



BC FLOODS AND CLIMATE CHANGE

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THE RING

March 2022

The University of Victoria's community newspaper

uvic.ca/news



University of Victoria

SPEED READ

WORKPLACE EXCELLENCE

One of BC's top employers

UVic has been named one of BC's top employers, recognizing that it's an industry leader in offering an exceptional place to work. UVic has previously been recognized as a Best Diversity Employer for 10 consecutive years, six times as a Greenest Employer and also placed seventh on Forbes' 2022 Canada's Best Employers list, up from number 12 on the 2021 list.

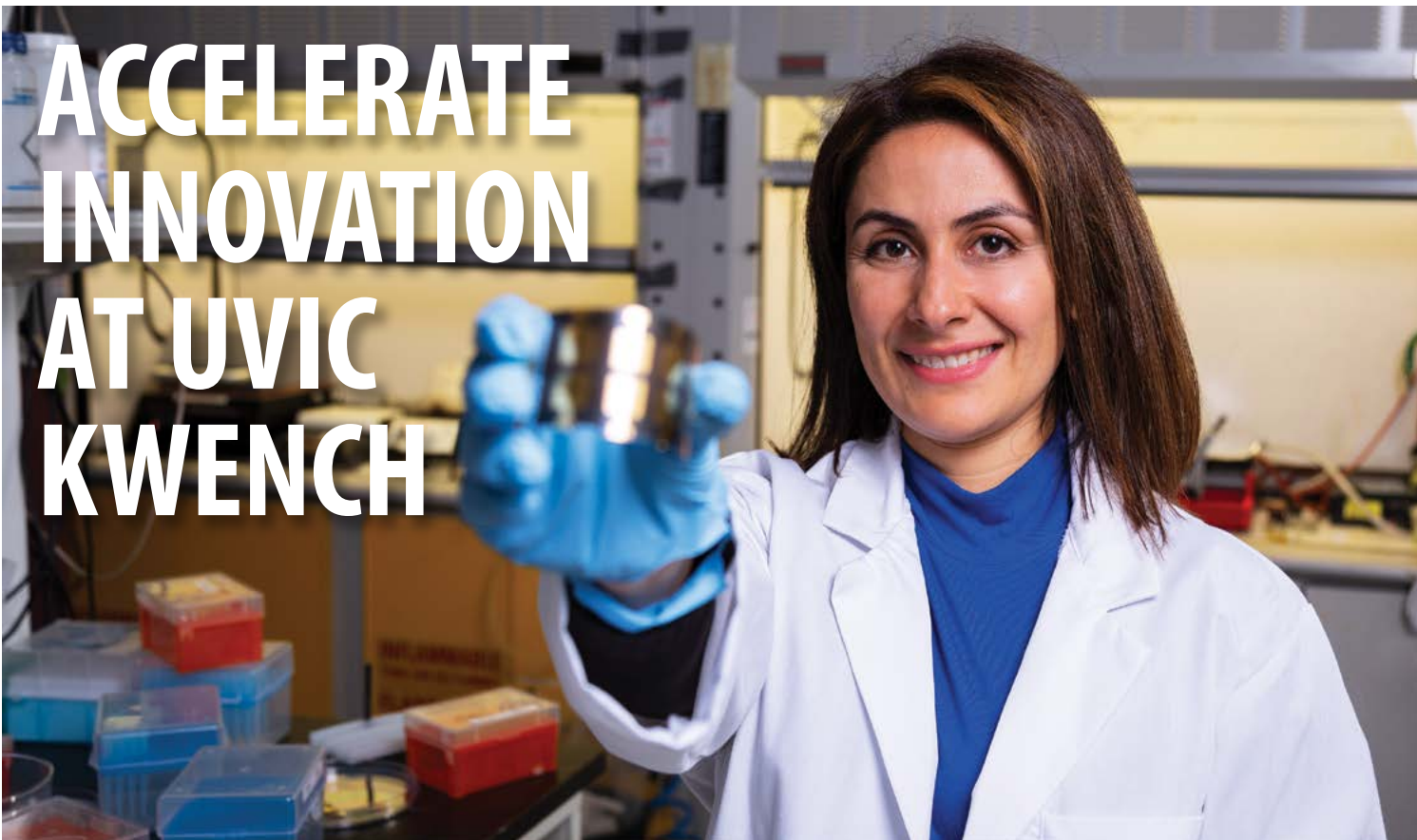
bit.ly/22-employer

CAMPUS SUSTAINABILITY ACTION PLAN

Campus and community engagement opportunity

The Campus Sustainability Action Plan is in its third phase, with community engagement activities planned for March 27–April 8. Join us to learn about the key components of the plan, and building relationships for plan implementation. There will be opportunities to provide comments in person at two open houses on campus and through the project website.

bit.ly/22-csap



Sahar Sam, co-founder and chief science officer of Solaires Entreprises Inc., was a participant in UVic innovation centre's W Launch and W Venture programs. UVIC PHOTO SERVICES

150+

STARTUP COMPANIES SUPPORTED BY COAST CAPITAL INNOVATION CENTRE SINCE 2016

New UVic presence at downtown KWENCH to support region's startups.

With a move into Victoria's downtown core, the University of Victoria has opened a new site that will accelerate collaboration and entrepreneurship by bringing together academics, industry and other partners within the community.

UVic KWENCH is a creative workspace where students, faculty, alumni and community partners can access programs and services in a highly visible, work-integrated environment to turn ideas into action. This innovation space aims to create dynamic synergies to support technology and knowledge-based businesses in our region.

"KWENCH is a modern and creative space where UVic students, faculty, alumni and other community partners can co-create impactful solutions to some of our world's biggest challenges," says Lisa Kalynchuk, vice-president research and innovation at UVic. "By moving into Victoria's downtown core, UVic can help cultivate a collaborative and dynamic innovation ecosystem in our region."

UVic's site at KWENCH provides free programming to support venture exploration and early-stage startups. The first program offering focuses on support for women exploring starting ventures. Services include mentorship, workspace, access to subject matter expertise, direct connection to UVic and other networks, workshops and seminars.

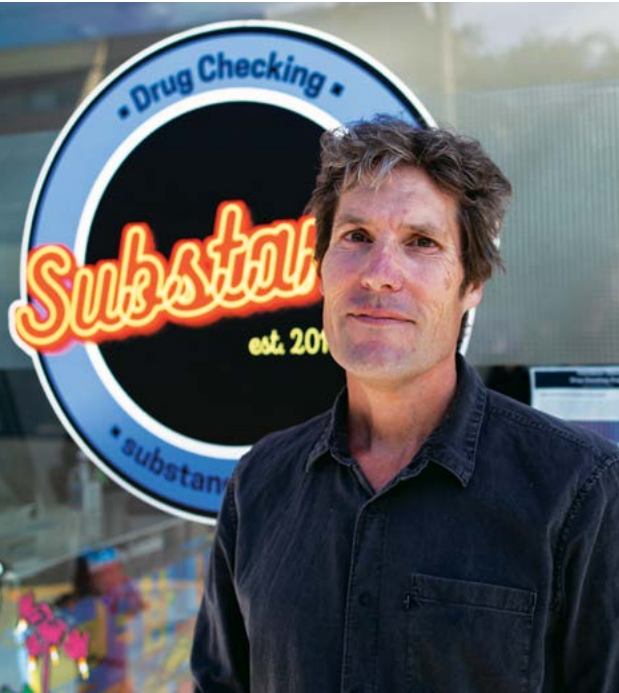
The network expands the existing work of UVic's Coast Capital Innovation Centre, which is the university's startup incubator. Since its launch in 2016, the centre has helped more than 1,300 students from all faculties across campus and supported the launch of over 150 startup companies.

Roughly half of all program participants are from underrepresented groups, including women, visible minorities and Indigenous Peoples.

"Universities have a responsibility to support the communities in which we live and work, and the pandemic has made this more vital than ever. UVic is well-positioned to contribute leadership

SEE KWENCH, P.3

Drug checking as community building, service and research



Wallace at the Substance storefront. PHOTO: JAY WALLACE

BY AMANDA FARRELL-LOW

The Vancouver Island Drug Checking Project is about much more than testing drugs.

