



Portland Winemakers Club

July 2025

2025 Monthly Agendas

January 15th

Tips and tricks, Garage sale

January 24th

Gala – Aloha Grange Hall,
5 – 9 pm, \$15 per person

February 19th

Speaker: James Osborne, OSU
Enology Professor

March 19th

Tasting & judging, member
produced “Other Reds” #1
(excluding Bordeaux, Pinot Noir,
Italian reds)

April 16th

Barrel tasting; member
produced, any variety

May 21st

Tasting & judging, member
produced Bordeaux Reds

June 18th

Tasting & judging, members
produced all Whites, Rose’ &
Sparkling

July - No meeting

July 19th, Annual Picnic, \$10 ea.
Fee, 1:00 – 5:00

August 20th

Tasting & judging, member
produced “Other Reds” #2
(Italian reds)

September 17th

Focus on wine faults

October 15th

Tasting & judging, member
produced Pinot Noir

November 19th

Crush Talk

December 10th

Elections, Planning for 2026

Wine-related tours may be
scheduled on non-meeting days.



“Bob’s Blurb”

From the Editor:

Here is a bit of news from Courting Hill Vineyards located in Banks Oregon where some of our club members have purchased grapes in the past. I inquired to them to purchase grapes this Fall and the following is a quote from manager Adam Tuck.

“We’ve had some big changes on the vineyard—and have not been sure of whether we would be able to accommodate grape orders for the next few years.

All to say—we’ve got some mixed news at Courting Hill. You may have noticed that our older vines have been struggling the last few years, and fruit has been less plentiful. It had gotten to the point where some of the old blocks were no longer sustainable to continue to farm. Some recent mismanagement has accelerated wide-spread trunk disease in our older vines, and it became clear that we needed to take significant action.

We’ve had to remove about 20 acres of the older vines—that is basically everything except the small blocks up by the house, and the younger blocks at the bottom of the hill. While we were entertaining a phased approach, it became clear that financially, pulling everything out in one fell swoop was the only way forward.

Our plan is to replant these areas more efficiently with new vines, but we will not have enough production to support the full U-Pick in the immediate future. We’re likely looking at a 3 year break, at the earliest. This is a downer, but we’re investing in what we hope will be a much more sustainable future.

Jenna and I wanted to potentially put something together for those who were interested—we were hoping to have a party around harvest time in Mid-September to share wine, stories, and spend some time together, despite the lack o’ grapes. No pressure of course—a proper harvest is obviously the reason for the reason.”



Upcoming Events / Save the Date

PWC will **not** have a regular meeting in July. The next PWC meeting is scheduled for Wednesday, August 20th in the basement of the Aloha Grange starting at 7:00 pm. We will (speaker? Put a wine in the lineup by bringing 2 bottles for tasting. Also, bring 2 wine glasses for tasting.

- Take time to visit the PWC website: portlandwinemakersclub.com where there are Newsletters archived back to 2007.
- Also, visit our public group Facebook page: “Portland Winemakers Club” [facebook.com](https://www.facebook.com/portlandwinemakersclub), give it a look, Join the group and enter some posts of your own.

June Meeting Notes

The focus of the club meeting was discussing the upcoming picnic and then tasting Sparkling, Rose and White member-produced wines.

Club Picnic:

Saturday July 19 from 1 to 5

Hosts are Brian and Jolie Bowles in West Linn

Members are to bring Wine to share, Wine glasses, Protein if signed up OR, Appetizer, side dish, salad or dessert, Chairs

Members can bring a guest to the picnic. Cost is \$10 per person

More details will be shared via club emails.

Grape Buy:

First round of orders are now placed and confirmed.

Vineyards continue to reach out with grape availability if members need more grapes.

Tours:

Looking into a tour at Ruby vineyards plus a potential visit to a nearby vineyard where you can manage a row of fruit on your own and then buy the fruit you raised.

