



2020 AWSEF Scholarship Awards

The 2020 AWSEF Scholarship Recipients:

Andrew Harner*, PhD Candidate at Pennsylvania State University

Andréanne Hébert-Haché*, PhD Candidate at Brock University, Ontario

Sarah Lyons, Masters Candidate at University of British Columbia

Laise Sousa Moreira, PhD Candidate at University of Minnesota

Guynh (Kim) Phan, PhD Candidate at Oregon State University

Clarissa Reyes, Masters Candidate at University of California-Davis

Ieva Zigg, Masters Candidate at University of British Columbia

*Former scholarship recipient

Andrew Harner, PhD Candidate

Pennsylvania State University

Banfi Wines Scholarship

As a graduate student at Penn State, my research has been guided by a keen interest in how environmental conditions and vineyard management practices interact to influence grapevine physiology and wine grape quality. One component of my research investigates how regional weather conditions and viticultural practices affect the grape and wine characteristics of Pennsylvania-grown Grüner Veltliner.

A second major component of my research focuses on a novel invasive insect pest, the spotted lanternfly, and specifically how differing population sizes of these pests can affect grapevine health and fruit quality. Although this insect was recently introduced to the U.S., it poses a serious threat to wine grape production and through my research I hope to improve understanding of how it affects grapevine health, physiology, and fruit and wine quality, and contribute to the development of sustainable management practices for use by North American wine grape producers.



Andréanne Hébert-Hach, PhD Candidate

Brock University, Ontario

Carroll County, MD/G. Hamilton Mowbray Memorial Chapter Scholarship in Memory of Peter Haslauer



I study the impact of clone and rootstock selection on the cold hardiness of *Vitis vinifera* grape cultivars. I have been focusing on two white cultivars, Riesling and Sauvignon blanc, because of their very different tolerance to cold and because of their popularity in the Niagara Peninsula. I also investigate the role of the dehydrin protein family in the dormant grapevine buds with the goal of evaluating its potential contribution to the superior cold hardiness of the better-performing clones and cultivars. Identifying clones with superior cold hardiness would lead to reduced cold damage in vineyards following the winter, which in turns would result in a reduction of financial loss for grape growers.

Moreover, identifying a protein that is a marker of enhanced cold hardiness could lead to the development of new tools to streamline the grapevine selection process when new clones or cultivars are introduced to the North American market. Taken together, I believe that my research projects and objectives will contribute to improving the sustainability of the North American grape and wine industry.

In conclusion, I would like to thank the American Wine Society Educational Foundation and particularly the Carroll County, Maryland/G. Hamilton Mowbray Memorial Chapter in Memory of Peter Haslauer for their generous scholarship.