Of course, drug checking is its core service. Their storefront, Substance, tests samples at the corner of Cook and North Park in Victoria, and demand for their services has never been higher, with the backdrop of the dual public-health emergencies of COVID-19 and drug-overdose deaths. But the project, led by UVic social work professor Bruce Wallace and chemistry professor Dennis Hore, is also a blend of research, service and partnerships including several UVic faculties, people who use drugs, students, government agencies, community groups and more.

Wallace, a 2022 recipient of a President's Chair—the highest academic honour UVic can award a faculty member—says community engagement and partnerships are an integral part of the

work of the drug checking project and his research program in general.

"Often, community-engaged research looks at how we can get communities more engaged in our research in respectful ways. I think it's more about how we can get the university and the researchers more engaged in community," says Wallace, who is also a scientist with UVic's Canadian Institute for Substance Use Research (CISUR). "That's where service-as-research really has a unique role. We're not going out and trying to study a problem. We are trying to generate evidence by addressing the problem."

Mark Willson, director of programs for SOLID, the drug user organization which shares its building with Substance, agrees. "Too often, researchers come into our community, do a survey, and we don't hear much from them again," says Willson. "Substance is here providing a much-needed service and giving back to the community instead of just researching us."

Researching overdose response

Since BC declared a public-health emergency related to overdose deaths in 2016, Wallace's research has focused on overdose response, including the made-in-BC model of overdose prevention sites. His work has since shifted to drug checking, which uses a combination of technologies, like spectrometers and testing strips, to determine the type and concentrations of substances found in samples of drugs.

Initially, Wallace says the Vancouver Island Drug Checking Project's primary aim was to detect fentanyl in the illicit drug supply to help people avoid it. But a lot has changed since the project began in 2018. Heroin has been almost entirely replaced by varying concentrations of fentanyl, and now benzodiazepines—central nervous system depressants that do not respond to naloxone—are showing up in about half of all expected-opioid samples they test.

SEE DRUG CHECKING, P.3

Equity Action Plan

We've heard from the UVic community about your dreams for the future. Now we want to better understand what barriers to equity, diversity and inclusion exist at UVic so that we can collectively develop strategies to address them. Until the end of March, we're asking you to engage in dialogue and share your stories by taking part in a conversation café or by providing your feedback and insights anonymously through an online survey. Share your stories, experience, advice and recommendations to build an Equity Action Plan that will create long-lasting and meaningful change.

uvic.ca/eap



THE RING Vol. 49 No. 3

The University of Victoria's
community newspaper
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Printed using vegetable-based inks on
100% post-consumer recycled paper.

Next issue: April 14, 2022

The Ring is published eight times a year by
University Communications + Marketing.

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Printed in Canada by Black Press

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Canadian Publications Mail Agreement
No. 40014024

Planning for a net-zero campus

UVic is planning its transition towards low-carbon energy by developing a comprehensive and long-term framework to guide campus development and operations and phase out fossil fuel energy.

Most buildings on the Gordon Head campus have heat and hot water delivered by the District Energy Plant, which generates and distributes thermal energy through a network of underground pipes. The plant was constructed in 2019 to replace an end-of-life and inefficient boiler plant in the Engineering Lab Wing. The new plant received Leadership in Energy and Environmental Design (LEED) Gold certification, but combusts natural gas and is the biggest source of UVic's greenhouse gas emissions. Fossil fuels for university buildings accounted for 92 per cent of GHG emissions (9,853 tCO₂e) in 2020.

Mike Wilson, director of the Office of Campus Planning and Sustainability, says, "The project to decarbonize building energy demonstrates the university's commitment to climate action and taking responsibility for reducing its emissions." The planning process is also consistent with the university's recent submission to the Race to Zero Pledge—a global campaign supported by the United Nations Framework Convention on Climate Change (UNFCCC) dedicated to reducing carbon emissions to net zero by 2050.

"There are several technology pathways that can significantly reduce our emissions," says David Adams, manager, energy programs at UVic. "This project is about finding the pathway



Two new student residence buildings built to Passive House standards are taking shape on campus.

with the best overall performance while meeting emissions targets in a financially viable way."

Examples of specific technologies the university has been exploring include: thermal energy recovery from waste heat sources, incorporating campus-scale heat pumps into the district energy system, and use of low-carbon building materials such as mass timber for construction of new buildings. Some of these technologies have already been included in new capital projects on campus.

Several decarbonization strategies have been integrated into the new Student Housing and Dining project, which is currently under construction. Notable features include best-in-class

exterior insulation, energy recovery of heat from ventilation exhaust and grey water, and highly efficient heat pump technology for space heating and hot water used in showers and the kitchen. Design and construction of the new buildings will meet LEED v4 Gold and Passive House standards.

"There is also an opportunity to create experiential learning and research projects through the implementation of the plan," says Wilson. "Students will be able to study how green buildings operate and learn about the opportunities and constraints of green design, something that has already been considered in the current Engineering and Computer Science Building Expansion project."

The final plan will target a 50 per cent reduction in emissions by 2030, and 100 per cent by 2040, which includes phasing out fossil fuel energy for low-carbon energy, and purchasing carbon offsets for residual emissions associated with low-carbon energy. It is expected that results from the project will be available to share later this spring, before the final plan is completed.

Meanwhile, the university is also in the final stages of developing the new Climate and Sustainability Action Plan 2030, which will be published later this year. A community engagement event in late March will give the campus community an opportunity to see the broad themes of the plan before it is finalized.

UNIVERSITY LEADERSHIP

Valerie Kuehne's legacy of university service

BY LINDSAY GAGEL

There are few people who have had a bigger impact on UVic than Dr. Valerie Kuehne. Valerie, who completes her term as vice-president academic and provost this year, does so after more than 30 years of service to the university—including 22 years in senior leadership.

I met Valerie three years ago when I was hired to work in the provost's office, and I knew instantly that I could learn a lot from her. She leads by example, with both integrity and humility, and it has been immensely rewarding to have worked so closely with such an accomplished and experienced leader.

During her eight years as provost, Valerie has transformed the UVic campus and community by increasing student supports and services; furthering equity, diversity and inclusion; enhancing teaching and learning supports; and creating new experiential learning opportunities.

She also helped launch several new academic programs, including the world's first Indigenous law degree.

Recently, Valerie improved student mental health and wellness supports at UVic by creating an integrated Student Wellness Centre and a virtual 24/7 mental health service. She also championed the largest capital project in UVic's history: two new student housing and dining buildings, with the first set to open by September.

Student awards and bursaries have increased dramatically with Valerie as provost, and a record number of entrance scholarships were awarded last year. Notably, and a personal goal for Valerie, graduate student funding has increased every year over the past eight years, including Indigenous graduate fellowships.

Valerie has also prioritized teaching and learning supports for instructors and students throughout her tenure, and especially so during the



Kuehne. UVIC PHOTO SERVICES

COVID-19 pandemic. She invested heavily in the Division of Learning and Teaching Support and Innovation (LTSI), along with new technologies, teaching assistants and sessional instructors, and classroom infrastructure to support hybrid education and lecture capture.

LTSI Executive Director Laurene Shields says that Valerie draws from her leadership expertise as well as her scholarly research in intergenerational relations to create a positive environment for students.

"Valerie is passionate about the value and importance of post-secondary education and about creating spaces where young adults can continue to learn, grow and flourish," Laurene explains. "This deep dedication has been evident throughout her time as an academic leader. Mostly recently, she has whole-heartedly supported the integration of new learning technologies so that faculty, staff and students can thrive in the in-person and virtual learning environments."

