

Winter 2018

CCOVInews

A newsletter from
the Cool Climate Oenology
and Viticulture Institute



CCOVI

Brock University

Provincial Minister Reza Moridi visits CCOVI for major funding announcement

The Honourable Reza Moridi, Minister of Research, Innovation and Science, came to CCOVI in January to announce \$960,000 in funding that will help the institute create the world's first augmented reality, virtual reality and sensory reality consumer laboratory, to be known as the R³CL.

The money from the Ontario Research Fund matches a recent Canada Foundation for Innovation (CFI) grant awarded in October, and combines with support from the grape and wine industry that will enable CCOVI to launch the landmark facility. The \$2.4-million project will greatly enhance CCOVI's research and studies into fermentation, wine flavour and consumer behaviour.

The R³CL lab will allow researchers to study how a range of factors such as sights, sounds and smells impact consumer choice and impression of wine.

"Supporting Ontario's researchers as they make breakthrough discoveries will help advance technology and drive economic growth across the province," said Moridi. "Making sure they are working in state-of-the-art facilities with the most up-to-date technology will help researchers do their best work and lay the groundwork for new products and services, and economic opportunity for people in Ontario."

This greater understanding of consumer behaviour will help the industry to best market their wines to potential customers, said CCOVI Director Debbie Inglis.

"The concept of coupling consumer behaviour with technical tools of augmented and virtual reality is not only going to put Canadian researchers on the forefront of this research, but it's also an international first," she said.

CFI President and CEO Roseann O'Reilly Runte adds: "This first-of-its-kind wine consumer laboratory will be an influential research platform to support and propel the Canadian grape and wine industry."

The grant will be used to purchase state-of-the-art equipment for several CCOVI research programs.

For example, gas and liquid chromatography mass



Brock University President Gervan Fearon, left, with Debbie Inglis and Minister Reza Moridi

spectrometry machines will enable researchers to examine the impact of viticulture treatments that influence the colour, flavour and aroma of wine. This equipment will help researchers monitor changes to wine quality because of the impacts of climate change, one example being the cold hardiness of vines and choosing the right clone/rootstock combination for vine performance and wine quality tailored to our future climate.

The enhanced chemical analysis from the new equipment will support CCOVI's TanninAlert. The program tracks tannin levels – which impact bitterness and astringency in wine – and provide Ontario grape growers and winemakers with information on the ripeness of these flavours to help consistently create rich and robust Ontario red wines.

The investment will also allow for an enhanced fermentation facility to be built at CCOVI for use in research and in the teaching winery. The custom-made tanks are individually controlled for heating and cooling, and will allow researchers to determine ideal temperatures for different wine styles and impact during the wine-making process.

Loss of an industry icon: Dr. Karl J. Kaiser left indelible mark on CCOVI



Debbie Inglis with Dr. Kaiser when he was awarded the Brock Faculty of Math and Science Distinguished Alumni Award in 2009.

The entire CCOVI team is mourning the loss of Inniskillin Winery co-founder Dr. Karl J. Kaiser, an industry pioneer, friend and integral part of the institute, who passed away on Wednesday, Nov. 22. He was 76 years old.

Kaiser's impact on the Niagara and Canadian wine industry is unmatched, and it was through his guidance and drive that Brock created the Cool Climate Oenology and Viticulture Institute (CCOVI) and the Oenology and Viticulture (OEVI) undergraduate program in the 1990s, said CCOVI Director Debbie Inglis.

"Karl truly believed that a successful wine region needed a research institute to support it, and he was passionate about passing his knowledge on to the next generation."

Kaiser's love of wine research and his connection to Brock, where he graduated from in 1974, was something he took pride in.

"I always felt very honoured by being a part of Brock's CCOVI as an affiliate," Kaiser wrote in his final email to CCOVI Communications Specialist Sarah Moore recently. "It always has been great enjoyment being part of CCOVI in this way."

Born in Austria in 1941, Kaiser immigrated to Canada in 1969 with his wife Silvia. After graduating from Brock's chemistry program in 1974, Kaiser was experimenting with winemaking, which led to a connection with Donald Ziraldo, a greenhouse owner who was providing Kaiser with grapes for his hobby.