Sarah Lyons, Masters Candidate

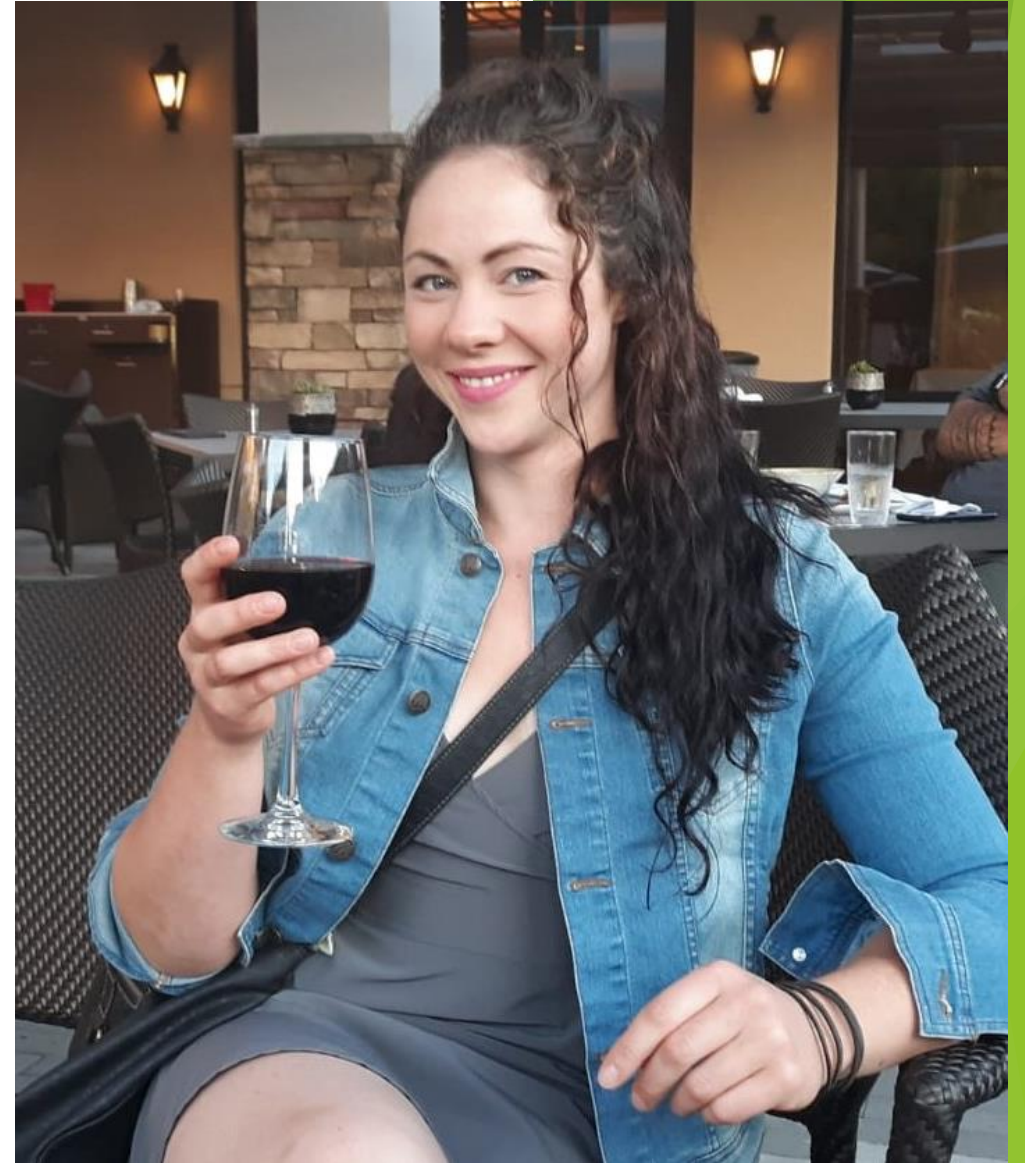
University of British Columbia

South Carolina – Tuller Scholarship in Memory of Norm Tuller

My research aims to better characterize the biodiversity of naturally occurring yeasts in vineyards, how these communities respond to environmental perturbations, and how these yeasts could be used in fermentations to produce more regionally specific wines. Altering the microbial ecology of a vineyard has the potential to impact the quality and *terroir* of the wine.

My first research project aims to characterize fungal diversity in three Okanagan vineyards and how the fungal populations change after exposure to forest fire smoke and agricultural sprays.

Additionally, our research lab has isolated indigenous *Saccharomyces* yeast strains from spontaneous fermentations conducted at wineries in the Okanagan Valley (British Columbia, Canada). I am conducting research to determine the enological potential for these strains to produce quality wines unique to this internationally-emerging wine-producing region.





Laise Sousa Moreira, PhD Candidate

University of Minnesota

Dayton/Springfield, OH AWS Chapter Scholarship in Memory
of Denise Hall, David Pritchard, and Catherine Roalef

My research focuses on the genetic control of flavor and aroma compounds in a cold-hardy hybrid grape population. The mapping population I am using for my study appears to have neutral, concord, and hybrid flavor profiles. To confirm this assumption, I am using a three-pronged approach — sensory, metabolomic, and genomic — to characterize grape flavor and aroma in cold-hardy hybrid grapes.

Through my research, I am looking forward to adding value to the North American grape industry by helping to improve the flavor and aroma of cold-hardy hybrid grapes.

