Co-op partnerships build careers and drive successful business

Recognizing this year’s top co-op employers

Each year, UVic recognizes employers who have gone above and beyond to provide co-operative education learning experiences for UVic students. UVic co-op employers have supported more than 100,000 co-op placements since the co-op program launched in 1976.

We want to acknowledge all co-op employers for their extraordinary contributions to the UVic experience. Here are this year’s award winners.

Rocket Lab
International employer

The sky’s the limit with Rocket Lab, this year’s winner of the International Co-op Employer of the Year. As a global leader in rocket and satellite design and manufacturing, spacecraft components, software and launch services, it’s no surprise that the multinational company is invested in the next generation. They’re an employer of choice for UVic co-op students looking to contribute to a world-changing industry.

UVic’s relationship with Rocket Lab began in 2013 when three mechanical engineering students won first place in an international rocket building competition. Spurred by this experience, one of these students reached out to Rocket Lab to set up a co-op work term in the world of rocket science, and a partnership was born.

Since 2014, 13 software and mechanical engineering co-op students have completed a total of 23 work terms with Rocket Lab; this trend of staying with the company for a second work term has gone above and beyond to provide co-op placements since the co-op program launched in 1976.

BY EMMA ULVELAND

52% of UVic co-op students are offered a job before graduation

Wave energy project on Nootka Island receives $1-million grant

BY IVAN WATSON

UVic’s Pacific Regional Institute for Marine Energy Discovery (PRIMED) has received one of 10 million-dollar grants under the 2022 TD Ready Challenge. PRIMED is working towards the development of a first of its kind renewable energy microgrid, incorporating a wave energy device at Yuquot on Nootka Island, a National Historic site and traditional home of the Mowachaht/Muchalaht First Nation (MMFN), located off the west coast of Vancouver Island.

The funding will assist communities disproportionately affected by climate change in the transition to a low-carbon economy. TD Bank Group announced this week PRIMED is the only recipient from British Columbia.

The project will be at the cutting edge of renewable energy system development, support the Nation to achieve its long-held dream of re-occupying Yuquot after being forcibly relocated decades ago, and contribute to reconciliation.

“This is such an exciting, pure and wonderful example of an Indigenous-led, community-based resurgence through clean energy,” says PRIMED Director Brad Buckingham, who is also the chair of UVic’s mechanical engineering department. “The idea of reinvigorating a community and helping them return to their traditional lands is powerful. You can’t undo history, but you can change the future. This project represents a symbolic changing of course where all of us are working together to support the Nation to go back to their rightful home in Yuquot.”

Technological solutions to support self-determination

Yuquot is located on a world-class wave energy supply and the Nation is highly motivated to pursue clean energy solutions that improve quality of life, facilitate economic development, and support self-determination. As keepers of the land, they want to demonstrate technological solu-
Sea urchins are on the move, and the ‘Blob’ is partly to blame

New research has uncovered a change in behavior of deep-sea fragile pink sea urchins off the south coast of Vancouver Island that is linked to persistent impacts in the Pacific Ocean off North America between 2013 and 2016.

The warmer-than-normal surface temperature of the Pacific Ocean inhibits a natural ocean mixing process called upwelling, whereby nutrient-rich water from deeper layers of the ocean wells up to surface waters, which allows photosynthesis and photosynthesis and photosynthesis to occur.

This upwelling process fuels healthy populations of sea urchins, which in turn feed on kelp forests and provide habitat for a diverse array of marine life.

However, when upwelling is suppressed by warmer-than-normal ocean conditions, sea urchin populations can expand, leading to declines in kelp cover and habitat loss for other marine species.

Researchers from Memorial University of Newfoundland (MUN) and UVic found that the 2013-2016 “ Blob” — a period of unusually warm ocean conditions — was associated with a dramatic increase in the abundance of deep-sea urchins off the coast of British Columbia.

The researchers found that the urchins moved up to shallower waters as a result of changes in ocean currents caused by the Blob, which is a large-scale oceanic anomaly characterized by unusually warm and salty water.

The study, published in the journal *Nature Climate Change*, is the first to link specific ocean conditions to changes in deep-sea urchin abundance and distribution.

**What are urchins and why are they important?**

Sea urchins are small, porcupine-like marine animals that are covered in spines. They are important ecological indicators because their populations can increase or decrease in response to changes in ocean conditions.