Valerie also led the development of UVic's first Strategic Enrolment Management Plan, which includes strategies to recruit a diverse student population and foster student success. One goal of the plan is to increase experiential learning opportuni-

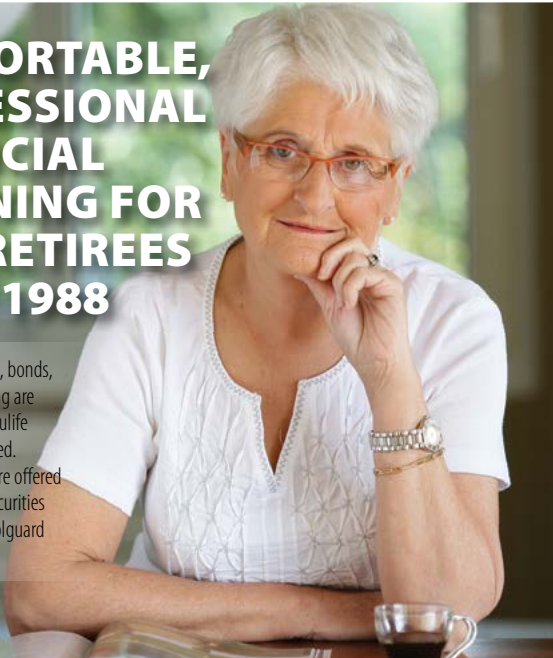
ties through programs like the new Research-Enriched Applied Learning (REAL) Internship, which provides 50 new undergraduate students a year with paid research opportunities under the supervision of a faculty member.

"REAL is a noteworthy legacy for Valerie because it highlights the importance of the student experience," says Tony Eder, who has worked with Valerie for 21 years. "I've always known her to consider what's best for students, and the student experience, when prioritizing new investments. REAL differentiates UVic from other research universities and provides a lasting and meaningful experience for students."

Valerie's contributions and achievements are many, and they are significant. I once asked Valerie why she took on the challenging role of provost. She leaned back in her chair and looked thoughtfully out the window. "I do it in service of the university," she said. Without a doubt, Valerie has done a great service to this university, and she truly believes in its value. I am thankful to have had the chance to work alongside her, and I will forever be amazed at the many ways in which she has transformed our university.

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Canadian Reconciliation Barometer project tracks shifting Canadian attitudes

The first report of the Canadian Reconciliation Barometer, released last month, highlights areas of agreement and disagreement between Indigenous and non-Indigenous Peoples when it comes to reconciliation—findings the project team hopes will inform public policy.

A key finding showed that Indigenous Peoples and non-Indigenous Peoples experience Canada in a significantly different manner. One example of this gap is the difference in understanding of the harms inflicted by residential schools. This gap suggests that despite the clear gains in education, much more needs to be done to educate Canadians about the impact of residential schools, as well as Indigenous Peoples experiences more broadly.

Other key takeaways from the report include the view that Indigenous Peoples do not think that we have built true nation-to-nation relationships, there is a lack of progress in equality of personal outcomes, as well as a significant concern that Indigenous cultures are not sufficiently thriving today. Findings also showed Indigenous respondents did not believe groups that harmed Indigenous Peoples have showed remorse, provided sincere apologies or accepted responsibility.

The report was developed by a team of Indigenous and non-Indigenous researchers in response to the Truth and Reconciliation Commission's (TRC) Calls to Action. "This barometer represents an effort to better determine how Canada is faring in



Moran in Winnipeg in 2020, holding one of three reconciliation paddles carved by artist and UVic Impact Chair in Indigenous Art Practices Carey Newman for the 2019 Building Reconciliation forum. PHOTO: NARDELLA PHOTOGRAPHY

the establishment and maintenance of mutually respectful relationships. It shows us that we still have a lot of work to do," says UVic's Associate University Librarian–Reconciliation Ry Moran, a co-investigator of the project.

The report is also intended to draw attention to other Calls to Action issued by the TRC. "The TRC was clear that ongoing monitoring and transparency of data is paramount, specifically calling for the creation of ongoing statistical reports, a National Council for Reconciliation and

an annual report on the state of reconciliation in this country," explains Moran. "This ongoing monitoring is essential to ensure the vital work of closing the inequities present in society continues to be informed by sound information and data."

The researchers from the University of Manitoba, UVic and University of Winnipeg polled 3,225 Indigenous and non-Indigenous people on 13 indicators of reconciliation. The team also carefully reviewed what residential school Survivors said about reconciliation in their statements to

the TRC. Focus groups with people and organizations working in this field provided further grounding.

The Barometer Report is supported by the Social Sciences and Humanities Research Council, the National Centre for Truth and Reconciliation, Probe Research Inc., Mitacs Accelerate Industrial Fellowship and others.

This project also reflects UVic's commitment to the United Nations Sustainable Development Goals (UN SDGs), specifically the SDGs on reducing inequalities and on fostering peace, justice and strong institutions.

KWENCH

CONTINUED FROM P. 1

and expertise to innovative local initiatives that support community resilience and collaboration," says Kevin Hall, UVic president and vice-chancellor.

"Through community-based innovation hubs like UVic KWENCH," continues Hall, "our diverse UVic community will partner with innovators and entrepreneurs who are contributing to the quality of life in our region."

Sahar Sam, co-founder and chief science officer of Solaires Entreprises, was a participant in the innovation centre's 2020 W Launch and W

Venture programs, which supported more than 40 early-stage female entrepreneurs. Solaires is a Canadian cleantech company focused on innovative and sustainable solar cell technology to create the next generation of solar cells that enable high-efficiency clean power generation from any surface facing the sun.

"Being a part of the W programs has been life-changing," says Sam. "As a researcher, I personally know there are so many innovations happening in the lab. This UVic innovation opportunity gave me the confidence to step outside of my comfort zones as

well as new tools and the community connections I needed to take an idea into the market."

W Launch fed into the W Venture program—for which Sam was also selected to participate—that supported more than 30 companies led by women. W Venture was run by regional partners, including UVic, Viatic and Accelerate Okanagan, with funding from Canada's Digital Technology Supercluster.

Sam is currently collaborating with UVic researchers Makhsud Saidaminov, Canada Research Chair in Advanced Functional Materials,

and civil engineering professor Ralph Evins, who specializes in machine learning to design energy efficient buildings. "As a UVic alumna, by being a part of UVic's innovation community, I am passionate about maintaining my existing connections to the university while creating new bridges between academia, community and industry," says Sam.

Planning for 2022 W Launch programs is underway with cohorts expected throughout this year.

Read more about Sam's solar technology company at bit.ly/22-solaires.

DRUG CHECKING

CONTINUED FROM P. 1

Overdose deaths, already at unprecedented highs, have doubled in BC since the COVID-19 pandemic began.

"As everybody's lives were disrupted, that was also disrupting the lives of people who use drugs and those illicit markets," says Wallace. "Drug checking had a unique role in trying to provide as much up-to-date information to both service providers and people who are involved in that market to be able to know what was happening."

That meant staying operational throughout the pandemic was of the utmost importance. Wallace says they worked with the UVic and Island Health ethics boards to get approval to continue to offer drug checking as safely as possible, and set up at overdose prevention sites in encampments and hotels, following the need for their services.

The project was then approached by SOLID to move into a storefront in their building on Cook Street. Substance's bright, colourful windows and welcoming atmosphere are essential: Wallace says the space itself

is an exercise in combatting stigma.

"When people think of stigma campaigns, they think of bus shelter ads and radio spots. The way our storefront is a visible place for people who are engaged in the illicit drug market and seeking as much knowledge as they can, to have that within our communities and be really open about it, that enacts anti-stigma," he says. "We don't feel the need to be hiding services for people who use drugs in the back of social services."

Expanding and evolving

The project continues to evolve. They release weekly and monthly reports on what they are finding in the local drug supply, have partnered with community organizations up and down the Island to offer on-site drug checking pop-ups in their communities, and launched a Vancouver-Island-wide service where people can mail in their samples and check their results online.

"One of the limits of the drug checking project is you have to be able to walk into that storefront to

access the benefits of the service and the research," says Wallace. "We've always had a health-equity objective to make sure that drug checking is going to be effective by operating at a scale that's reflective of the issue."

The Vancouver Island Drug Checking Project also offers many hands-on learning opportunities for students from a wide range of disciplines and experience levels, from grad students doing PhD research to undergrads in a co-op placement.