Speakers:

September meeting will focus on wine faults. More details will be forthcoming but plan on bringing six glasses for tasting various faults.



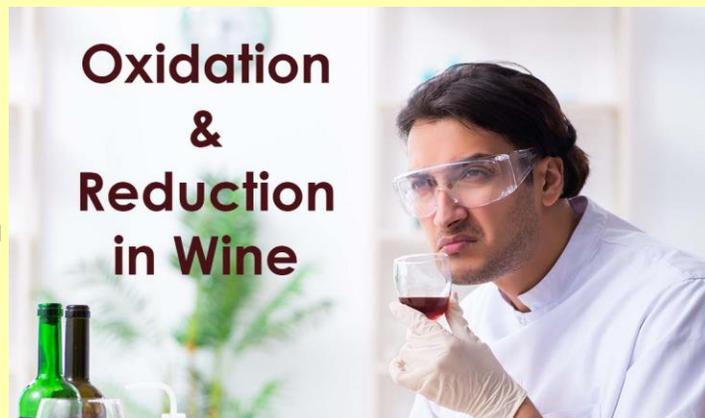
At the club meeting in June we had a blind tasting & judging of all whites, Rose’s and sparkling member produced wines. Congratulations to Rob Marr and Ken & Barb Stinger for winning gold.

		June meeting competition for Sparkling, Rose, White						
	Winemaker	Year & Wine Type	Gold	Silver	Bronze	None	Medal Score	Medal
A1	Bob Hatt	2024 Grenache Rose	3	15	7		1.84	Silver
A2	Paul Boyechko	2024 Grenache Rose	1	12	10		1.61	Silver
B1	Eric Mireiter	2024 Pinot Noir Rose	4	20	1		2.12	Silver
B2	Hank Armstrong	2023 Rose Blend	2	5	16	2	1.28	Bronze
C1	Rob Marr	2023 Cab Franc	4	13	8		1.84	Silver
C2	Mike Sicard	2024 Gamay Rose	0	2	23		1.08	Bronze
D1	Rob Marr	2024 Sauv Blanc	12	11	1		2.46	Gold
D2	Bob Thoenen	2024 Riesling	4	10	12		1.69	Silver
E1	Lynn Hilbert	2023 Gewurztraminer	0	0	15	10	0.60	Bronze
E2	Bill & Marilyn Brown	2023 Chardonnay	5	4	12	4	1.40	Bronze
F1	Ken & Barb Stinger	2022 Sparkling (Pinot Noir)	14	10	1	0	2.52	Gold

The Evil Twins of Chemistry

by Bob Peak

Two of the most common types of wine flaws faced by winemakers are oxidation and reduction issues. The chemistry of these two types of flaws are related, as you will see. Understanding the chemistry will help you avoid, and treat these issues.



When we talk about problems in wine, we often run across chemical reactions called “oxidation” or “reduction.” Since we usually talk about just one of those reactions at a time, it ends up sounding like that one stands alone. In reality, though, oxidation and reduction are more properly called “half reactions” and they work together to create a complete reaction. When I used to work in environmental labs, we often noted that to get one thing clean, you need to get something else dirty. In a parallel example, to get one thing oxidized, you need to get another thing reduced. That field of chemistry is named with the abbreviation **redox**.

Keeping it as clear as I can, I will need to go through some redox basic chemistry before discussing the direct effects on wine. Oxidation and reduction are all about the exchange of electrons. Those negatively-charged particles that schoolroom charts depict as whizzing around atomic nuclei are naturally in balance with the positively-charged protons in the nucleus when an atom is in its most fundamental elemental state. We call that the zero oxidation state. Other configurations of electrons are possible for each element, but only in certain favored patterns. **When an atom loses electrons, we call that oxidation and when one gains electrons it is reduction.** Since it is challenging to remember which is which, my old chemistry professors gave us a mnemonic device based on a lion to help us remember:

LEO-GER

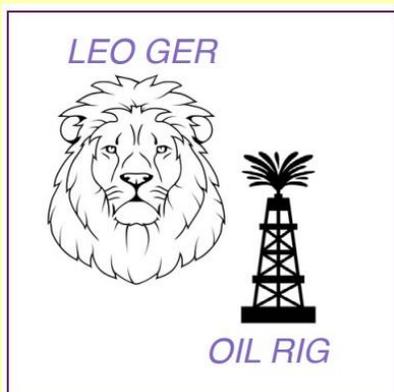
(see below, the lion is growling...)

