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WSU's Voice of the Vine– Cougar Ale, Wine Center, New Grads, Bottling

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With Brew Techniques From Sierra Nevada, Cougar Ale Underway

Now for something completely different: it isn't exactly about wine, but in the spirit of fermentation science, here's a story about a Washington state connection to one of America's classic and most popular breweries.

In 1980, Sierra Nevada Brewing Co. founder Ken Grossman effectively put the Cascade hop, from Yakima, Wash., on the map. That hop was central to the pale ale that made Grossman's company a household name.

More than three decades later, Washington State University researchers studying optimal brewing qualities with that same hop recently interned with Sierra Nevada master brewers to hone their brewing skills and learn advanced brewing methods that are being pioneered by American craft brewers.



Ruth Henderson pours hops into a tank at the Sierra Nevada Brewing Company in Chico, CA, as Abe

Coming soon: Cougar Crimson Ale

Kabakoff, Sierra Nevada head pilot
brewer, looks on.

In March, Ruth Henderson, postdoctoral researcher, and Dan Groenendale, field research director of the IAREC's environmental and agricultural entomology laboratory, spent three days in Chico learning about Sierra Nevada's brewing techniques from the company's master brewers. With the knowledge they acquired, Henderson and Groenendale will brew beers for sensory analysis trials by sensory scientist Carolyn Ross in Pullman and by American Craft Brewers Association members.

In particular, Henderson said, she and Groenendale learned how to prevent oxidation in beer, which occurs when oxygen gets into beer after fermentation. This gives the beer a harsh, bitter aftertaste.

Based on the Sierra Nevada brewers' recommendations, the WSU research team has moved to a closed system, fermenting beer in sealed kegs and moving it from one container to another using pressurized carbon dioxide so that oxygen never touches it.

"From now on, the only bitterness in our beer will come from the hops," Henderson said.

"The folks at Sierra Nevada are meticulous when it comes to the quality of their beer," she said. "They make sure it comes out excellent every time. What we learned from them is how to treat our brews like they do theirs — but on our small scale and with the equipment we have on hand."

Henderson and Groenendale also received advice on choosing combinations of grains and hops to make a tasty, balanced beer when creating a new recipe. Henderson is putting these ideas to the test now in her recipe for the new Cougar Crimson Ale.

"It will be an IPA (India pale ale)-style beer with a natural red coloration from the grains I am using to make it. No food coloring needed," she said. "I will be hopping it with whole, dried hop cones grown and harvested right here at the Prosser research station. Here's hoping my tasters enjoy it."

Read the full story to learn about Washington's "hopping" beer industry and for more on the history of Sierra Nevada's Cascade hop: <http://bit.ly/17ZU8dd>

—Nella Letizia

WSU Viticulture Students Land Jobs at Top

Washington Vineyards

Where do the best wine grape growers in Washington State find talent to manage their vineyards? Two owners of some of the state's top-ranked vineyards have selected Washington State University undergraduates, both majoring in Viticulture and Enology at the WSU Tri-Cities campus, to help oversee their acreage and grow consistently high-quality fruit.

WSU student Andrew Schultz headed to Washington's Rattlesnake Hills AVA in December, landing a job as vineyard manager and general manager for Hatstrup Farms, a wine grape and tree fruit producer. Owner Joe Hatstrup is also the founder of Elephant Mountain Vineyards, listed in *Washington Wines & Wineries*, the authoritative book on wine in Washington, as one of Washington's twenty "Premier Cru" vineyards.



Schultz will have a lot on his plate, with duties including grape planting, employee management, budget oversight, and customer relations. He admits that this level of responsibility is not typical of a recent graduate, but Schultz's path to a baccalaureate was anything but typical. "I began working and managing employees in a warehouse when I was sixteen," recalled Schultz. A career in the military gave him further leadership experience.

Andrew Schultz

During his studies at WSU-Tri-Cities, Schultz packed in classes like advanced wine chemistry, advanced physiology, and post-harvest science to give himself an added edge for a career in the vineyard. But he never viewed coursework as the sole ticket to success. "A lot of students believe course work is the essence of a degree program," he said. "But experience is vital, too. You need practical experience before completing school if you want to land a higher-level position."

WSU plant pathologist Dr. Naidu Rayapati, who is based at WSU's Irrigated Agriculture Research and Extension Center in nearby Prosser, connected Schultz with a research project where he inventoried grapevine leafroll disease in another of Washington's top vineyards to get a handle on the extent and significance of the disease. Schultz's research efforts have earned him three awards from the Washington Association of Wine Grape Growers.

