This Lecture

- Tonight we will cover:
  - Class details & Syllabus
  - How get the most out of this class
  - How to approach winemaking as an academic subject
  - History of winemaking

Introduction to Enology

- Lecture:
  - Tuesday Night, 6:00 PM to 9:00 PM
  - Pat Henderson Instructor

- Lab: Shone Farm - Dutton Ag Pavilion
  - Chris Wills Instructor
  - Lab: Two sections:
    - Section #5994 Wednesday 3:00 to 6:00 PM
    - Section #6689 Wednesday 6:00 to 9:00 PM

Registration

- The class has many people on the waiting list who will not get in.
- If after tonight’s lecture you decide that you do not have the time to devote to class or that you think that you will eventually drop go ahead and do it now to let someone in.

It takes about 15 to 20 minutes to get from SRJC to the Shone farm, but there is Plenty of Free Parking!
Class Poll
- Winemaking students
- Industry professionals
  - Winemaking
  - Other
- Home winemakers
- Grape growers

Handouts and Power Points
- Handouts will be given out in class and downloadable Power Point slides will be available at the class website.
- Take notes based on Slide #
- Lecture slides have a lot of detailed information and most test questions come directly from the slides.
- Keep handouts and Power Points organized.

Class Website
- http://www.santarosa.edu/~jhenderson
- The lecture presentations will be available at the class website the night before class.
- The website will have class announcements as well as links to articles, supplementary materials, and useful wine websites

Getting the most from this class
- Read supplemental material
- ASK QUESTIONS!
- Etiquette
  - Arrive on time, allow time to find parking, if you come late do not disrupt class.
  - Turn cell phones off
  - Don’t talk during tastings
- Academic integrity

Textbook
- Don’t feel that purchasing any of the books listed in the syllabus is mandatory, but having a little background info before you get to class is useful.
- If you keep the lecture presentations and your notes well organized it can take the place of a textbook.

Philosophy of Winemaking
- The classic argument is it art or science? Many wine connoisseurs think of it as an art, wine researchers tend to think of it as a science.
- To me the answer is obvious, it’s both, it’s a craft
- What is the goal of winemaking? Like preparing fine food, it is to give people pleasure by making something that tastes good.
Philosophy of Winemaking

- The art is in finding out what tastes "good" by doing tasting trials, blends etc.
- And the science comes from determining the methods required to produce what tastes "good", what techniques do you use to get the desired results.

So What is a “good” wine?

- Opinions vary, what is good depends on your personal taste.
- Different opinions on what an ideal wine is lead to different methods on how to obtain it
- Variation from vintage to vintage also influence a wine’s qualities.
- This is why wine is such a challenging and interesting field of study.

So, how can you learn about wine if there is no "right" way to make it?

- Keep an open mind
- Learn from as many people as possible
  - (one advantage to having two instructors)
- Develop your own style

Keep in mind

- All thought there is no right way to make wine, some methods are more successful (at least commercially) than others.
- If you are making wines for sale, keep your customers in mind.
- The key is to know what you are doing and why the methods you have chosen will make the style of wine you desire.

Purpose of this class

- To learn how practices used in the vineyard and the wine cellar determine a wine’s flavor.
- With this knowledge you can wine in any style you wish.
- In other words, to learn what you need to know to be a winemaker.

History of California Winemaking

Wine 3
Introduction to Enology
This Lecture Covers
- Origins of winemaking in the Old World
- History of winemaking in California
  - Mission period
  - Development of an industry
  - Prohibition & aftermath
  - The rebirth of fine wine in California
- Business cycles in the wine industry

We will deal primarily with California history; here are some points to consider:
- California was a melting pot of many cultures: Spanish, Mexican, German, French, Hungarian, Italian, and Chinese.
- This continues to this day, French, Australian, Chilean, and Spanish companies have all invested in California.

Points to consider
- 50% of U.S. wineries are located in CA. and 90% of the nation's wine is produced in CA.
- Wine is an agricultural product, so economic cycles exhibit a boom and bust pattern.
- Wine is a food, alcohol is a drug. Influences from prohibitionist and neo-prohibitionists affect the market for wine.
- Influence of religion on wine consumption

Why Study Wine History?
- Our history says a lot about where we are as an industry now, and where we are likely to be heading in the future.
- Quality and value are the key to success; wineries that deliver both survive for the long haul.
- This is important at every price point.