LEO is “loss of electrons is oxidation” and GER is “gain of electrons is reduction.”

Younger colleagues have told me, at least at UC, they instead present the mnemonic:

OIL RIG

Oxidation is loss, reduction is gain. So, if either of those works for you, keep it in mind when we get to actual wine reactions!



Mnemonic devices to help in remembering oxidation/reduction reactions

Oxygen is the principal oxidizer in wine and indeed gives the reaction its name.

For our hobbies, oxygen comes as a component of atmospheric air. The air is about 21% oxygen, 78% nitrogen, and one percent all other gases. When air is introduced into winemaking, oxidation will result. It is important to note, however, that it is not always bad! (More on that below). As with other elemental forms, when oxygen is in the air as O_2 , it is in the zero oxidation state. When it oxidizes another atom or compound, it experiences the gain of electrons described above as it is reduced. Electrons are negatively charged, so it goes from being at the zero state (O^0) to either the minus one or minus two state from one or two extra electrons (O^{-1} or O^{-2}). The minus two form of oxygen is strongly favored and is the most common result when oxygen is reduced in the process of oxidizing something else.

Researchers find that about 60 ppm of oxygen addition, over the life of the wine, leads to the best overall profile and stability. Each racking will introduce 5 to 7 ppm.

In wine, alcohol is not directly oxidizable by air; after all, vodka is very shelf stable! However, many of the complex compounds in wine are phenolics that do react with oxygen. Having done so, there can be a daisy chain of reactions that may result in the oxidation of alcohol itself. The most common are undesirable byproducts of the phenolic reactions. Some of these are mediated by enzymes and some others, called nonenzymatic oxidation, are not. Oxidation of alcohol is one of the latter and results in the development of acetaldehyde, a compound that gives a nutty or bruised apple aroma to the wine. Other non-enzymatic effects include loss of aroma and brown color development from oxidation of red pigments. All these reactions are faster at high pH than at low pH.

Among the enzymatic reactions, the enzyme tyrosinase is present in sound fruit. While it can facilitate oxidation, it is inhibited by sulfite. One of many good reasons to sulfite your must! The other major oxidation enzyme is laccase. It is not present in sound fruit but occurs in moldy grapes. Sort those grapes before crushing and remove moldy fruit, because laccase is not sulfite sensitive and oxidation will continue after crush. Both enzyme pathways lead to the suppression of aroma compounds and the development of brown colors. At crush, sulfite the must with about 50 ppm (mg/L) of sulfite. If you cold soak, you may want to do another sulfite addition halfway through your soaking period. Since the reactions are faster at high pH, plan a tartaric acid addition if pH is high or titratable acidity (TA) is low. Inoculate with yeast as soon as sulfite dissipates or promptly at the end of the cold soak to get fermentation started quickly. Specialized yeast nutrients like Optimum Red® can help stabilize color against browning.

Now that you are off to a great start on your fermentation, it is time for me to reverse my advice on aeration! That's right, yeast needs oxygen to grow vigorously and produce healthy cell membranes that will withstand rising alcohol levels. Early air exposure can also help maintain color stability. So, for the first few days of a red wine fermentation, aerate the must. You can do this by using a small fan to blow off the layer of carbon dioxide gas in your fermentor just before a punch down, and splash the must vigorously as you punch to mix in some air. Once fermentation slows down and the cap begins to fall, reverse course on air again. Use more gentle punch downs and do not vigorously aerate.