"Students are able to work on some of the much longer-term objectives of their academic programs and also have a service shift in the community," says Wallace. "They see the challenges that we're trying to work with within the systems of criminalization and stigmatization and how to actually engage in those systems, not just critique them."

While Wallace is grateful for the President's Chair recognition, he says there is still much work to be done.

"I'm really humbled to receive this award. My research goals align with what UVic has outlined in their

strategic plan, which is to be able to engage both locally and globally, to have a role in community as the university, and provide engaged learning and scholarship," says Wallace. "I look forward to when the work many of us are working towards in the Faculty of Human and Social Development, CISUR and other places at the university is less novel and is really part of the university's assumed role in peoples' lives and in our communities."

around the ring

Women Leading Change—Break the Bias

In celebration of International Women's Day, UVic and the Office of the Lieutenant Governor with media sponsor Global BC present Women Leading Change—Break the Bias. This free hybrid event will highlight powerful voices leading change across industries in which women remain underrepresented. Join Her Honour, the Honourable Janet Austin, Lieutenant Governor of BC, and female change-makers as they share their experiences and discuss how we can support, inspire and empower people, and create more equitable access to opportunities in the workplace. March 9 at Farquhar Auditorium and online.

uvic.ca/wlc

United Way prize giveaway

Show your love at home and in your community. Between now and the end of March, UVic employees who sign up for payroll deductions in support of the United Way could be eligible to win amazing prizes including a complementary night at the Hotel Grand Pacific or a \$100 gift card for UVic Continuing Studies. Two lucky winners have already received date-night prizes! Show your local love and sign up for payroll deductions.

bit.ly/22-uway

Victoria Forum rescheduled

The 2022 Victoria Forum, *Bridging Divides: Turf, Truth and Trust* has been rescheduled to August 28–30. In collaboration with the Senate of Canada, the forum will facilitate conversations around bridging economic, social and environmental divides, bringing together policy makers, business leaders and academics and culminating with policy recommendations for political leaders.

The Victoria Forum will be a hybrid event, with five plenary sessions, both livestreamed and in person at UVic's Farquhar Auditorium, and six round-table sessions hosted online. Engage with leaders and change-makers on some of the world's most pressing issues to discuss ideas for a better world. This is a free event, and is open to the public. Registration opens early April.

victoriaforum.ca

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Venn. UVIC PHOTO SERVICES



Pazder. UVIC PHOTO SERVICES

Synchronized spectroscopy: first-of-its-kind link between telescopes reveals a galactic fossil

BY DOROTHY EGGENBERGER

Following the Big Bang, the whole Universe was in a hot, dense state—yes, the lyrics that open *The Big Bang Theory* TV series are true. Hydrogen and helium were produced in the hot, dense conditions of the birth of the Universe. But the heavy metals we’re familiar with today—the iron in our blood, the calcium in our teeth, the silicon in our phones—came later, forming at the cores of stars just after the Big Bang.

The origin of metals and their crucial role in galaxy formation are still a mystery. Similar to the chicken-

and-egg causality dilemma, metals are formed in the cores of stars but stars require metal to form. So how did the Universe go from no metals to having enough metals to allow galaxies to form?

“You had to build up the metals from some generation of stars—we call these first stars—and we’ve never found one,” says Kim Venn, UVic physics and astronomy professor and director of the Astronomy Research Centre (ARC). “We believe they must have formed and disappeared very early on. Trying to find traces of those first stars is a big goal for astronomers right now.”

Venn co-led an international team that found one of these traces—a first-of-its-kind discovery that was published in *Nature* earlier this year. Not only was it a breakthrough for what they found—a star cluster with the lowest concentration of metals ever observed—it was made possible by making two ground-based telescopes work together in a new way.

The galactic fossil, located in the outer reaches of the Milky Way, is an ancient star cluster or stellar stream, named C19, that has a metallicity that’s half of any previously known star cluster. The discovery challenges long-standing theories on early galaxy formation.

Mapping the galaxy

How do you find one standout stellar stream in the vast sea of the Milky Way? You need to know where to look and how to spot it, says Venn.

Scientists use astronomical surveys to build a roadmap to the Universe. Each survey is a map or image of a region of the sky. Venn’s team, the Pristine collaboration, combined the results of two surveys.

That research team includes scientists and engineers at the National Research Council of Canada’s (NRC) Herzberg Astronomy and Astrophysics Research Centre who are adjunct faculty at UVic, along with international astrophysicists who collaborate from locations around the world: Toronto, Europe and Russia.

Together, they search for metal-poor stars in the Galactic halo using the Canada-France-Hawaii Telescope (CFHT) on Maunakea, Hawaii. To start, they designed a filter sensitive to stellar metallicity using spectroscopy. In a way, they were looking for the absence of certain types of light: the weaker the feature, the more metal-poor the object.

Signals in shades of starlight

You may remember dangling a prism in a sunbeam as a kid and marvelling at the rainbow it produced. That, in its simplest form, is spectroscopy. Astronomers use spectrographs to split the light from a star into a rainbow. By examining the rainbow, scientists can identify features of the chemical elements in the stars.

The unique filter designed by Venn’s team examines the dark lines on top of those rainbow of colours. These dark lines, or absorption lines, occur when photons of light are taken out of the spectrum as it passes through the atmosphere of the star. Astronomers can identify

which lines are due to which chemical, and thereby establish metallicity or specific chemical abundances of each star.

“What an amazing thing, isn’t it? Stars that we will never be able to go and touch, that we’ll never be able to send a robot to grab a piece of that atmosphere, and yet we can still figure out their composition from these rainbows, from these spectra,” says Venn.

Using the European Space Agency’s satellite mission Gaia, Venn’s team focused on a group of extremely metal-poor stars that seemed to have a common orbit in the Galactic halo. Unlike regular clusters that are spherical, C19 is arranged along a stream that extends about 20,000 light years from the Galactic Centre at its closest approach and roughly 90,000 light years at its farthest. This group of stars stretches an impressive expanse of the night sky—roughly 30 times the width of the Moon—although it is not visible to the naked eye.

“Most clusters are kind of a ball,” explains Venn, “That makes them gravitationally stable so they last a long time. Streams like C19 are no longer gravitationally stable. To still find them as a stream means that the cluster has been disrupted fairly recently. And by fairly recently, I still mean a couple billion years—but it’s only a couple compared to 13 billion.”

Fibre-focused starlight

While the telescopes we send to space often catch big headlines, it was a new trick to make two Earth-based observatories work together that made Venn’s discovery possible. The revolutionary linkage was proposed by Pristine survey member John Pazder, who led the team that built the unique optical fibre system called GRACES. Pazder, an NRC engineer and UVic alum, is midway through an established career in astronomy and is also studying for his PhD at UVic.

GRACES was a technical breakthrough to solve a specific problem for the team. The Gemini Observatory has one of the largest telescopes on Maunakea, but the CFHT (also on Maunakea) has one of the best optical spectrographs. GRACES connects the two, using an optical fibre to focus starlight collected at Gemini and directing it to the spectrograph at CFHT. This is the first time an instrument in one observatory has been successfully used by another observatory, effectively allowing instruments to be shared between the community

of telescopes on Maunakea.

“The team at NRC is very proud to have been able to design and build GRACES,” says Pazder. “It was a very challenging project and required the development of new ways of working with the optical fibre to prevent the loss of the quality of the light. Dr. Venn’s work shows that we were not only able to succeed at GRACES, but we were able to produce a world-class instrument capable of cutting-edge research.”

The concept was decades old, but never successfully performed—until now.

“I dare say if it weren’t for John’s tenacity and ingenuity, GRACES would never have come into being,” recalls then-CFHT Executive Director Doug Simons. “Toward the end of the development of the fiber system . . . I distinctly recall reading John’s reports with amazement. He was getting exceptional throughput with the 270m fiber . . . and the performance of injection optics was amazing. I remember thinking, unless I don’t understand how this system really works, when we get it on the sky, it basically has to work as predicted. And to everyone’s delight, that’s exactly what happened.”