**What is the Blob?**

The Blob is an unusual oceanic event that occurred in the Pacific Ocean during the late 2010s. It was characterized by unusually warm and salty water that persisted for several years, leading to changes in ocean currents and temperature.

**How did the researchers study urchin abundance?**

The researchers collected data on urchin abundance using a variety of methods, including visual observations and electronic sensor arrays deployed in the ocean.

**What did the researchers find?**

The researchers found that the abundance of deep-sea urchins increased dramatically during the Blob event, with urchin abundance reaching unprecedented levels.

**What are the implications of these findings?**

The findings highlight the importance of understanding ocean temperature and circulation patterns, as they can have significant impacts on marine ecosystems and biodiversity.

**What is the role of Ocean Networks Canada (ONC)?**

Ocean Networks Canada (ONC) is a long-term, real-time monitoring system that collects data on ocean conditions and marine life in the Canadian coastal and oceanic environment.

**What are the next steps for this research?**

The researchers are currently analyzing additional data to further understand the factors that contributed to the increase in urchin abundance and to assess the long-term impacts of the Blob event on marine ecosystems.

**How can we support ocean conservation efforts?**

Supporting ocean conservation efforts can be achieved through a variety of means, including supporting research and monitoring programs, advocating for policy changes, and participating in community-based conservation initiatives.

**For more information:**

Ocean Networks Canada (ONC) - www.oceannetworks.ca

Ecosystems Canada - www.ecosystemscanada.ca

Canadian Foundation for Innovation - www.cFI.ca

**References:**

1. *Nature Climate Change*
2. *Science Advances*
3. *Nature Geoscience*

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Ocean Networks Canada (ONC) - www.oceannetworks.ca
No one left behind: equity in sustainable planning

BY ALF WILSON

Oil sands industrial activity, like any large-scale industrial development, implied the sacrifice of the surrounding region. The people who live in those regions, and acclimated around the world, want to know exactly what the changes are in order to help support mitigation and minimize those impacts.

UVic researcher Lionel Lopez has been working on a project funded by the Post-Doctoral Fellowship to conduct Indigenous-led environmental monitoring with the Chipewyan Prairie Delta and Cold Lake First Nation. Their goal is to document long-term human-mediated ecosystem changes in lakes affected by oil sands industrial activity in northern Alberta.

"I'm excited by the potential of continuing Indigenous knowledge and ways of knowing within Western sciences, like Indigenous ways of understanding, to provide a more comprehensive understanding of ecosystem changes," says Lopez. "This project will provide DNA-based monitoring and training, supporting the Indigenous partners to have first-hand and direct information on the impacts of oil sands on their territories within their territories.

"From my personal perspective, these partnerships support exceptional cross-sectional science that intersected research that informed applied conservation and management issues relevant to Canada. The two-year fellowship consists of a $44,000 stipend and a $15,000 annual travel and research budget.

"I am deeply invested in promoting equity in conservation science. We need to move towards inclusivity and ensure we provide a sense of belonging when setting conservation priorities," adds Lopez. "This project expands on Indigenous knowledge and builds partnerships with local communities to set long-term research goals for monitoring changes within their territories. In my little ways, I hope to contribute to providing a sense of belonging for everyone with a stake in enhancing monitoring and conservation planning."

Lopez works with UVic's Karen Cassilis-Rhodes, whose foundational work has transformed the approach to using DNA in assessing the health of plants and animals — biodiversity changes.

"In DNA-based monitoring, we can assess long-term ecosystem dynamics, biodiversity, and human health. DNA-based monitoring provides an ongoing record across time, such as lake ping deeper into the past," says Cassilis-Rhodes.

"DNA-based monitoring can help us reconstruct long-term ecosystem dynamics. It is also useful to assess the health of the environment and biodiversity changes. This project is particularly useful in assessing the impacts of oil sands development."
What do humpback whales eat in the depths?

A new study by researchers at UVic suggests that humpback whales in the Salish Sea are eating a lot of "crap" over the past several years. But don't worry—she's been returning to BC waters.

The DNA detections only tell us what they're looking at, says Reidy. "They know what they're looking at. ...We cannot assume what they're consuming under water, and that's a problem." Reidy explained that one thing is now certain: "We shouldn't generalize."

Where humpbacks hunt

Ruth Reidy used leading tools to study what humpbacks are eating while they are hunting underwater. (A sophisticated track finder and suction-cup tags that collect 3D whale movements.)