The next stage is pressing and we are back to minimizing oxygen exposure. Work quickly and minimize splashing as you press and transfer the new wine. Avoid hard pressing to minimize extraction of highly reactive phenolic compounds that facilitate later oxidation. Get the wine into a closed container fitted with an airlock. If you have not already inoculated for malolactic fermentation, do so right away. When the last stages of primary fermentation are finished along with ML, if desired, get the wine into topped-up containers with fermentation locks and begin your sulfite program. In bulk aging, a very small amount of oxygen can help stabilize color and round out the tannic profile. Barrel aging is ideal for the small additional transfer needed and the barrel allows the oxygen in via a very slow transfer through and between the staves and whenever the barrel bung is pulled out.

Headspace in any container will greatly increase the oxygen transfer and is a virtual guarantee of oxidation and browning. Top up all carboys, tanks, and barrels! Commercial winemakers will sometimes age in stainless steel tanks with deliberate “microoxygenation” to simulate barrel aging, but there are no reliable home systems for that.

When you bottle, some additional air exposure is inevitable. Make sure your sulfite level is properly adjusted, work quickly, and consider purging with an **inert gas** to minimize oxygen transfer. Even with careful protection, most wines will go into “bottle shock” where rapid oxidation reactions occur, aromas are suppressed, and flavors are subdued. Mark your calendar three to six weeks after bottling before drinking to allow the condition to resolve.

Except for the occasional benefits described above, avoid aerating your wine! While some improvement comes about from the right exposure to air, problems of browning and oxidation are much more likely. Top up all containers, rack with a pump or siphon instead of pouring, and keep your sulfite at recommended levels right up to bottling. While sometimes your friend, oxygen is more often the enemy of fine wine.

So, what's wrong with its counterpart, reduction?

For that situation, the most common bad actor is sulfur. While oxygen, as noted earlier, spontaneously adopts 0, -1, or -2 oxidation states, sulfur is much more versatile. Sulfur can be found in -2, -1, 0, +1, +2, +3, +4, +5, or +6 oxidation states. Because you already know LEO GER or OIL RIG, you recognize that the zero oxidation state is sulfur in its elemental form---that familiar yellow powder---and that +1 through +6, having lost negative electrons to develop positive states, are oxidized forms. The positive charges have come about when sulfur loses electrons for those forms and they are not the ones that concern us for “reduction.” Some of them do come up in winemaking, primarily the +4 state in the sulfur dioxide we keep telling you about, but that's another story.

As for reduced sulfur, that is the -1 and -2 oxidation states, the -2 version is much more common. In the simplest wine-related compound, it appears as hydrogen sulfide or H_2S . Since hydrogen, H, is usually 0 or +1, in this case at +1 it combines with sulfur at -2 to form the stable molecule hydrogen sulfide. Hydrogen sulfide is one member of a much larger group of compounds that all include a reduced sulfur atom or two. Collectively, they are all volatile and they all stink; they are called the VRS or volatile reduced sulfur compounds. Hydrogen sulfide is often described as smelling like rotten

eggs. Other members of the family may smell like onions, garlic, canned corn, or asparagus. So, if you get stinky wine, and it is not the nutty/bruised apple odor of oxidation, suspect VRS.

Where did the VRS come from? There are four common pathways researchers have identified.

1.Enzymatic reduction of inorganic oxidized sulfur. Since we have been making you add sulfite to your wine, and sulfate is naturally present in grape juice, there are oxidized forms of sulfur available. The reduction of those compounds by certain bacteria, called sulfate-reducing bacteria, reasonably enough, will result in hydrogen sulfide and a stink. Anyone out there with a water well may have run across this stink; it is common in groundwater wells.