"They both believed Ontario could produce better wine," said Inglis, who first met Kaiser when she was 14 and working on her family's grape farm.

Receiving the first Ontario winery licence since 1920, Kaiser and Ziraldo launched Inniskillin Winery in 1975, and began making wines using *Vitis vinifera* wine grapes rather than lower quality juice grapes.

"It was a huge change for what was known in the industry at the time. But it was through their initiatives

that the industry started to transform and we gained notoriety and respect," Inglis said.

The biggest turning point came in the 1980s, when Kaiser and a handful of other Niagara winemakers started experimenting with Icewine production. Kaiser's 1989 Inniskillin Vidal Icewine won the highest-available prize at the 1991 Vinexpo in Bordeaux, France, putting the international spotlight on the Canadian wine industry and establishing Kaiser as the world's leading expert on Icewine.

He also loved the challenge of making high-quality Pinot Noir in Niagara, a passion he carried with him throughout his career.

The winemaker was given the Order of Ontario in 1993, was awarded an honorary doctorate from Brock in 1994, and was the recipient of Brock's Distinguished Alumni Award in 2005 and the Faculty of Math and Science Distinguished Alumni Award in 2009.

"He was never comfortable being in the limelight and taking acknowledgement for all that he achieved and what he put forward," said Inglis. "He was a very understated individual."

It was Kaiser's desire for wine research and knowledge that, together with other industry pioneers, led to the development of CCOVI in 1996. He was part of the industry group that developed the concept for the institute that year, as well as the OEVI undergrad program that followed in 1997.

Kaiser developed the OEVI wine chemistry course and was its first instructor in 1998. He became a CCOVI Professional Affiliate and returned on a regular basis to give lectures and seminars, the videos of which are still among the program's most downloaded.

Creekside Estate Winery winemaker Rob Power was a student in that first wine chemistry course.

He said: "The best parts of the class were when Karl went off-script. That's when we learned some real winemaking at the feet of the master and he kept us all enthralled by slipping in anecdotes and tips." Kaiser was also a researcher, working with Inglis and others to understand more about Icewine fermentation and production.

"Karl co-wrote a book and was an active researcher, but not many people realize it because he was such a humble individual," she said. "He was a teacher and a mentor. For me personally, he believed in me as a scientist and that meant the world to me. It really launched my career in Icewine research."

The Dr. Karl J. Kaiser Memorial Fund has been launched in honour of his love of learning and sharing knowledge. Donations can be made at brocku.ca/donate or by phone at 905-688-5550 x4190.



Dr. Karl J. Kaiser

CCOVI Toasts five years of Fizz

CCOVI celebrated its fifth annual Fizz Club on Dec. 7 by going from “Field to Fizz.” This year’s day of talks and tastings was presented by senior oenologist Belinda Kemp and senior viticulturist Jim Willwerth, who discussed all aspects of the sparkling winemaking process from the vineyard straight through to the consumer’s glass.

Fizz Club once again soldout and brought together winemakers from across the country, including those from British Columbia and Nova Scotia, as well as within Ontario from Prince Edward County, Lake Erie North Shore, Simcoe and Niagara.

CCOVI research on leaf removal, clones and soil type trials and their impact on sparkling wine quality was discussed and followed-up by tastings.

“You really see such a



Fizz Club brought together winemakers from across Canada

difference in those research wines that we tasted and it’s really exciting to know that what you do in the vineyard really impacts the final product,” said Emilie Aubie, of Andrew Peller Ltd.

Attendees also learned about the latest international research and its relevancy to Canada, future CCOVI research topics, bottle closures, yeast, and other practical winery aspects.