New Wine History Book
- Inventing Wine: The History Of A Very Vintage Beverage
- By Paul Lukacs
- Link to podcast with author on class website

Basic Winemaking
- Basic winemaking is not very complicated. Grape juice will spontaneously ferment after the grapes are crushed, so a rudimentary wine (although not a good one) is easy to make.
Birth of winemaking

- First known historical winemaking took place in Persia (modern Iran) about 5,400 BC. This is just south of the Trans-Caucasus region where vinifera grapevines (wine grapes) are native to.
- Grapes were probably first cultivated to be consumed as fruit.

Winemaking in Egypt

- Around 3000 BC winemaking spreads to Egypt and the eastern Mediterranean region, production becomes more advanced.

Winemaking in Ancient Greece

- By 2000 BC, wine was an important part of daily life in ancient Greece.
- By 1000 BC, the Greeks and Phoenicians had spread wine and vineyards throughout the Mediterranean.

The Roman era

- Perhaps no culture has ever been as dedicated to wine as ancient Rome.
- They were keen observers of nature and their understanding of grape growing and winemaking was unparalleled in their time.

The Roman era

- They were responsible for many innovations:
  - Spread winemaking throughout their extensive empire in Europe
  - Even without knowledge of chemistry or biology, through trial and error, winemakers were able to develop techniques that worked for their particular situations.
The Roman era
- They were responsible for many innovations:
  - Spread winemaking throughout their extensive empire in Europe
  - Used barrels for wine
  - Grew vines on trellises
  - Used sulfur dioxide
  - Wrote extensively about wine
  - Common people could drink wine

The Middle Ages
- In the 1000 years between the fall of Rome in 476 and the beginning of the renaissance winemaking was consumed near where it was made.
- The Catholic Church was the most important institution involved in winemaking.

Bacchus, god of wine

The Renaissance
- At the end of the middle ages the renaissance ushered in scientific methods of thinking.
- Trade in wine increased and winemaking expanded to the New World.
- Winemaking began in the Americas in the 1500s

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Early American Winemaking
- North America was originally called Vinland
- Wine was made from Native American grapes in Florida as early as the 1500s
- Winemaking began in Virginia, the Carolinas, and New Mexico in the 1600s.
- European (vinifera) vines did not survive in the eastern U.S.

Winemaking expands
- Winemaking expanded westward with the settling of the continent.
- It was usually made from native grapes and fruit and consumed locally.
- The first commercial winery was in Kentucky in 1799.

Mission Period 1769 to 1833
- In California grape growing and winemaking was introduced by father Junipero Serra; he established the first mission in San Diego in 1769.
Mission Period 1769 to 1833
- The California Missions had three parts (The Mission Trinity):
  - The Presidio (Army barracks)
  - The Pueblo (Town)
  - The Mission (Church)

Mission Period 1769 to 1833
- Wine was essential to the fathers as both a beverage and for sacramental purposes.
- At first Father Serra relied on a supply from Mexico for his wine which was sometimes unreliable and when he had to purchase wine from the Presidio he complained the Army charged him the full price.

Mission Period 1769 to 1833
- Spain considered the missions an investment and it wanted returns, for this and the reasons above the fathers were very interested in making their own wines.
- Vines were sent to San Juan Capistrano and the first vintage was in 1782.

Mission Period 1769 to 1833
- The winemaking practices of the missions were very rudimentary. One account describes putting grapes on an animal skin laid on an earthen bank and Indians treading the grapes into a vessel made of skins for fermentation.

Mission Grape
- They also used the mission grape for everything, red, white, sweet, and dry.
- The mission grape is a European variety (Vitis vinifera) it is also called Pais, Creole, or Criolla Chica in Latin America

Mission Grape
- Suited to hot climates, heavy yielding, versatile and bland, widely planted until the 1890s.
- Originally propagated from seeds rather than by cuttings. It is a minor Spanish variety called Listán Prieto
Mission Period  1769 to 1833

- California had many native grapes growing along the rivers and creeks but these were not suited to wine making.
- The mission vineyards continued to grow and were well established by 1800.

Mission Period

- The 21st and last mission was San Francisco de Solano in Sonoma in 1823.
- Grapes were grown at all missions except Mission Dolores in San Francisco and Santa Cruz which were considered too cold.

1833 Secularization Shift to Commercial Viticulture

- The Mexican government deprived the Franciscans of their “Temporalities” (material property) and turned land over to military and civilians. Grapes had been grown in Pueblos and Ranchos.