2.The tendency of some yeast strains to produce large amounts of VRS. The yeast producer will usually warn you of this. In most circumstances, the best bet is to simply avoid using those yeast strains. You can almost always find a different strain with equal or better fermentation characteristics but without the VRS tendencies. Indeed, decades ago, we stopped selling the famous old yeast strain Montrachet for exactly that reason: too stinky.

3.The residue of sulfur dust from the vineyard or sulfur in the barrel from a burnt sulfur stick or disk. Leftover elemental sulfur in contact with your wine causes a couple of VRS problems. The first is that it provides a readily available supply of 0-state sulfur that can easily be reduced to -2 and VRS. The second is that it inhibits microorganisms — that’s how vineyard sulfur fights mildew! If it is stressing your yeast, VRS is a common byproduct. The best action is prevention. One common recommendation, which I follow in my hobby vineyard, is to stop sulfuring at veraison—the “coloring up” stage of the grapes. That should leave about 5 weeks for sulfur to dissipate before harvest. If you still need to fight mildew, products like Kaligreen, Stylet oil, or Elevate do not contain sulfur. To avoid sulfur in the barrel, inspect closely before use to make sure none has dripped while burning. If it has, wash it with a jet of water and rinse.

4.Degrading of certain amino acids by yeast releasing sulfur. By preference, yeasts use ammonia nitrogen and certain so-called “primary” amino acids as nitrogen sources to build their own amino acids and proteins. However, if those are in short supply, the yeast will switch to another metabolic pathway that breaks down certain amino acids that contain sulfur, like cysteine and methionine. If that happens, hydrogen sulfide is released into the wine. This seems to be by far the most common source of the sulfur stink that I encounter in homemade wines. The best treatment, again, is prevention. Use a complete nutrient like Fermaid K, supplemented if necessary with diammonium phosphate (DAP), following the yeast nutrient instructions. Adequate nutrient addition should prevent the problem.

If despite your best efforts your wine does exhibit a VRS stink, it can be treated.

The most direct treatment is to add copper sulfate solution. Copper bonds with sulfide and drops out, where you can rack off of it after a couple of days. Commercial wineries are allowed to add up to 6 ppm of copper as treatment, but the maximum allowed residue is 0.5 ppm. If you use 1% copper sulfate solution, you can add up to 0.75 mL per gallon and not exceed the maximum residual level. If it improves the situation but does not completely correct it, you can probably safely add another 0.75 mL per gallon. If it takes more than that, you will want to determine your copper level with a wine

lab test. If it comes back above 0.5 ppm copper, you can treat it with Reskue. The VRS “reduced” stink is generally far more offensive than the nutty, bruised apple stink of oxidation. However, VRS can usually be completely removed with little or no negative effect on the wine. Oxidation damage is permanent. Top up every container, keep your sulfite levels up, and avoid excess aeration to make fresh, clean-tasting wine that is safe from the evil twins!



Protecting Your Wine From Oxygen During Racking

A question submitted to Winemaker Magazine

Is on the use of argon/CO₂ to make-up for headspace in a carboy or tank. How does one know when you have placed enough to displace the oxygen? is there a method to color the CO₂, for instance? I know some people cannot stand the smell of CO₂, but it is very seldom I get a whiff. Also, when I place my stainless steel sparger instrument into the carboy all the way to the bottom, hit the valve for two seconds, and then rack into the carboy with wine, what sort of time frame is the wine still protected in, one month, two perhaps?

Excluding oxygen by gassing headspaces and purging containers is one of the most important winemaking jobs we have. Oxygen exposure during aging can create all sorts of problems from premature oxidation and loss of aroma to spoilage microbe growth. The tough part is just what you mention — how do we know, with our own unique bottles, carboys, kegs, and barrels (not to mention the PSI and size of our gassing setup) that a barrel or carboy is “gassed” enough for the job? Sadly, there is no easy answer because as I’ve intimated there are so many unique factors involved. I can, however, provide a solid set of guidelines to help you make the best decisions for any situation you may encounter while racking.