Venn was among the first researchers to work on spectra taken with GRACES, the first to publish research with that data, and is continuing her work using it as part of a Gemini Observatory Large and Long Program. She and Pazder have been working together a long time—and will continue to do so as they look for similar traces of the early Universe.

The future of discoveries about the Universe’s distant past

“In astronomy we often say when it comes to objects there’s zero, one, or many. So far all we’ve done is gone from zero to one,” says Venn, “Now that we know what to look for and how to find them, we want to find more.”

Her team is already investigating another stellar cluster. They’re also in the process of installing a new high-resolution spectrograph in Gemini South in Chile. Once launched, the team will search for similar stellar streams in the Southern Hemisphere.

The discovery of C19 will also foster follow-up projects. UVic cosmologist Julio Navarro, for example, has started working with his international collaborators, postdoctoral researchers and students on modelling the origins of C19 and the potential implications on our understanding of dark matter.

EQUITY ACTION PLAN

Calling all members of the UVic community!

Join the conversation on equity, inclusion, diversity and anti-racism. Share your stories, experience, advice and recommendations to build an Equity Action Plan that will create long-lasting and meaningful change.

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Scientists link 2021 BC floods to human-induced climate change

The rain and flooding that struck southwestern BC in November were devastating and deadly—as well as historic.

And human-induced climate change has made it much more likely that this type of disaster will happen again, according to a report from the University of Victoria’s Pacific Climate Impacts Consortium (PCIC), in collaboration with scientists from Environment and Climate Change Canada (ECCC).

The powerful atmospheric river that made landfall on Nov. 14, 2021 led to floods and landslides that killed five people and cut off all road and rail routes between Metro Vancouver and the rest of Canada—the costliest natural disaster in the province’s history.

The study, “Human Influence on the 2021 British Columbia Floods,” has not yet been peer-reviewed. Nevertheless, it examines historical data and states that atmospheric river events of this magnitude are approximately one-in-10-year events in the current climate of the region, and they’ve been made at least 60 per cent more likely by the effects of human-induced climate change.

And while the two-day precipitation total is considered a one-in-50-



Flooding on BC Highway 11, November 2021. PHOTO BC MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE

to-100-year event, the probability of similar rainfalls has been increased by roughly 50 per cent by human-induced climate change.

Using multiple simulations with a hydrological model—for instance, comparing streamflows around the Fraser River based on different temperatures—the researchers estimate that the probability of extreme streamflow events such as those that caused damage in multiple BC

communities has been increased by human-induced climate change to between two to four times their probability in the 1950s.

The goal of the report, conducted by a team of 14 researchers, is to understand how last fall’s “compound extreme event” happened and what role human-induced climate change played, and to motivate efforts to increase climate resiliency because of the prospect of more frequent such

events in the future.

“The lesson from this is that infrastructure such as roads, culverts and bridges that was designed in the 1970s and 1980s considering the climate at the time is now exposed to greater climate hazards than it was designed for,” says co-author Francis Zwiers, who is director of PCIC.

“We need to adapt the infrastructure to reduce the risk of damage,” Zwiers says. “We also need to take

into account how climate will continue to change over the lifetime of the infrastructure.”

PCIC is a regional climate service centre at UVic that conducts studies on the impacts of climate change and climate variability in the Pacific and Yukon region, with its work providing climate stakeholders the information they need to develop plans for reducing the risks associated with climate change.

HOUSING AFFORDABILITY

UVic housing forum convenes students, MLAs

UVic is working with government partners to take action to address an ongoing shortage of affordable rental housing for its students with hundreds of new residence beds in two new buildings set to open this year and next.

The 400 new beds opening in September of this year—plus almost the same number set for 2023—are on top of about 2,100 existing in UVic residences.

Still, with more than 22,000 students—about three quarters of them from outside the Victoria region—the university recognizes the challenges students encounter every year in finding accommodations given the low vacancy rate in Greater Victoria, says Kevin Hall, UVic’s president and vice-chancellor.

This past September was especially difficult for UVic students, with many scrambling to find places to live as more returned to on-campus learn-

ing while facing rising rents and low vacancy rates.

“Victoria is not alone in experiencing these dynamics as there is a low vacancy rate right across the country. We are working with partners like the provincial government to find solutions that help our students and other community members,” says Hall. “Stable and affordable housing is a critical component to success for our students, for our community, for the region. Finding solutions to housing challenges here in the Greater Victoria region, across BC and beyond will take an ‘all-hands-on-deck’ approach.”

As part of UVic’s ongoing work to help address housing affordability, UVic hosted a town hall on Feb. 3 to discuss these issues. Hall welcomed the Honourable David Eby, attorney general and Minister Responsible for Housing, and the Honourable Murray Rankin, the MLA for Oak Bay-Gordon Head, and minister of Indigenous

Relations and Reconciliation, during a virtual town hall on provincial policy regarding housing. The event is the first in a series of collaborations between the university and Rankin’s constituency office in which key policymakers such as Eby discuss issues of importance to UVic students.

Eby and Rankin responded to questions covering topics such as student housing on university campuses, rental housing supply in surrounding communities, and whether the province would step in if municipalities aren’t meeting targets for housing growth.

Supply and demand

In response to questions about housing supply, Eby highlighted challenges related to supply as seen a migration of citizens from across Canada, while supply and purpose-built rentals have not kept pace with a growing population.

He noted it’s crucial to have students, community groups and levels of government working together toward housing solutions.

In addition, Rankin added the province expects municipalities to approve needed housing, including rentals and affordable housing, favoring Oak Bay legalizing secondary suites that help with housing supply for nearby UVic. Both he and Eby emphasized the role public transit can play in the affordability crisis.

Asked whether the province would consider changing laws affecting how cities approve development in areas with single-family housing, Eby indicated his preference to work alongside municipalities to increase housing supply and address affordability.

“Finding ways to encourage municipalities to do this voluntarily is where we’re at right now,” says Eby.

Support network

UVic has supported its students with housing in a number of ways. For example, last year, UVic was one of a handful of Canadian universities in Canada that paid the registration fees for landlords who list their properties or rooms on a site dedicated to matching students with landlords.

Hall noted some in the university community suggested temporary solutions such as installation of modular housing, conversion of gyms or use of local hotels but added these measures would take months of planning and infrastructure development, and would be prohibitively expensive while not helping students in immediate need.

While the project to add capacity to campus housing is moving ahead as quickly as it can, the university continues to look for other expansion opportunities.

Provost’s Awards in Engaged Scholarship



Dr. Julia Baum
Department of Biology

Julia Baum’s research program focuses on advancing knowledge of how climate change is impacting our oceans, as well as ocean climate change solutions. She believes that scientists have a moral responsibility to communicate their research beyond the academy and embodies these beliefs. She conducts world-class research in partnership with local and global communities and conservation practitioners through communityengaged teaching and mentorship with students and post-doctoral fellows. In Baum’s words, “Engaging with the public and policy-makers on climate change is critical for insuring that we have an informed society, so that we can make better decisions to advance climate action in Canada and beyond.”