Mariano Guadalupe Vallejo

- Commander of the Sonoma Pueblo, came after secularization, stayed though the bear flag revolt of 1846
- Replanted the Sonoma Mission was Sonoma's first commercial grower, His estate, Lachyma de Montis, won gold medals at state fair in 1858.

- Very enthusiastic he inspired others and encouraged many to settle in the North Coast.
- Such as George Yount & Charles Krug in the Napa Valley.

Los Angeles

- Los Angeles was the center of commercial production in the 1830s and led the state until the 1870s (it was nicknamed the city of vineyards). These three men helped to start the industry in CA.
- First commercial vineyard was planted by Joseph Chapman had 4000 vines.
Early Pioneers

- **Jean Louis Vignes** (Vig – French for vines) Called Don Luis, from Bordeaux experimented with European varieties, aged wine in barrels, made brandy, also the first to grow oranges.

- **William Wolfskill** Started out as a frontiersman, came to California on a trapping expedition with George Yount (namesake of Yountville). Planted his first vineyard in LA in 1836. His brother John would plant in Napa and Yolo County.

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Developing an Industry

- California had a perfect environment for making fine wines. What it lacked is a market for the product.

- **Gold Rush 1849**
  - This ushered in a new era and a new market for wine as well as fresh fruit and raisins. Also brought more experienced winemakers from Europe.

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Charles Kohler & John Frohling - 1853

- The transcontinental railroad in 1869 opened eastern markets to California wine.
- First really big CA. wine merchants and founders of an agricultural colony in Anaheim and opened first "Native" wine store in SF.

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Charles Kohler & John Frohling

- Built a large winery on Sonoma Mountain (now part of Jack London State Park) and had 350 acres planted to grapes. Opened an agency in New York and distributed wine nation wide.

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Agoston Haraszthy

- Major force in promoting winemaking in Northern California. Some history and a lot of Legend. A tireless promoter of California Wine.
- Much of Agoston’s reputation came from the tireless promotion of him by his sons.

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Agoston Haraszthy

- Versatile and energetic man from Hungary; First settled in Wisconsin, traveled to San Diego by wagon train in 1849
- In San Diego he founded a town (Middle Town) as head of the volunteer militia he led in the capture of three outlaws, Took them into custody as Sheriff, lodged them in the jail he had built, presided over their trial as judge.
Agoston Haraszthy

- Retired from civic duties and was elected to the first state legislator where he passed a law which enabled him to collect money for the jail he had built, (he was not paid because the building collapsed) quit after one term and never returned to San Diego.

Agoston Haraszthy

- Started to grow grapes in Santa Clara, became Assayer at US mint in San Francisco. High losses of gold led to accusations of embezzlement, charges of which he was later cleared.
- In 1857 bought vineyards in Sonoma and started Buena Vista Winery.

Agoston Haraszthy

- He was a strong believer that better wines could be made from better grapes grown in better locations with better cellar practices.
- Took a trip to Europe in 1861 to collect information and cuttings resulted in a winemaking pamphlet that got him the reputation as the father of California Viticulture.

Agoston Haraszthy

- Published *Grape Culture, Wines & Winemaking* in 1861. He had two sons, Arpad & Attila, who married two of Gen. Vallejo’s daughters and were also active in the industry.

Agoston Haraszthy

- Buena Vista grew to one million cases/year by 1873 before folding. Haraszthy left for Nicaragua in 1866 where he was said to be eaten by Crocodiles while attempting to cross a river.

1860s & 1870s

- Viticulture becomes a well-established commercial industry.
- Industry organizes a lobby to lower taxes and increase duties for imported wines.
1860s & 1870s
- Prosperity of 1860s and early 1870s led to over planting and economic depression led to huge bust in 1876 when two out of three wineries failed. Overall, the shakedown helped wine quality by getting rid of poorer varieties and practices.
- In Sonoma County, it cost more to pick grapes that they were worth after they were harvested.

1880s Phylloxera
- Industry rebounded hoping to take the place of the Phylloxera devastated vineyards of Europe. Phylloxera was first identified in CA. in 1873, and was ignored until it was a serious problem.

1880s Phylloxera
- George Husmann & Eugene Hilgard (Dean of Ag at UC Berkeley) Credited with stopping Phylloxera by grafting European varieties on resistant rootstocks.

1886 another bust from over planting, the shift from mission to traditional European varieties increases and continues for the next 20 years.

1890s Dominated by the California Wine Association (CWA). Formed as a coop to stabilize grape prices acquiring wineries to become the states largest producer, thrived until prohibition. CWA motto: “Never bottled a bad bottle of wine” (or a great one)
- In 1895 Sonoma Co. had 23,000 acres in production.
Survived '06 earthquake but lost 4 million cases! Some wine was used to help put out fires after the quake!