A carbon dioxide system is by no means a requirement for hobby winemakers, but many find it to be useful in several instances

We “gas the headspace” using inert gases heavier than air, typically argon and carbon dioxide gas. Nitrogen is sometimes used in the commercial winemaking process to push hose lines, etc., but since nitrogen has about the same gas density as air (nitrogen has 1.25 g/L to air’s 1.29 g/L) it’s not terribly practical for blanketing headspace. Carbon dioxide is indeed heavier than air (1.98 g/L) while argon clocks in at 1.78 g/L, making them both great candidates for this kind of work. Carbon dioxide, especially

under cold conditions, however, will readily dissolve into wine so argon is the best gas to use as a wine approaches bottling (unless you want a little extra fizz).

Like I said, there's no way to fully exclude oxygen from headspace as there will always be a little mixing. Think of it as if you'd be pouring heavy cream into coffee or making one of those fancy layered cocktails with different colors. Your aim is to layer the heavier gas on top of the wine's surface with as little turbulence as possible, in order to avoid mixing the argon or carbon dioxide in with the lighter air above.

Here are some blanketing tips:

- Introduce gas very slowly. Start regulator at 0 psi and just crack open to a very low pressure setting.
- You want the gas to be exiting at a low rate so as not to cause a big mixture of your gas and the air in the headspace.
- Meter in the gas parallel to the wine surface, not directly down onto it. If you blow your gas directly down onto the surface of the wine, it'll just rebound up, creating a jet-wash effect. You can avoid this by fitting a "T" onto the end of your hose or pipe, so that the gas is blown (gently . . .) parallel to the surface of the wine, which will again help avoid that turbulence.
- Use the largest-sized hose possible.
- Many wineries use a "bell" type device that fits over the end of the hose or a type of cone fitting that allows the gas to exit in a controlled, non-turbulent manner rather than a small hissing stream, which would just get mixed in with the air.
- Use the "flame test" to test for the presence of a gas blanket: Using a long-stemmed lighter or BBQ match, lower the flame down into your carboy, keg, or barrel until it's snuffed out. That'll allow you to see where the oxygen starts to be excluded. It's imperfect but, absent an oxygen meter, is a pretty good way to approximate it.

If you're gassing a 750 mL bottle, then a two-second slow pulse is probably enough. The bigger the containers get, as you might imagine, the more gas you need to introduce to create an effective layer on the surface of the wine. Sadly, the blankets don't last that long. I gas headspaces at least twice a month in my winemaking.

There are always some safety concerns to take into account when using inert gases. Never use them in confined spaces. The very things that make it great for winemaking (odorless, tasteless, non-coloring) make it a potential hazard. Always have a high degree of ventilation in your work area and when in doubt, get out.

If you are going to "purge" a container (i.e., fill it up with gas before filling with wine) always make sure you've got a vent — you don't want to blow up a container in the name of preventing wine spoilage!

Also be aware that using gas for blanketing is never as effective as a completely full carboy, tank, or barrel; there will always be some level of mixing between inert gases and air because while yes, they're heavier, they're not going to create a 100% "seal." Keeping your vessels fully topped-up is really the only way to make sure the wine isn't getting unnecessarily oxidized or that air-loving spoilage microbes won't get in and gain a foothold.



Reference Library

(updated 3-25-2025)

Here is a list of hobby winemaking manuals and other materials in the Secretary's file. They are available for downloading by e-mail or via an internet transfer service. Some are downloadable from the source such as Scott Lab. All are in PDF format.