Deborah Curran
Faculty of Law and School of Environmental Studies

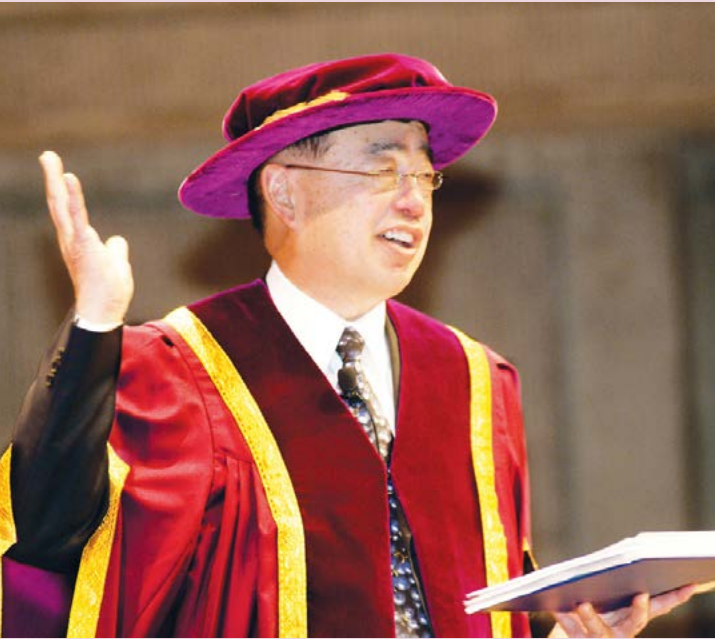
As the executive director of the Environmental Law Centre, Deborah Curran is an interdisciplinary scholar who focuses on environmental health outcomes related to drinking water protection, watershed governance, mining law and conservation. Her outstanding leadership is evident in the daily operations of the centre, where she and other staff mentor students in the provision of legal services to more than 30 community-based organizations and First Nations clients each year. Curran’s community-engaged research builds relationships with environmental, community and First Nations organizations tackling complex issues of Indigenous and colonial water law. She exemplifies her commitment to community-engaged teaching through innovative field courses that focus on understanding Indigenous-settler reconciliation.



Dr. Brian Thom
Department of Anthropology

Brian Thom’s work, grounded in partnership with Coast Salish communities, addresses issues of Indigenous territory, knowledge and governance. These issues are the heart of some of the most pressing and contentious political concerns today. He is committed to bear witness to Indigenous autonomy and lend a hand through collaborations with Indigenous community members, Elders and knowledge keepers. Through this work, Thom shows a seamless integration of research, teaching and service. His Commemorating Ye’yumnuts project at the Quw’uts’un ancestral site and his partnership with the WSÁNEĆ community in Indigenous municipal land use planning are examples of his willingness and dedication to disrupt outmoded thinking compassionately.

UVic Chancellor Ronald Lou-Poy



Lou-Poy presiding over a 2008 convocation ceremony.. UVIC PHOTO SERVICES

It is with deep feelings of loss and sadness that the university community marks the passing of Dr. Ronald Lou-Poy, who served as the ninth chancellor of the University of Victoria from 2003 to 2008.

Lou-Poy’s commitment to the community—on and off campus—helped build bridges locally, nationally and abroad. During his time as chancellor, he embodied the university’s expanding contributions to society as well as its growing international prominence and connections. As chancellor, and as a prominent lawyer whose vision of community service was broad, he helped bring UVic degrees to Inuit students enrolled in a special UVic Law program in Iqaluit, Nunavut, and conferred honorary degrees in China’s Great Hall of the People in Beijing.

“Ronald Lou-Poy’s contributions to the university—in nurturing community connections and cultural bridges, always aligned with the values of service, justice and philanthropy—helped shape what UVic has become today,” says UVic President Kevin Hall. “His passing is a great loss to us. And it’s also a reminder of the great impact that individuals can have on the world when they commit themselves to making the world a brighter place. Ronald Lou-Poy was a shining example of that spirit.”

A senior partner in the Victoria law firm of Crease Harman & Company, as well as Queen’s Counsel, Lou-Poy was already a significant figure in the UVic community before becoming the university’s chancellor. A graduate of UVic’s forerunner, Victoria College, Lou-Poy had extensive and ongoing involvement with the university, including two terms on the UVic Board of Governors (1972-74 and 1992-95) and as an original director of UVic’s Innovation and Development Corporation—a commercialization initiative that brings innovative technologies to market, now operating as UVic’s Research Partnerships and Knowledge Mobilization unit.

In recognition of his dedication to community service—especially in the areas of arts, culture and education—Lou-Poy was awarded an Honorary Doctorate of Laws from UVic in 2000.

Lou-Poy was also a philanthropist, giving and promoting a culture of giving among his family, friends and the many communities in which he moved. His family supported construction of UVic’s Harry Lou-Poy Infant and Toddler Child Care Centre, named for Ron Lou-Poy’s late father, and created the May and Ron Lou-Poy Fund of Excellence in the Faculty of Law.

During Lou-Poy’s two terms as UVic chancellor, in addition to performing other duties, he presided over more than 70 convocation ceremonies, awarding more than 25,000 UVic degrees, certificates and diplomas.

He appeared on the other side of the stage, as an honorand, almost as frequently. In 2007, Lou-Poy received Leadership Victoria’s Lifetime Achievement Award, honouring outstanding long-term service in community leadership roles such as philanthropy, innovation, mentoring and career achievement. It was a fitting recognition for his work, including positions with the Kiwanis Club, United Way, Victoria Crime Stoppers and the Chinese Consolidated Benevolent Association. He was also made a member of the Order of Canada in 2003.

In his last year as UVic chancellor, Lou-Poy received a Golden Mountain Achievement Award from the Victoria Chinese Commerce Association, celebrating the achievements and contributions of BC’s Chinese Canadian population during the province’s sesquicentennial year.

Bringing the Witness Blanket to a global audience

BY JOHN THRELFALL

As a multi-disciplinary Kwakwaka'wakw and Coast Salish artist, Carey Newman (Hayalthkingeme) wears many hats: master carver, filmmaker, author, public speaker and, in his new role in the University of Victoria’s Department of Visual Arts, he is the inaugural Impact Chair in Indigenous Art Practices at UVic. But he’s also the child of a residential school survivor—a hard truth that inspired the creation of his Witness Blanket, a large-scale art installation which stands as a national monument recognizing the atrocities of the Indian residential school era, honouring the children and symbolizing ongoing reconciliation.

Recently appointed as the first Impact Chair in Indigenous Art Practices, Newman took his message of truth and reconciliation to an international audience in October 2021 when the Witness Blanket was featured as part of Canada’s week-long “Guest of Honour” cultural programming at the Frankfurt Book Fair.

As well as having images of the Witness Blanket projected on a building façade in Frankfurt’s Romberg Plaza, Newman hosted a screening of his documentary, *Picking Up the Pieces: The Making of the Witness Blanket*, at the Frankfurt Film Institute.

Newman says, “Seeing an image of the Witness Blanket projected upon a building larger than life—30 feet by 100 feet—and having the opportunity to screen the documentary there and have a question-and-answer period



The Witness Blanket, projected onto a building façade in Frankfurt’s Romberg Plaza.

afterwards with people from Canada and Germany...those are moments I’ll carry with me for a long time, and hopefully having these conversations internationally will play a role in helping us to see ourselves differently here at home.”

As the largest gathering of publishing industry professionals in the world, the Frankfurter Buchmesse was an ideal opportunity for Newman to showcase not only the various incarnations of the Witness Blanket—including the documentary and the accompanying book, *Picking Up the Pieces: Residential School Memories and the Making of the Witness Blanket*

by Orca Book Publishing—but to also engage in conversations around the importance of the work.

“The way that Germany as a country approaches their history of genocide is very present, very forward. As Canadians, we have something to learn from that,” Newman says.

“We often wonder, ‘When can we move forward?’ There seems to be a rush to get to the ‘reconciliation’ part of the truth-and-reconciliation process, but the ongoing confirmation of unmarked graves at residential schools is a reminder that we are still firmly in the process of uncovering the ‘truth’ of genocide in Canada.”

Framing Agnes: from Sundance to UVic

BY PHILIP COX

A special preview of the feature-length film *Framing Agnes* is being hosted by the University of Victoria on March 17, ahead of its UK and Canadian premieres this spring.

Directed by gender studies professor Chase Joynt, *Framing Agnes* held its world premiere in January at the Sundance Film Festival, where it received the NEXT Innovator and Audience Award prizes and garnered wide critical acclaim.

The film draws from never-before-seen case files of patients from an infamous UCLA study about sex disorders in the 1950s and brings together an all-star cast of transgender actors to resurrect the untold history of a group who redefined gender in the mid-twentieth century.

