



## 2016 PA Wine Marketing & Research Board Symposium

Co-hosted by Penn State Extension and the Pennsylvania Winery Association (PWA)

\*Designates speaker



**Featured Guest Speaker: Dr. Gavin Sacks, Cornell University**

**Notes from the tannin wasteland – or, what’s limiting tannin extraction during red winemaking?**

Tannins are the primary chemical compounds responsible for the perception of astringency (“drying, gripping, etc.”) in red wines. Red wines from the Eastern United States – particularly those produced from interspecific hybrids – tend to have lower concentrations on tannins than their West Coast counterparts. While this is in part due to lower concentrations of skin and seed tannin in regional fruit, it is also a consequence of poor tannin extractability. The talk will review recent work by our group on chemical constituents in grapes (*e.g.*, proteins) that can limit tannin extraction and retention, and discuss potential strategies for increasing wine tannin.



**ENOL: Investigation of a Novel Polymer-Based Fining System for the Removal of Foxy/Native Aroma in *Vitis vinifera* Wines**

By: Charlene Van Buiten\* and Dr. Ryan Elias

Despite being characteristic of native grape species, an aroma attribute described as “foxy” or “native” has been shown to appear in *V. vinifera* wines in the northeastern United States as a result of either endogenous formation or inadvertent exogenous addition of grape-derived compound known as 2-aminoacetophenone (2AAP). While techniques for preventing the introduction of 2AAP to *V. vinifera* wines has been explored, the present work explores a novel method for removal of 2AAP from wine using a polymer-based cation exchange system that can easily be added to finished products post-vinification.



**ENOL: What's that smell?! Predicting Reductive Odors in Wines**

By: Gal Kreitman\* and Dr. Ryan Elias

This presentation will include a brief overview of some important fermentation derived volatile sulfur compounds that negatively impact wine quality. A method for forcing the reduction and release of sulfur oxidation products to their potent low threshold form by addition of



specific reagents is described. Depending on the result obtained, winemakers can make informed decisions for bottling style and make suggestions when wines should be consumed.



## **ENOL: Where has all the color gone? Oxidation techniques for improving color stability of PA red wines**

By: Marlena Sheridan\* and Dr. Ryan Elias

I will be presenting a brief overview of stable pigment formation in red wines and techniques that can be used by winemakers to improve color stability. Research on the wine chemistry leading to polymeric pigments will be discussed. The results of a study on oxidation techniques for a Cabernet Franc wine, including a replacement for micro-oxygenation, will also be described.



## **VIT & ENOL: Live life with a little spice: Do vineyard practices affect the black pepper flavor of Noiret grapes and wine?**

**\*With tasting!\***

By: Laura Homich\*, Dr. Michela Centinari and Dr. Ryan Elias

Recently, researchers and wine industry stakeholders have shown increasing interest in the aroma impact compound rotundone which imparts the spicy, black pepper aroma in many grapes, wines, herbs, and spices. This research study aims: 1) to identify the presence of rotundone in the Pennsylvania grown wine grape variety Noiret, 2) to investigate the effects of cluster sunlight exposure and timing of leaf removal on the dynamics of rotundone development throughout the growing season, and 3) to determine the relationship between rotundone concentrations in the wines vinified from the light exposure and leaf removal treatments and consumer perceptions of the black pepper aroma intensity.



## **VIT & ENOL: Five years of the PA wine variety trial: A comparison of Northwestern and South-Central Pennsylvania**

**\*With tasting!\***

By: Dr. Michela Centinari\*, Denise M. Gardner\* and Dr. Rob Crassweller

It's been 5 years of monitoring and fermenting varieties from two experimental vineyards in North East (Northwestern) and Biglerville (South-Central) Pennsylvania. Dr. Michela Centinari will review vineyard impacts related to about 40 different wine grape varieties while Denise Gardner will describe fermentation impacts. A tasting of several wines will also be included. Denise will host a tasting of red wines associated with high-potassium fermentations, and describe ways to address unbalanced

potassium levels in the wine. Additionally, a review of pre-fermentation juice treatments in Vidal Blanc will also be explored.



**VIT: Spray-on materials: can they reduce frost damage to grapevines?**

**\*With tasting!\***

By: Dr. Michela Centinari\*

Yield loss related to spring freeze injury is an economic threat for many grape growers in the eastern U.S. Michela will discuss current work on the use of materials to delay budbreak (soybean oil) and provide frost protection to young grapevine shoots after budbreak (potassium dextrose lactose, KDL). Effect of soybean oil and KDL applications on yield components, fruit composition and perceived wine quality will be also presented.



**VIT: Updates on Grape Disease Management Research**

**\*1 Pesticide Credit Available for Those in Attendance, Pending Approval by the PDA\***

By: Bryan Hed\*

Bryan will discuss past research and current progress regarding pre-bloom cluster zone leaf removal. Among the topics covered will be (i) a brief review of what PWMRB funded research has enabled us to accomplish regarding this practice, (ii) the pros and cons of this cultural practice, and (iii) our latest efforts to mechanize it and make it more cost effective for adoption into bunch rot control programs.



**VIT: Assessing Spotted Winged Drosophila Injury Potential on Grape Production**

**\*1 Pesticide Credit Available for Those in Attendance, Pending Approval by the PDA\***

By: Jody Timer\* and Dr. Mike Saunders

My presentation will explore the vulnerability of grape cultivars to infestation by spotted wing drosophila, *Drosophila suzukii*, (SWD) in the Lake Erie grape growing region. This research examines correlations between trap catches, degree days, wine cultivars, and brix accumulations. The results from SWD trapping provided initial, peak, and cessation of SWD activity, as well as their rate of dispersal into vineyards. Given the propensity for this insect to spread and its potential to infect fruit, it is important to maximize monitoring and management efficacy of SWD, in furtherance of fruit infestation and crop loss.



**VIT: Managing crop size: what can it mean for your vines, wines, and bottom line**

**\*With tasting!\***

By: Maria Smith\* and Dr. Michela Centinari

Regulating crop load in vines is critical for optimal vine health and wine quality. We assessed how new and traditional canopy management methods influence vine production, winter survivability, grape and wine composition, sensory perception, and economic sustainability in high-cropping hybrid and European vine varieties.