WHAT’S HAPPENING AT CCOVI

CONTINUING EDUCATION COURSES

Saturdays, Feb. 10 to March 17: Certificate in Ontario Wine

Feb. 17 to March 23: Online - WSET Level 2 Award in Wines and Spirits

March 3 to April 6 : Online - WSET Level 2 Award in Wines and Spirits

Saturday, March 3: OEVI ON05 - WSET Level 1 Award in Wine

April 5 - May 31: OEVI ON06- WSET Level 2 Award in Wines and Spirits (in-class)

CCOVI offers a wide range of in-class and online courses, visit: brocku.ca/ccovi/continuing-education/ to learn more.

CUVÉE 2018 MARCH 23–25

Grand Tasting (March 23)

Early bird ticket: \$175 Available until Jan. 31 (regular price of \$200)

Snap a selfie contest: Visit any of our participating wineries before Jan. 31, take a picture with the Cuvée wine bottle and hashtag #Cuvée2018 to win a Cuvée weekend!

Visit www.cuvee.ca to learn more and buy your tickets today!

Visit CCOVI at the **ONTARIO FRUIT & VEGETABLE CONFERENCE** Feb 21-22 | Scotiabank Convention Centre www.ofvc.ca for more info

Annual lecture Series returns for 2018

A host of Canada’s grape and wine experts will be sharing their latest findings at the CCOVI Lecture Series this winter. The 10-week series will run every Monday from Jan. 15 to March 26.

All lectures are free and take place Monday afternoons at 2 p.m. in H313 of the Mackenzie Chown complex at Brock University. For those not

able to join in person, the lectures are available via live webcast and are posted online after the talk. People can also call in this year, and participate in a live question and answer period after each lecture.

For more details, or to view the video archive, visit: brocku.ca/ccovi/outreach/lecture/

2018 CCOVI Lecture Series Lineup

Monday, Jan. 15
David Sheppard
“Pinot Noir: The Savage Yet Seductive Grape.”

Monday, Jan. 22
Janet Dorozynski
“Promoting Canada Internationally through Wine and Food.”

Monday, Jan. 29
Belinda Kemp
“How method, timing and severity of leaf removal impacts Cabernet franc wine flavour.”

Monday, Feb. 5
Ronald Jackson
“Get Corked (the intricacies of cork closures and their alternatives).”

Monday, Feb. 12
Annette Nassuth
“Do grapes SCREAM for frost tolerance?”

Monday, Feb. 26
Jim Willwerth
“Effects of Abscisic acid form, concentration and

application timing on grapevine cold hardiness.”

Monday March 5
George Soleas
“To be determined.”

Monday March 12
Tek Thongpapanl
“Why we buy the sparkling wine that we buy.”

Monday March 19
Baozhong Meng
“Grapevine viruses, their impact and their distribution in Ontario.”

Monday March 26
Jeff Stuart
“Sweet, sticky, and healthy - using metabolomics to develop a ‘green’ protocol for extracting resveratrol and other polyphenolics from the waste pomace of Ice Syrup production.”

CCOVI researches 'MOG' mitigation

CCOVI researchers have discovered that frozen leaves and petioles, often referred to as MOG (materials-other-than-grapes), can impact final wine quality.

"During harvest, those frozen leaves are more difficult to separate from the fruit than a fully intact canopy," CCOVI's Andrew Reynolds explained. "As more wineries in the region opt to hang their late-maturing varieties into the late fall, you then contend with the addition of those frozen leaves and petioles which, when mixed with the fruit, increase the concentrations of compounds most likely responsible for an unfavourable floral or green aroma, decreased colour intensity and a bitter taste in Cabernet

Franc and Cabernet Sauvignon wines."

Reynolds and his team began studying the impact of frozen MOG in 2015.

They discovered wines containing the highest concentration of frozen leaves and petioles also had the highest concentration of a variety of odor-active terpene compounds and these compounds are most likely responsible for the undesirable floral characteristic.

"It was very clear the wines identified as having high floral characteristics were the ones associated with these terpenes," Reynolds said. "MOG in general - and particularly the petioles - most definitely increases the concentration of multiple odor active compounds that are most likely responsible for floral taint

in Cabernet Sauvignon and Cabernet Franc."