Two back-to-back screenings will be held at Cinecenta on the evening

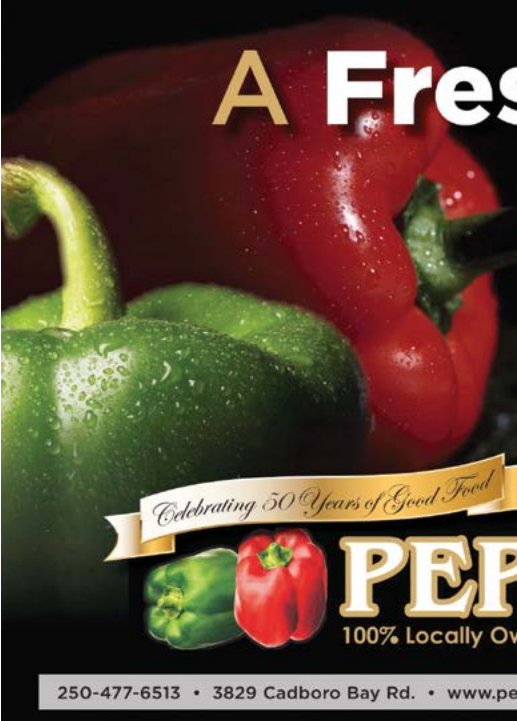


of March 17, each followed by a live Q&A with Joynt.

“We’re excited for this opportunity to celebrate the success of *Framing Agnes* on the international stage with a special screening at our own campus theatre,” says Alexandra D’Arcy, humanities associate dean research.

This event is organized by the UVic Faculty of Humanities and Office of the Vice President Research and Innovation, with support from Ceremonies and Events, External Relations, the Department of Gender Studies and Cinecenta.

Tickets: cinecenta.com



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School of Music debuts new community collaborations

BY JOHN THRELFALL

There’s no question the COVID era has had a devastating impact on the arts industry, but it has also provided time and space for bold new creative collaborations. One such initiative is a new campus/community project involving the School of Music, Ballet BC and Dance Victoria, which sees three teams of choreographers and dancers create a triptych of new works set to brand new music by a trio of faculty composers.

After an initial Zoom meeting in late 2021 that saw music professors Patrick Boyle, Christopher Butterfield and Anthony Tan connect with Ballet BC’s Justin Rapaport, Livona Ellis and Zenon Zubyk (respectively), the newly formed composer/choreographer teams then set to work, with the composers working in totally different musical styles and the choreographers each assembling their own team of dancers. The resulting pieces will debut at an intimate workshop at the Dance Victoria studios on March 13, moderated by Fine Arts Dean Allana Lindgren.

“Collaborative projects are challenging, but they’re definitely rewarding,” says Tan. “It’s a very different practice: in some ways, you have to let go because it’s not just about your music, it’s about the work as a whole.”

Tan, who recently won the Canada Council’s 2021 Jules Léger Prize for New Chamber Music, is creating a roughly 15-minute electronic composition which samples the very sounds of the four dancers themselves as the basis for his piece.

“I’m interested in the sound of people doing things, if that makes sense: in terms of musical composition, I often work with ancillary sounds that are apart from the primary instrument and are then electronically distorted, so you can’t really tell what it is anymore,” he explains. “In dance, I’m inspired by the sounds of people dancing—their leaps, their breath-



Ballet BC choreographer Livona Ellis (centre). PHOTO: ARIANE LAGET

ing, their feet hitting the floor—so I wanted to explore that idea.”

For Ballet BC’s Ellis, this is the first time she has worked directly with any composer—let alone Butterfield, who will be performing live onstage alongside her three dancers for their 12-minute piece. “It’s interesting because combining two artistic voices can create endless possibilities—or can end in stifling both artists’ expression,” she says. “I feel grateful that Christopher has been so supportive and so open to trying everything. It has allowed me to be more clear about my direction.”

That’s a sentiment echoed by Tan in his work with choreographer Zubyk. “The challenge and joy of interdisdisci-

nary work is very much the process,” he says. “Being a composer is a lot like being a playwright: you’re often locked away on your own until you give your piece to the musicians, and only then do you finally hear it. But this is a collaboration with both a choreographer and dancers, so they’re improvising based on ideas and the piece just organically grows. When a new piece of music is involved, there’s always a certain amount that’s unknown . . . a good deal of delayed gratification is involved.”

Ellis—who has previously only choreographed to pre-existing music—is excited by this new approach. “It has been really wonderful to get to know Christopher and his musical history,”

she says. “I could listen to him talk for hours; he has such a vast knowledge of music, both in his academic and lived experience . . . I was interested in seeing how our exchange of ideas would influence my creative vision and what kind of balance we would find. Having the sound develop after the movement has challenged me to understand rhythm, timing and punctuation in a different way, and has pushed me to explore my choreography with a different lens.”

For both Tan and Zubyk, this project offers an opportunity to break down the walls between performers, audience and the artists themselves. “It’s been interesting to do it all remotely—there’s been a lot of back and

forth because we haven’t been able to get in the same room very often,” Tan says. “I’m very curious to see how it all comes together.”

Much like a campus/community Venn diagram, finding common ground is very much at the heart of this project, whether between the composers and choreographers or the presenting partners themselves.

“I’m really excited to work with Ballet BC and grateful for this opportunity,” says Tan, who has previously composed for dancers in both Calgary and Montreal. “I’m happy that an academic institution can collaborate with a professional company like this—it’s a good way to bridge the different fields.”

New podcast aims to break the stigma of dementia

BY SUZANNE AHEARNE

“Call to Mind” is a new podcast series from the University of Victoria about love and memory loss, recorded by people living with Alzheimer’s disease and other forms of dementia. The four-episode series launched in February on all podcast apps including Apple Podcasts and on the website *CalltoMindPodcast.com*.

Hosted and led by Debra Sheets, a nursing professor and researcher with the Institute on Aging and Lifelong Health at UVic, the series features intimate audio diaries and conversations about the rewards and challenges of caregiving, the impacts of isolation, finding joy by living in the present and staying in love when everything else is changing. The eight people who shared their stories are all current or former members of the Voices in Motion choir, a professionally led dementia choir co-founded by Sheets.

Sheets says the participatory nature of the project was vital to its spirit and intent. Research assistants at UVic provided technical support to storytellers who used their own iPads and smart phones to make recordings in their own homes during the first 18 months of the pandemic. Sound artist and producer Jenni Schine then created four 30-minute narratives from the hours of audio clips each pair submitted, with sound design by David Parfit.

“The caregivers in the podcast provide a starkly honest glimpse

into the challenges but also the rewards of caregiving,” notes Sheets. “There are poignant moments that are so precious and fleeting. There are struggles, crises and moments of exhaustion. It is in these personal stories that we can see the growing strain we are placing on caregivers. We must find another way and I hope this podcast helps move that conversation forward.”

Sheets wanted to address what she calls the “narrative scarcity” of older voices in the media by providing agency to people with memory loss and to their family caregivers, to “move the narrative away from one of tragedy, continuous decline, caregiving burden and fear, to one in which we see joy and love as well.”

BC Seniors Advocate Isobel McKenzie says, “anyone who has been a caregiver to their loved one knows it is a physically and emotionally difficult job being the friend, confidant, housekeeper, cook, scheduler, driver,

social support and more for what is often a 24/7 commitment. The Call to Mind podcast series reveals the messy and fulfilling side of caregiving through real stories that are inspiring, uplifting and insightful.”

More than half a million Canadians are currently living with Alzheimer’s disease or a related form of dementia. With a rapidly aging population, that number is projected to double by 2031. Over the next 20 years, the number of older Canadians with dementia requiring assistance will double.

Family caregivers provide 75 per cent of the care needed by older Canadians living at home. Every day, about one in four Canadians provide care for a family member, friend or neighbour. There are an estimated one million caregivers in BC and eight million across Canada.

“While caregiving for older adults can be rewarding,” Sheets notes, “it is increasingly demanding, complex



Sheets. UVIC PHOTO SERVICES

and stressful. The average informal caregiver spends 19 hours a week on caregiving duties, and one in 10 provides more than 30 hours of care per week.”