"Dr. Rayapati's involvement was vital in getting me connected to the industry," Schultz said. "He introduced me to many vineyard and winery operators. Washington has a tight-knit group of growers and wineries, so I see these contacts as vital for my career."

Schultz has a single word of advice for those who want experience: “Ask.” And for WSU Tri-Cities students, asking opportunities abound, because much of the Washington wine industry is within easy reach of campus.

Elizabeth Jones, another viticulture and enology student studying at the WSU Tri-Cities campus, has been snatched up by Ciel du Cheval, a famed vineyard in the Red Mountain AVA. Washington Wines & Wineries designates Ciel du Cheval one of Washington’s twenty “Grand Cru” vineyards. As assistant vineyard manager, Jones is helping with day-to-day operations, as well as monitoring the telemetry systems that give growers pinpoint data for decisions on irrigation, frost control, and other viticultural practices. She will also be working in the lab, testing fruit for Brix, titratable acid, and pH — important indicators for both harvest and enological management.



Elizabeth Jones

Jones credits her education and advisors at WSU for her knowledge of the basics necessary for vineyard management, such as botany, plant physiology, and biochemistry. But she shares Schultz’s sentiment that classwork is not enough. Students should check with their advisors for opportunities, even unpaid internships and work experience. “Prospective employers are more likely to ask about experience than grades,” she noted.

Ciel du Cheval owner Jim Holmes was clearly impressed by Jones’ WSU-guided, grant-funded research projects. During her junior year, working with Rayapati, she researched the transmission and spread of grapevine leafroll virus. During her senior year, she undertook a comparison of the sensitivity and cost of enzyme-linked immunosorbent assay (ELISA) and polymerase chain reaction (PCR) in detecting grapevine leafroll virus. “The prevailing view was that ELISA was the better technique, but research showed PCR to be more sensitive and cost-effective,” she said. Both years, she took home top prizes from the annual Washington Association of Wine Grape Growers (WAWGG) conference.

“I was not yet finished with school, interviewing at one of the top vineyards in the state, wondering why they would want to hire me,” Jones recalled. “Then Jim Holmes asked me, ‘With all of your experience and talent, why would you be interested working at a little vineyard like Ciel du Cheval?’”

Holmes said that Jones has all the ingredients he seeks in a management-level hire: Technical knowledge, initiative, curiosity, and the ability to work well with customers. And WSU offers a great intangible to its students. “WSU teaches its students how to think better,” he said.

Rayapati is proud of his students, but not necessarily surprised. “These two students have spent a considerable amount of time in my lab during their study at WSU Tri-Cities, learning science and gaining hands-on experience related to grapevines and grapes. These educational and practical experiences have played a big role in their career successes.”

To read more about Elizabeth Jones, see the Voice of the Vine article on Elizabeth Swanson (the name she used before we toasted her marriage): <http://bit.ly/10PIMGy>. Learn more about WSU’s undergraduate program in viticulture and enology by visiting <http://bit.ly/9Xy6il> and stay tuned for future stories about WSU V&E graduates.

–Bob Hoffmann

Design-build team selected to construct new Wine Science Center

The Wine Science Center Development Authority has selected Lydig Construction Inc. and ALSC Architects of Spokane to design and construct a \$23 million research and teaching facility at Washington State University Tri-Cities in Richland. With the selection of Lydig and ALSC, work is to begin immediately to convert the conceptual look into design documents. Construction is expected to start this fall, with the building completed in late 2014.



A proposed front entrance to the WSU Wine Science Center in Richland, WA. Construction is expected to begin in the fall (2013).

“Lydig and ALSC conceptualized the Wine Science Center as an iconic structure that will attract world-class researchers and future students to the wine industry in Washington State, plus provide a great visitor experience within the facility,” McKinney said. “The Lydig and ALSC team has a proven and excellent reputation of successfully delivering design-build projects and we look forward to working with them on this exciting project.”

Some of the features will include a teaching winery, state-of-the-art research laboratories, classrooms, and an international wine library. The Wine Campaign is in the final stages of fund-raising to complete construction and to fully equip the facility. For more details, including a video about the value of the Wine Science Center, visit <http://wine.wsu.edu/campaign/>.

-Melissa O'Neil Perdue

Student wine project culminates with bottling, tasting



After months of hard work, Merry Cellars winery is bustling as WSU's Viticulture and Enology Club bottles, corks, labels, and packages its beautiful rosé of syrah.

Watch them in action: <http://youtu.be/9Xuw9NVYkvE> and read their full story: <http://bit.ly/YCYnE1>.

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