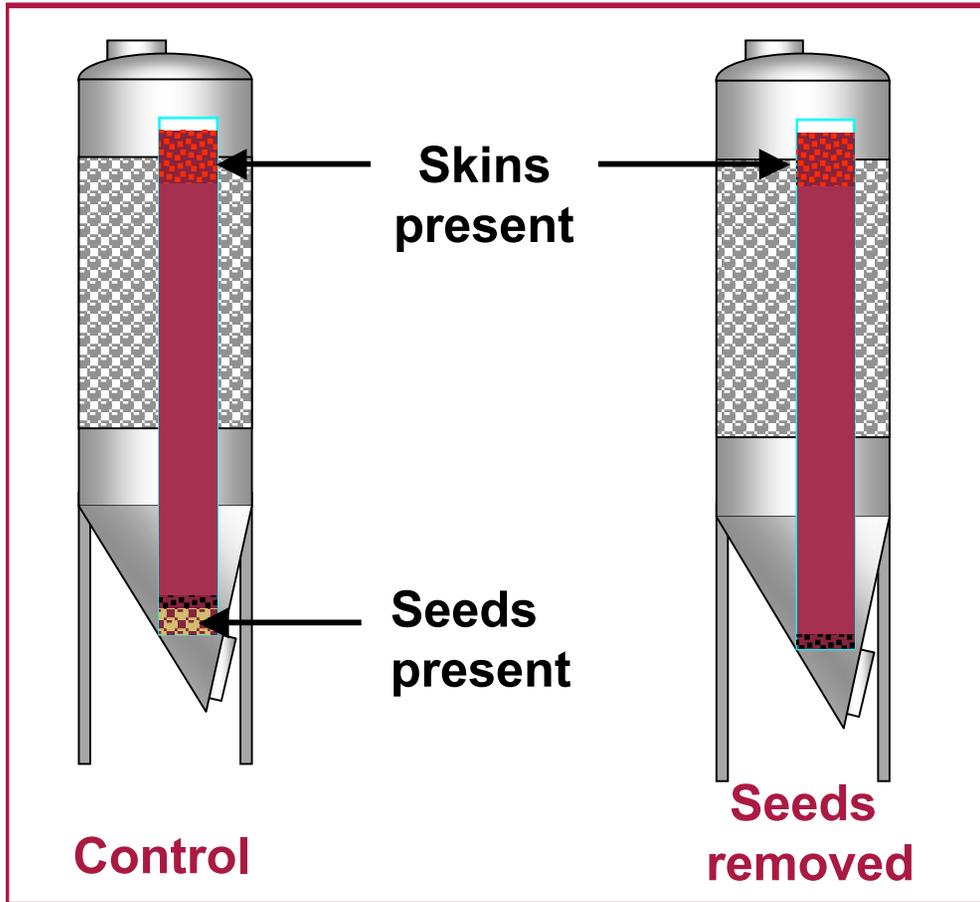
Collaboration with Kerri Steenwerth (ARS, Davis, CA)

Evolution of grape and wine polyphenolics



Collaborators: Oregon State University faculty (Corvallis, OR) and the Hogue Cellars

Early seed removal during fermentation



- Proanthocyanidin composition
- Minor differences

Composition of Idaho wines



A standard glass of Idaho wine can provide 2 mg of stilbenes

Thank you!