The team is expanding the research to examine different methods for combating the problem. Using varying levels of MOG additives, they are fermenting fruit that has been harvested using a variety of different methods and strategies. These include hand-harvested, utilizing an optical sorter that separates all of the leaves, petioles and rotten berries as it harvests in the field, sorters that remove the MOG back in the winery on a sorting table, and a technique where a leaf-blower removes the leaves before the harvest machine picks the fruit. They are also testing which yeast strains are effective in mitigating the floral aroma.

Publications

- Yang, F.; Heit, C.; Inglis, D.L. (2017) *Cytosolic Redox Status of Wine Yeast (Saccharomyces Cerevisiae) under Hyperosmotic Stress during Icewine Fermentation*. Fermentation, 3, 61.
- Lauren Stradwick, Debbie Inglis, Jennifer Kelly, Gary J Pickering. (2017). Development and application of assay for determining β -glucosidase activity in human saliva. *Flavour* 6(1): 1-8.
- Cyr, D., Kwong, L., & Sun, L. (2017). An Examination of Tail Dependence in Bordeaux Futures Prices and Parker Ratings. *Journal of Wine Economics*, 1-15. Forthcoming.
- Samantha Stea and Gary J Pickering. (2017). Optimizing Messaging to Reduce Red Meat Consumption. <http://dx.doi.org/10.1080/17524032.2017.1412994>. Environmental Communication. In Press
- Debra Inglis, Lisa Dowling, Jennifer Kelly, Fred Diproffio, Belinda Kemp, Gary Pickering. (2017). A new wine style for Canada's cool climate wine regions based on the appassimento technique. *The Grape Press*. 36-37.
- Pickering GJ, Hayes JE. (2017). The Influence of Biological, Experiential and Psychological Factors in Wine Preference Segmentation. *Australian Journal of Grape and Wine Research*. doi: 10.1111/ajgw.12.

Briefs

- G.J. Pickering, M. Thibodeau, M.R. Bajec, A.J. Saliba. (2017). Alternative facts: re-examining thermal tasting classification methods. 12th Pangborn Sensory Science Symposium, Rhode Island, United States. (CD). Conference Date: 2017/8
- Margaret Thibodeau, Martha Bajec, Gary Pickering. (2017). The Impact of Taste on Alcohol Consumption in a Non-Clinical Population. 12th Pangborn Sensory Science Symposium, Rhode Island, United States(CD). Conference Date: 2017/8
- Stephanie Small-Kelly and Gary Pickering. (2017). Does taste responsiveness associate with beer liking?12th Pangborn Sensory Science Symposium, Rhode Island, United States (CD) Conference Date: 2017/8

VineAlert Returns

CCOVI's VineAlert program has returned for another season to help the industry protect their vines, once again collecting samples and monitoring hardiness at sites across the Niagara Peninsula, Lake Erie North Shore and Prince Edward County.

CCOVI researchers will be sampling more grape buds than usual this year, as well, in order to further bolster their cold hardiness database. The goal, says CCOVI's Jim Willwerth, is to improve predictive modelling to help

growers better understand how their vines will react during erratic weather conditions. The years of data will help researchers "further understand how growing season and variable winter conditions impact hardiness, which will allow us to better protect the vines and better understand how viticulture may change in the future."

To sign up for updates or learn more, visit: www.ccovi.ca/vine-alert

Continuing Ed. instructor earns new credentials



Congratulations to CCOVI's continuing education instructor Christopher Waters, for successfully completing his WSET

Level 4 Diploma in Wines and Spirits. Waters now joins the ranks of the over 9,000 graduates worldwide who can be recognized by the post-nominal DipWSET designation. He has also been recognized as a 'WSET Certified Educator.' "Chris plays a pivotal role in our continuing education platform and this will enhance his already exceptional work," says Continuing Education Manager Barb Tatarnic.

Master's Student seeking survey participants

Emilie Poirier invites winemakers, grape growers and winery/vineyard owners to participate in an online survey investigating

climate change perception and adaptation in the Canadian wine industry for a chance to win \$500. Answers remain anonymous and the survey takes about 20 minutes to complete. **Visit unipoll.ca to participate.**