Twentieth Century
Prohibition, a giant step backwards

- Background: Gained momentum over the previous 100 years. First "dry law" passed in Indiana in 1816, whole states started going dry in 1880s.

Prohibition

- Wine Industry tried unsuccessfully to keep wine separate from distilled spirits.
- Wartime prohibition preventing the production of alcohol from foodstuffs became law in July 1919.
- Many supporters were "one issue" voters.
- One of only two constitutional amendments that limit citizens rights.

Strange Bedfellows

- Prohibition was backed by an odd coalition of groups
  - Progressives/socialists
  - Fundamentalist protestants
  - Women's suffrage movement
  - Anti immigration "nativists"
  - Klu Klux Klan
  - Anti German sentiment (brewers & World War I)
  - Tax reformers (income tax replacing alcohol tax)

Prohibition

- Volstead Act implementing the 18th amendment banning the manufacturing, selling or transporting alcoholic beverages went into affect Jan. 16 1920.

- Number of wineries in CA went from 700 to 100 (in Sonoma Co from >200 to <50); these survived by producing sacramental wines and medicated wine tonics (& bootlegging)
- From the start there was widespread antipathy to the law and it got little support from the federal government.
Prohibition

Prohibition Continued

- Loophole in the act allowed people to make up to 200 gallons of "non intoxicating fruit beverage or cider" per year in the home.
- Consequently lots of people made bathtub wine and individual consumption of wine went from 0.5 G/yr. to 0.8G/yr. Demand for "juice grapes" rose and the price went from $10/ton in 1918 to $100/ton in 1920.

Prohibition Continued

- This led in the replacement of fine wine varieties to shipping varieties (highly colored thick skinned) like Alicante Bouchet.
- People got used to mediocre (or worse) homemade wine.
- By 1930 Sonoma Co had 30,000 acres in grapes.

Homemade Wine & Prohibition

- Shipping grapes across country was hard to do so growers made concentrate which was easier to transport. Vine Glow was one product; it came in 8 different flavors, Muscatel, Claret, etc. You fermented it in your home and the service man would come to bottle it in 60 days.
Homemade Wine & Prohibition
- **Wine Bricks** were solidified pumice and concentrate came with the label “Warning do not soak this brick in 5 gallons of water for two weeks because it would become wine which would be illegal.”
- Government clamped down on both these products in 1931.

Repeal
- By the 1930s it was obvious that prohibition did not control consumption, led to the birth of organized crime and loss of tax revenues.
- The effort for repeal quickly gained momentum and final came on Dec. 5, 1933 but as part of repeal every state got to write its own laws (still a headache today).

Post Prohibition
- Problems faced the industry:
  - Dry laws
  - High state taxes & license fees, State monopoly stores.
  - The public tastes had changed
  - Wineries were in disrepair, and there were few trained winemakers.
  - Little investment capital due to the depression.

Consequences of Prohibition
- The role of alcohol in society changed during prohibition, some of the consequences were:
  - Alcohol consumption was more regulated
  - Call drinks became popular
  - Taverns became “co-ed”
  - Plea bargaining in the courts
  - NASCAR was born
  - Birth of large-scale organized crime (Mafia)

Post Prohibition
- The turn around began very gradually and was aided when the **Wine Institute** was formed in 1934 as a trade organization to fight for winery’s interests.
- Enology Department at UC Davis published reports on how to improve quality; improved quality improved sales.

1940s
- Post prohibition shake out was over by the start of World War II
- During the war European imports ceased and demand and prices for California wine went up.
- Many American G.I.s in Europe before and after the war were introduced to quality table wines for the first time.
1950s & 1960s ~ A dying industry?
- Dominated by Louis Petri and the Gallos. Jug and flavored wines (Thunderbird) become very popular consumption gradually increases.
- In 1966 231 wineries in CA. 18 in Sonoma, 15 in Napa, Sonoma Co has 12,000 Acres in Vines, less than half of what it had at the end of prohibition.

Wine Revolution
- Before 1970 few people took California wine seriously because most of it was mediocre.
- The number one wine in America in 1965 was? Cream Sherry
- Most California wine was consumed by “European immigrants and winos”
- There were some pioneers though that wanted to make wine like the ones they had had from Europe.