One of the storytellers is Brenda Brophy who, six months into the pandemic, brought her 100-year-old mother Dorothy out of long-term care to look after her at home. “For those not yet touched by dementia,” Brophy says, “I hope they hear our stories, find empathy and understanding for those impacted by dementia and for those who are caring for elders. And I want people to see and hear how seniors like my mom aren’t used up, or empty shells. They are still in there and they matter.”

Saskia Sivananthan, the chief research and knowledge, translation

and exchange officer at the Alzheimer Society of Canada adds that the COVID-19 pandemic is disproportionately impacting people living with dementia in Canada, completely disrupting their daily lives, isolating them socially and increasing fatigue and burnout for their family caregivers. She says, “The Call to Mind podcast series illustrates the unique challenges facing these families right now, while also underlining the hope that is present. It’s essential their stories and voices are heard.”

This series was made possible by UVic, with funding from the Social Sciences and Humanities Research Council, the Alzheimer Society of Canada, the Alzheimer Society of BC, Michael Smith Health Research BC and BC SUPPORT Unit Island Centre.



The Call to Mind podcast series reveals the messy and fulfilling side of caregiving through real stories that are inspiring, uplifting and insightful.”

— BC SENIORS ADVOCATE ISOBEL MCKENZIE

A tiny delivery system for biomedicine

Materials scientist tests use of nanoparticles in cancer treatment

BY DOROTHY EGGENBERGER

Imagine a tiny delivery truck that could carry therapeutic cargo directly to a tumour cell. University of Victoria materials scientist and Canada 150 Chair Ian Manners and his research group are aiming to build these tiny structures: special nanoparticles that are able to navigate the bloodstream, targeting cell receptors that are characteristic for tumour cells—and deliver anticancer agents.

This is a vital area in health research and application, says Manners, because the most common cancer treatments outside surgery are chemotherapy and radiation: effective, but invasive with high risks of side effects. Another treatment option may be just around the corner with exciting developments in biomedicine.

Cancer remains the leading cause of death in Canada, with an estimated 229,200 Canadians diagnosed in 2021—84,600 of which were terminal cases.

Manners is exploring the potential application of nanoparticles, particles with a size 1,000 times less than the width of a human hair. The Manners Research Group has investigated this area for more than 20 years. Over this period, they discovered and then developed crystallization-driven self-assembly (CDSA) into a powerful new method for creating nanoparticles with well-defined shapes and controlled size. CDSA is now used by a growing number of scientists worldwide.

Since relocating to UVic in 2018, Manners’ research group has explored how best to use CDSA for applications of global importance including health. Manners explains: “Using CDSA we can attach functional groups to nanoparticles that permit tracking and targeting as well as other properties.”



Manners. UVIC PHOTO SERVICES

Manners’ team has recently set out to create a new delivery system for cancer treatment. Similar to planning a mail delivery, the team had to create a vehicle equipped to carry the anticancer agent, a navigation system to reach the correct cell and a mechanism to ensure the package is received—like postal boxes in a condo building.

One of the most well-studied active targeting agents is folic acid (FA), with several FA conjugates in clinical trials. FA will target folate receptors, which are overexpressed in numerous types of cancer cells, and have represented a significant target for the delivery of tailored therapeutics. Manners group found that nanofibers armed with FA were absorbed by the target cells within 30 minutes, whereas their counterparts without

FA were not able to enter cells.

Manners leads a team of 22 co-workers at his research lab that focuses on advanced materials. They are also working on a range of other projects. “Using CDSA we can prepare nanofibers that absorb sunlight and funnel energy to a site where useful chemical processes can be performed, such as splitting water to provide hydrogen gas,” says Manners, “This is a carbon-neutral fuel, an alternative to fossil fuels which are the major cause of climate change.”

Other projects target new polymers that are able to “self-heal” and repair themselves when damaged, and also materials that are able to generate high-resolution patterns on silicon chips for applications in new generations of computers.

Larger than an atom and smaller

than a fine particle, nanoparticles range between 1 and 100 nanometres. Because of their small size, nanoparticles have a very large surface area to volume ratio when compared to bulk material—like powders, plate and sheet—and so possess unexpected optical, physical and chemical properties.

The Manners group is interested in the synthesis and applications on length scales from 1 nanometre to 100 microns. Their focus is the development of new synthetic approaches to functional molecules, polymers and materials.

Their diverse and international group typically operates at a level of around 20 members, including mainly postdoctoral researchers and graduate students, but also permanent staff, undergraduates and visiting scientists.

The group currently employs the largest number of postdoctoral researchers of any UVic lab.

Since relocating to UVic in 2018, the Manners group has published around 85 articles in venues that include prestigious *Science* and *Nature* journals. Their research has been cited over 12,000 times in the last four years alone.

“Having exceptionally talented, motivated and ambitious group members ensures that I always have many draft manuscripts containing exciting science to work on,” says Manners.

Former group members have found positions in industry and government labs, as well as in teaching and as patent lawyers. Well over 50 now hold professorial academic positions worldwide in Canada, the US, Europe, Asia, Africa and New Zealand.

DAY IN THE LIFE

Science Stores: a supply-side success

BY DOROTHY EGGENBERGER

It’s 9:30 a.m. when Sara Joulai Zonouz enters the Bob Wright Centre, heading upstairs to the Look Laser Lab. She’s a chemistry graduate student examining a new molecule developed by the Chernick Group. The Look crew casually calls it “cheeto dust” because it resembles the orange film dust that Cheetos leave behind. Zonouz plans to test the molecule’s spectra matter in different solvents, starting with toluene and—*oops, the lab is out of acetone!*

It’s time to place an order with Science Stores.

Science Stores is an on-campus supply store serving UVic faculty and staff that stocks more than 1,000 items, including chemicals, equipment and stationery. The store also handles equipment repairs and shipping and receiving for research partnerships. It’s an essential cog in the machine of science at the university.

Supervisor Rob Iuvale has led the team of four storekeepers since 2003 and plans to stay awhile yet.

“It’s probably the nerd in me,” says Iuvale. “I’ve always appreciated science fiction, so growing up I figured I would have some kind of role in science or engineering or space.”

His childhood daydreams weren’t

too far off—Iuvale taught high school science for many years before coming to UVic’s Faculty of Mechanical Engineering, eventually moving to Science Stores. “I’m so happy to contribute to science in some capacity,” he says.

It’s a sentiment shared by all members of the team, four of whom have a background in science.

Chemistry alumna Kara White has been with Science Stores for 14 years. “I like knowing that I can help research. That’s why I’m here,” she says. White also taught high school science, and was a TA at UVic before joining the team.

Fellow chemistry alumna Christine MacInnis Rowan joined the team two years ago. She left Victoria to work in environmental testing labs—and was excited to find a reason to come back. “The community here is great: good energy, good people, everyone is really helpful and friendly,” says MacInnis Rowan, “and working in the Faculty of Science is a lot of fun.”

“I’m also an alumni and apparently I’m never leaving,” jokes Stephanie Puckett. After graduation, she stayed on campus for technician work in biochemistry and microbiology until joining Science Stores four years ago.

“It’s kind of nice that we have different focuses,” says Puckett, “I’m always like ‘Kara—chemistry—I need help!’



The Science Stores team (L–R): Kara White, Ian Sandercock, Christine MacInnis Rowan, Stephanie Puckett and Rob Iuvale. UVIC PHOTO SERVICES

We can draw on each other’s strengths.”

Last man standing Ian Sandercock worked for one of UVic’s science vendors before joining the team three years ago. He doesn’t have a BSc, but when nudged by Iuvale admits to touring with a rock band in Europe and across Canada. “That was a different life,” says Sandercock nonchalantly.

“I like working here. It’s a beautiful campus. I like everybody I work with—so yeah, good place,” he says.

On average, the team of five receives 50 boxes a day. The contents vary, especially when new research projects are on the move—the most memorable being UVic’s partnership with Pani Energy to track COVID-19

in wastewater across BC.

“Scientists here jumped on that project,” remembers White. “We were getting coolers coming in two or three times a week.”

Just a day in the life of the Science Stores team helping move things along. And yes, Zonouz got her acetone.