Scott Lab 2025-2026 Winemaking Handbook –26.8 MB – 144 pages

Scott Lab 2024 - 2025 Cider Making Handbook – 6.2 MB – 96 pages

Scott Lab 2018-2019 Sparkling Handbook – 8 MB – 58 pages

Scott Lab 2022 Craft Distilling Handbook – 5.2 MB – 26 pages

Anchor 2021 – 2022 Enology Harvest Guide 2.6 MB - 104 pages

A Guide to Fining Wine, WA State University - 314 KB - 10 pages

Barrel Care Procedures - The Beverage People - 100 KB - 2 pages

Barrel Care Techniques - Pambianchi – 42 KB – 3 pages

Enartis Handbook – 5.1 MB - 124 pages

A Review Of Méthode Champenoise Production - 570 KB – 69 pages

Sparkling Wine brief instructions - 20 KB - 3 pages

Sacramento Winemakers Winemaking Manual - 300 KB - 34 pages

The Home Winemakers Manual - Lum Eisenman - 14 MB – 178 pages

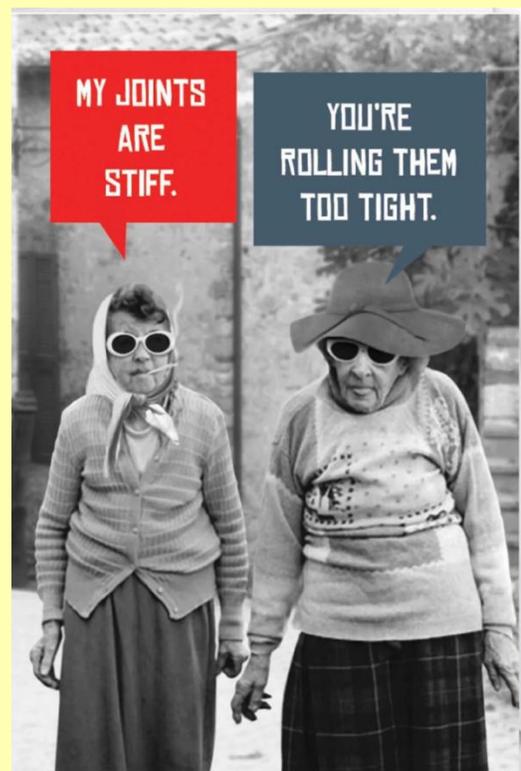
MoreWine Guide to Red Winemaking - 1 MB - 74 pages

MoreWine Guide to White Winemaking – 985 KB – 92 pages

MoreWine Yeast and grape pairing – 258 KB – 9 pages

Wine Flavors, Faults & Taints – 600 KB, 11 pages

Daniel Pambianchi wine calculator set – 13.5 MB, 10 calculators



Portland Winemakers Club

Leadership Team – 2025

President: **Bob Hatt**

bobhatt2000@yahoo.com

- Establish the leadership team
- Assure that objectives for the year are met
- Set up agenda and run the meetings

Treasurer: **Barb Thomson**

bt.grapevine@frontier.com

- Collect dues and fees, and update the membership list with the secretary
- Pay bills

Secretary: **Bob Thoenen**

pwc_secretary@outlook.com

- Communicate regularly about club activities and issues
- Keep an updated list of members' email, name tags, and other club information

Chair of Education / Speakers **Paul Natale**

paulnatale6@gmail.com

- Arrange for speakers & educational content for our meetings

Chair for Tastings: **Mike Sicard / Steve Fine**

msicard@willamettehvac.com

- Conduct club tastings
- Review and improve club tasting procedures.

steve.fine@comcast.net

Chair of Winery / Vineyard Tours: **Lynn Hilbert / Jeremiah Deines**

- Select wineries, vineyards, etc. to visit
- Arrange tours
- Cover logistics (food and money)

lynn@lynnhilbert.com

mycothused@live.com

Chair of Group Purchases: **Mark Hernandez / Hank Armstrong**

- Grape purchases and make the arrangements to purchase, collect, and distribute

mark_hernandez14@comcast.net

- Supplies – These should be passed to HANKARM@gmail.com the President or Secretary for distribution

- Encourage club participation in all amateur competitions available. Make information known through Newsletters, e-mail, and Facebook

Chairs for Social Events: **Mindy Bush / Marilyn Brown**

- Gala /Picnic/parties

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