Guynh (Kim) Phan, PhD Candidate

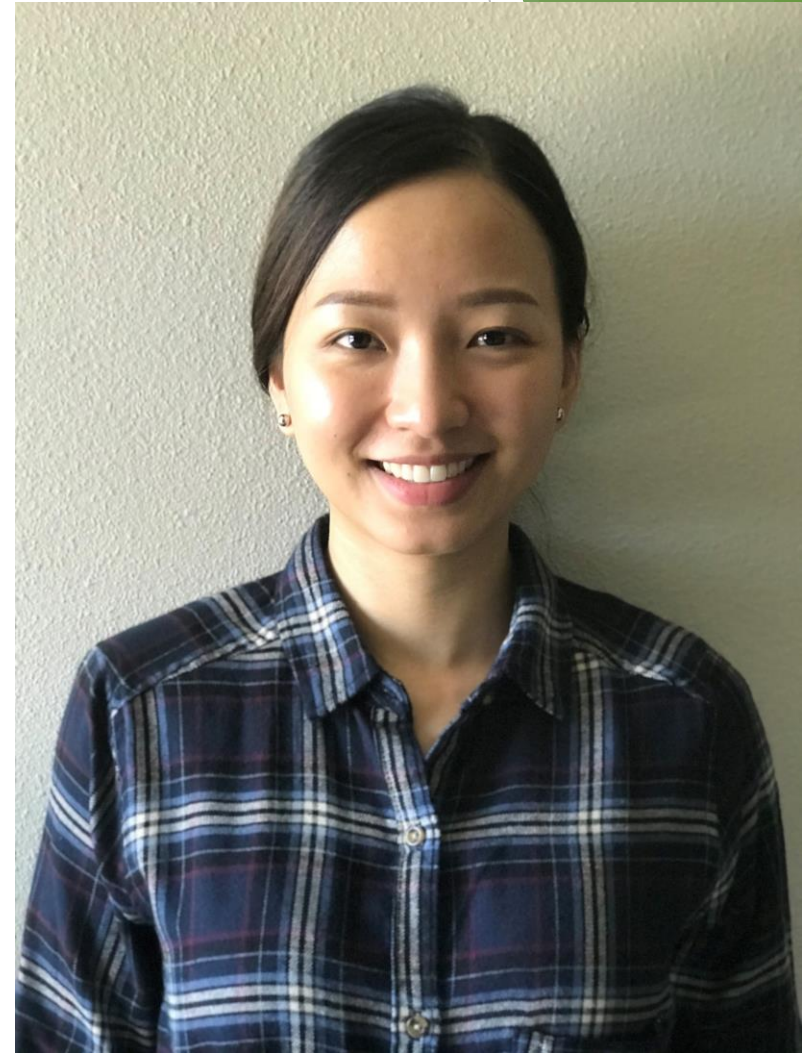
Oregon State University

North Alabama AWS Chapter Scholarship in Memory of Judith Anne Starkloff

My research aims to tackle the difficulties that surround wine mouthfeel. Much of this work has focused solely on understanding astringency. However, there is little work done on the chemistry and sensory impacts of wine lipids. Research has found that lipids interacting with phenolics may result in noticeable impacts on wine mouthfeel. In addition, lipids are important contributors to the mouthfeel of many food products, thus, lipids may directly or indirectly impact wine mouthfeel perception.

Currently, we are looking at the lipid profile of Pinot noir wines produced in different regions. By using statistical tools such as multivariate analysis and machine learning, we were able to identify the key lipid compounds and look at the differences in lipidomic profiles of Pinot noir wines produced from various geographical locations.

Future work will encompass sensory studies to examine whether the differences in lipid composition can have a critical impact on wine mouthfeel perception. The distinctive lipid profiles may contribute to the identification of wine style, wine quality and the uniqueness of wines from specific regions. The ultimate goal is to support wineries in Northern America in winemaking decisions and improving wine quality.

