

**Remarks before the ARS Grape Workshop:
Viticulture and Enology Research Support
by the OWB Portland
November 28-29, 2017**

The Oregon Wine Board functions as the Oregon wine industry's commodity board, and the OWB is created by Oregon State statute. It is charged with supporting work in scientific research, marketing, and education to advance the activities of the Oregon wine industry.

OWB Legal Mandate

§576.756

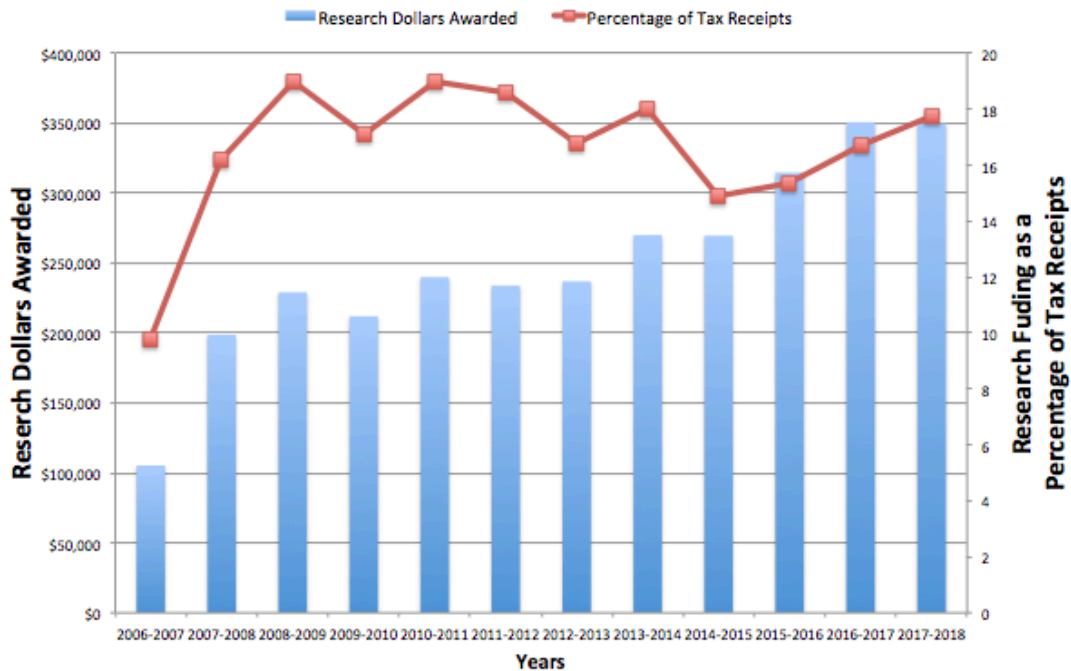
The Oregon Wine Board shall operate for the purpose of supporting enological, viticultural, and economic research to develop sustainable business practices for wine grape growing and wine making within Oregon and supporting the promotion of Oregon's wine grape growing and wine making industries.

Since Oregon's wine industry contributes nearly \$4B to the State's economy, wine grape production ranks among the top six ag crops in Oregon, and wine grape production is growing faster than any ag sector but hazelnuts, the wine board's research program is highly impactful.

To help itself, the wine industry has asked the State to collect a tax on tonnage and gallonage for the wine board's use to fulfill this charge. The tax is \$25 per ton of wine grapes harvested and 2¢ per gallon of wine sold in Oregon. The good thing is that this tax produces approximately \$2M per year; the bad thing is that it fluctuates annually with the vintage.

From its tax revenues, the OWB allocates portions of this income to its research, marketing, and education functions.

Research Funding From OWB Revenues



The amount currently allocated to research is approximately \$350,000, and the research allocation has averaged between 16 and 19% of the OWB budget over the past dozen years. This allows the OWB to fund approximately 8 projects per year, but because of that vintage fluctuation that I mentioned a moment ago, it is very difficult to make a firm commitment for multi-year funding of projects. We are always on the look out for more funds to support research, and indeed there is pressure from the industry to increase this allocation, as of course there also is to increase funding for marketing activities! I hasten to add that the OWB has agreed to commit an additional \$150,000 to support a project on irrigation management. The AFRI program of NIFA has committed a match

of \$150K, and the process for seeking applications is underway at this time.

