



**CHEMISTRY &  
BIOCHEMISTRY**

**DATE**

**11/01/2024**

**TIME**

**10:30am**

**LOCATION**

**ADMIN 364**

# **CHEMISTRY & BIOCHEMISTRY SEMINAR SERIES:**

## **Fusing Science and Art: The Quest for Objective Chemical Measures of Wine Quality**

### **Abstract:**

Producing high-quality wine is a nuanced blend of science and art, hinging on both technical and subjective expertise of seasoned winemakers to refine and optimize a range of starting conditions and downstream processes to achieve desired sensory targets, factoring in variables including grape variety, viticultural practices, winemaking techniques, and aging. Our research employs analytical chemistry, sensory science, and statistical modeling to support traditional wine quality assessment and inform underlying production practices through elucidation of objective chemical measures of grape and wine quality. In this talk, I will share a perspective of how chemistry can be applied in the beverage industry to support product innovation and quality management, diving into the constituents of wine and related precursors that influence aroma and mouthfeel perception.

### **About the Speaker:**

Bruce Pan is the Director of Chemistry Research at GALLO. He holds undergraduate (BA, Molecular Biology) and doctoral (PhD, Molecular Nutrition and Biochemistry) degrees from Cornell University (Ithaca, NY), where he completed a post-doctoral appointment studying Wine Chemistry in the Department of Food Science before joining GALLO in 2010. His research interests focus on modeling relationships between the chemical composition of raw materials, production processes, and desired sensory attributes for beverage innovation, as well as deploying analytical chemistry platforms at enterprise scale to optimize product quality and chemical specifications. As part of the R&D leadership team at GALLO, Bruce partners cross-functionally across the research community to support stakeholders and leverage objective chemical metrics throughout winemaking, spirits, and beverage development. He currently serves in various capacities on advisory boards in the public sector, including the American Vineyard Foundation (AVF) and the USDA.



**Bruce Pan**

Director - Chemistry Research

**GALLO**

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