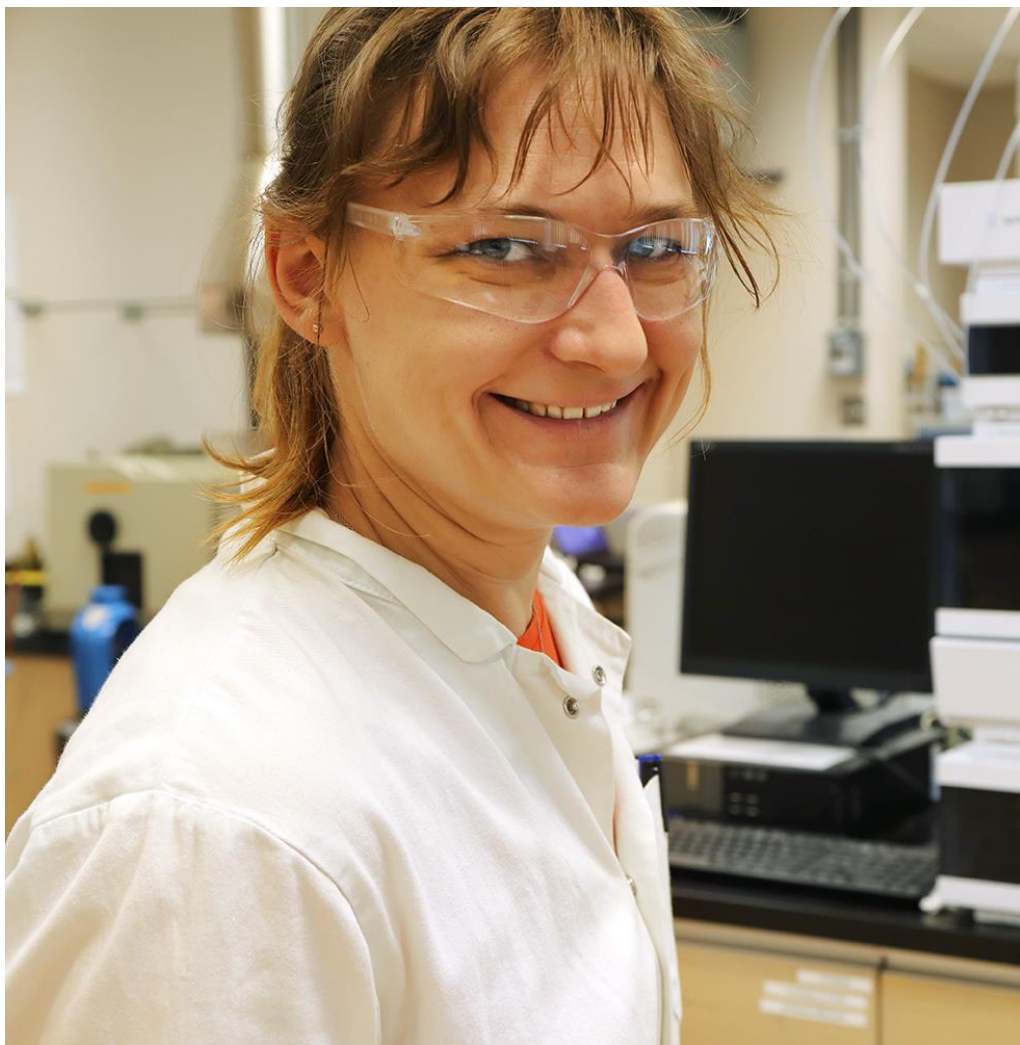




Clarissa Reyes, Masters Candidate University of California-Davis Tucson, Arizona AWS Chapter Scholarship

Water scarcity threatens agricultural production in arid growing regions of the U.S. and changing climatic conditions are expected to exacerbate this situation. To optimize production under these conditions, growers require crops that better tolerate drought stress. In grapevines, fine roots function as the primary absorptive surface to deliver adequate water from soil to the transpiring canopy, and thus directly respond to drought conditions.

In my research, native *Vitis* genotypes were selected for their parentage in commonly used rootstocks and origin across a precipitation gradient in North America. I am characterizing root response in well-watered and drought conditions to identify anatomical and physiological traits associated with grapevine water transport under drought stress.



Ieva Zigg, Masters Candidate

University of British Columbia

Alexis Descaunets Hartund Scholarship

funded by the Pittsburgh Region AWS Chapters

Increasing frequency of forest fires is a major issue for winemakers, since the chemicals in wildfire smoke impart unpleasant odor and taste on the wine. This problem is especially pressing in the Okanagan valley, one of the largest wine producing regions in Canada, which is surrounded by pine forests. My project focuses on development of analytical chemistry methods for investigating how these environmental volatile compounds, especially terpenes, are metabolized in the grapes and during fermentation.

My work will help to not only identify and quantify these chemicals while still in the unfermented berries, but also to devise preventative measures to reduce the damage from smoke exposure. Moreover, the methods I am developing will also be suitable for investigating and enhancing positive environmental effects, such as essential oils from trees and flowers being metabolized in the grapes with pleasing impact, allowing controlled refinement of aroma for production of unique and balanced wines.

...and *thank you* to all our donors who made these
2020 scholarships possible:

Banfi Corporation
Carroll County, MD/G. Hamilton Mowbray Memorial Chapters
Dayton/Springfield, OH Chapters
North Alabama Chapter
Pittsburgh Region Chapters
South Carolina Chapter
Tucson, Arizona Chapter

Members who participate in the Annual Silent Auction
and all the contributors to the AWSEF Endowment Fund