To establish its funding priorities, the OWB issues and updates an RFA each year for projects relevant to viticulture and enology in Oregon, and it uses both the Unified Grant Management system created and maintained at UC Davis and a permanent standing research committee of industry members to manage the OWB grant review process. We receive applications for and allocate support to projects from around the country. We are fortunate to have an ARS installation in Corvallis and scientists from that laboratory also obtain OWB grants through OSU.

The thing I would like most to do is to tell you about some of our research projects, but time is short, so I will mostly enumerate a few of them.

OWB Research Grant Portfolio

Fiscal Year 2017-2018

| Investigator | Project | Institution |
|------------------|---|-------------------------|
| Laurent Deluc | Auxin-Response Factor 4 and timing of ripening in <i>Vitis vinifera</i> | Oregon State University |
| Alexander Levin | Water Status Targets for Irrigation in Warm Climate Pinot noir | Oregon State University |
| Walter Mahaffee | Powdery Mildew Management | ARS |
| James Osborne | Cold Soak Conditions, Microbial Populations, and Wine Aromas | Oregon State University |
| Ron Runnebaum | Powdery Mildew Resistance a Heritage Pinot noir Clone | UC Davis |
| Paul Schreiner | N Supplementation in Vineyard Versus Winery | ARS |
| Patricia Skinkis | Statewide Crop Load Trial: Yield-Quality Relationship in Pinot | Oregon State University |

Fiscal Year 2016-2017

| Investigator | Project | Institution |
|------------------|---|-------------------------|
| Laurent Deluc | Auxin-Response Factor 4 and timing of ripening in <i>Vitis vinifera</i> | Oregon State University |
| Michael Lentz | Analysis of Brettanomyces PAD Enzyme | U. North Florida |
| Walter Mahaffee | Powdery Mildew Management | ARS |
| James Osborne | Cold Soak Conditions, Microbial Populations, and Wine Aromas | Oregon State University |
| Michael Qian | Stress Vine Off- Aromas | Oregon State University |
| Paul Schreiner | N Supplementation in Vineyard Versus Winery | ARS |
| Patricia Skinkis | Statewide Crop Load Trial: Yield-Quality Relationship in Pinot | Oregon State University |
| Vaughn Walton | Red Blotch Virus/Vector Complex in Oregon Vineyards | Oregon State University |

A project that the OWB has supported for the past six years is called the “Statewide Crop Load Trial.” Oregon represents 2.7% of the harvested acres in the US, but it accounts for only 1% the harvested fruit. Clearly this indicates that Oregon crops its vines much more lightly than other parts of the country. We have underway at this time under the guidance of Dr. Patricia Skinkis at OSU a collaborative academic/industry-based trial of the impacts of various levels of vine cropping on the quality of the fruit and wine produced. We expect that this project will teach us whether we can crop our vines more heavily and thus gain more efficiency in our production while maintaining quality.

Another project directed by Dr. Walt Mahaffee at ARS is aimed at understanding powdery mildew. About 50% of my farming costs are aimed at controlling canopy pests, principally PM, and risk evaluation, spore detection, and fungicide resistance are critical concerns. Dr. Mahaffee has developed molecular tools to enable very sensitive detection of PM spores in the vineyard, and he is now working on understanding the mechanisms and occurrence of resistance to FRAC 3 and FRAC 11 fungicides, two of our most important classes. His work has already offered a powerful ROI on the OWB’s multi-year investment in his work.

From time to time, certain pests appear that pose a very real existential threat to the wine industry. At the moment, the grapevine red blotch-associated virus has hit Oregon vineyards as it has other regions across the country, and you all know that there is neither cure nor sufficient information about vectors, and there is little conclusive information about cultural practices that can ameliorate the damage to fruit quality that the virus causes. Through a powerful collaboration between Dr. Robert Martin at the Corvallis ARS and Dr. Vaughn Walton at OSU, we are learning about the viral vectors and the spread of the virus. This project had OWB support last year and this year it garnered multi-

year support through the AVF. Red blotch is one of our highest research priorities for the coming year.

Finally for today, to make clear that not all of our research is viticultural, I want to mention an enology project of particular import to the Oregon environment. While it is well known that certain taints can appear in wine from vine compromise induced by drought, heat, nitrogen deficit, among many other factors, the chemical origins of this aromatic taint and what can be done about it are poorly understood. Dr. Michael Qian at OSU is using GC-olfactometry to pinpoint and identify the compounds in the complex aroma of “off-flavored” wines. Understanding the chemical nature of these volatile off-aromas is the first step in understanding how to prevent them in the vineyard or correct them in the winery.

A complete list of OWB-funded project descriptions can be found at oregonwine.org under the research section.