The New Pioneers
- James Zellarbach founded Hanzell winery in 1957. One of the first wineries in California to use:
  - Controlled malolactic fermentation
  - French oak barrels
  - Stainless steel tanks
  - Temperature controlled tanks
  - Nitrogen gas to prevent oxidation

The New Pioneers
- Jack & Jamie Davies ~ Shramsberg
- Robert Mondavi ~ Robert Mondavi Winery
- Warren Winiarski ~ Stag’s Leap
- Jim Barrett ~ Chateau Montelena
- Lee family ~ Kenwood Vineyards
- And many more, what the had in common is a passion to craft the best wine possible.

Wine Revolution
- Two watershed years:
  - 1968 sales of dry wine outsell sweet wine for the first time since prohibition.
  - 1976 whites outsell reds for the first time.
- In 1976 Sonoma Co had 24,000 Acres of Grapes (2 times amount 10 years before)
- Also In 1976 a Steven Spurrier, a Paris wine merchant, held the Paris Tasting, In a blind tasting in Paris Napa and Sonoma wineries beat France’s best.

Paris Tasting
- The Paris tasting elevated the place of California wines in the eyes of the world and sent shock waves through the industry.
Paris Tasting
- Recounted in the book *Judgment of Paris* by George Taber. (fictionalized in the movie *Bottle Shock*).

1980s
- Optimism led to over planting that led to bulk wine "lake" that dried up with the advent of coolers & fighting varietals in the early 80s.
- By the mid 80s the total volume of wine consumed was steady but premium end was still growing. Boutique super premium wineries flourish as jug wine sales decline. Minor shakeout as inefficient producers are weeded out.

1980s
- Phylloxera becomes a problem again by showing up in a new form, Biotype-B. This Biotype can grow on AxR-1, the most widely planted rootstock in CA. This causes many vineyards to be replanted at great expense.
- Because of better clones and vineyard selection, the new vineyards were greatly improved over the old ones.
- In 1989 there are 771 wineries in CA.

Early 1990s
- Overall sales of wine were still sluggish but premium wine continued to increase; people drinking less but drinking better.
- Costs from replanting due to Phylloxera and taxes rose but the prices didn’t so borderline wineries went bankrupt or sold.
- Neo prohibitions also worked to decrease consumption by linking wine with dangerous drugs instead of food.

Late 1990s
- By the mid 90s vineyards begin to become back into production from replanting and are producing more and better grapes.
- Sales were boosted from information that wine in moderation is good for your health, and the strong economy (wine still considered a luxury product) continued to fuel the wine industry and sales were strong through the late 1990s.

The New Millennium
- In 1999 there are 1200 wineries in CA,
- In 2002 Sonoma Co has 60,000 Acres of grapes. Increased vineyard acreage has come at the expense of other forms of agriculture.
- Foreign competition, particularly from new oversees wine regions, keep prices competitive.
2001 to 2008

- The boom of the 1990s with high grape prices has led to over planting and a surplus of grapes in 2001. Unpopular varieties and poor vineyards are being squeezed.
- As the economy slowed there were repercussions for the premium market and vineyards of unpopular varieties were pulled out.

The Great Recession

- Economic recession hit wineries hard.
- Sales of expensive wines plummeted while inexpensive wines sold well.
- Consumers looked for value instead of prestige.
- Profit margins still have not recovered.

Has the Tide Turned?

- Bulk wine tells the tale:

Has the Tide Turned?

- Bulk wine tells the tale:

California Acreage Trends

- The light harvests of 2010 & 2011 dried up bulk market and increased grape prices. This was compounded by the lack of new vineyards coming into production.
- Big harvests of 2012 & 2013 moderated this trend.

- Sales increased in mid decade before falling.
- Weak dollar made imported wine more expensive and exports from California cheaper.
- Few new vineyards were planned.
California Production

California Bearing acres

California Total Tons

California $/ Ton

The Future

- Globalization and industry consolidation also provide uncertainty.
- Consolidation of small and mid-sized wineries is likely to continue.
- Concerns:
  - Urban growth pressure on agricultural land
  - Introduced pests
  - Climate change
**The Future**

- 2013 vintage had good yields and good quality; Grape Price Report will be released in a few weeks.
- We are in a new “Golden Age of Wine” Primarily for the consumer.

**The Future**

- The future remains bright for well run companies making a good product without too much debt.
- Stay competitive in price & quality; let’s not be Detroit!
- The key to success in this market is to offer a good quality product at good value.

**Next Week**

- Lab meeting tomorrow.
- Download lecture slides at the class website.
- Lecture next week: 
  Viticulture