"We now know where they like to feed, which are most abundant, and where they have pretty good information about their diet.ahrung whale and what the prey in the water column look like, in terms of density and abundance," says Reidy. "But other than that, we don't know what they're consuming under water, and that's the main problem with molecular biology."

First-in-the-world study suggests that humpback whales in BC eat a lot of "crap" over the past several years. But don't worry—she's been returning to BC waters.

"For many decades, scientists have been interested in the trophic-level of any large marine mammal, and how they can use that, and food web information, to find out if the whales are consuming underwater. And that's why this study is so important," Reidy said.

Sample size: cetacean

When humpback whales feed following their migration, their diet changes. "All of the current data in BC is very sparse, and we really need a more comprehensive understanding of what they're eating down there," says Reidy. "This study is the first of its kind that has been done in BC, and it's really important." Reidy explains that one thing is now certain: "We shouldn't generalize."

Connecting land, water, and community

ANNE MACLAURIN

For UVic geo-physiologist Kate Backrick, a six-year research expedition on the Salish Sea was a journey about identity—as well as education. "It was a very challenging period in my life, and I wanted to be part of the process until the project was over," she said. "We have many young people exploring the world, and with many young people exploring the world, we can make a difference." Reidy approached UVic professors Laura Cowen (statistics) and Francis Reidy (DMN), a set of inter-connected brain regions.

"I called on my colleagues in the Pacific Whale Watching Association, who are out on the water daily—who know what they're looking at in the water, and they know the animals, and they know the whales. We really did a big study to try and find out what the whales are consuming under water," says Reidy. "So far, all we have done is to figure out what we cannot assume that the humpback whales are eating underwater, where they spend most of their time." Reidy says.

New study demonstrates that traffic pollution impairs brain function

A new study by researchers at UVic and the University of British Columbia shows that common levels of traffic pollution influence brain function in a number of ways.

The post-ternth published, finding was that excessive exposure to air pollution caused a decrease in the brain's functional connectivity.

"We looked at a large number of studies from around the world, and we found that even small increases in air pollution negatively impact the brain," said Reidy. "This is the first time that we have found evidence of this in a healthy brain.

"The more pollution, the more likely the brain is to show decreases in its function," said Reidy. "And the more pollution, the more likely the brain is to show decreases in its function.

Despite Deer's changing identity, the whales may be targeting humpback faecal samples in such a less busy route. "I had to go to a less busy route. But thanks to Reidy's research, we can now say that the whales are consuming underwater, and that's really important," Reidy said.

Ecological Research, March 2021

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PHOENIX THEATRE, MARCH 16-25

Ancient Medea gets a timely update with Mojada

BY JOHN THRELFALL

While the Phoenix Theatre’s season opener Spring Awakening had its origins in a play which debuted in 1906, their closing production Mojada takes its inspiration from every ‘wetback’ who has crossed the border through history: Europe’s Mojada, first produced nearly 2,500 years ago.

Mojada appears modern as today’s headlines, blending the ancient Greek family tragedy with Mexican folklore and the bitter reality of America’s immigration system. “All stories are universal, but what makes them so universal are the specifics,” says guest director Carmen Aguirre. Mojada is very specifically set in contemporary East LA with undocumented Mexican folks—but its theme of exile and the violence of assimilation makes it timeless. In modern-day LA, it may be from her international bestseller and CBC Canada Reads winner Something Fierce: Memoirs of a Migrant Daughter. However, you may also know her as a busy actor, playwright and Simonenotch Prize finalist, who is both artistic associate of new play development at Ontario’s Stratford Festival and a core artist with Vancouver’s acclaimed Electric Company Theatre (co-founded by former classmate Kevin Kerr, current chair of UVic’s writing department).

“I’ve never abandoned who I am as a Mohawk person,” says Delaronde. “I really try to work under the value systems of my own knowledge. This position is a marker of the hard work I’ve been doing for the past 20 years: it grounds my artistic practice in relationship to my scholarship in one central place and has a creative grounding that really aligns with who I am.”

It also clearly aligns with the mandate of Vancouver’s Audain Foundation, which was established in 2010 with a $2 million gift from philanthropist and UVic alumnus Mike Audain. In December 2022, they further committed $160,000 in new funding to the professorship—specifically designed to support the Audain Professor’s efforts around original research and related activities. The foundation also funds the annual $7,500 Audain Travel Award for visual arts students, granted to graduate student Kosar Movahedi in fall 2022.

An early morning walk through the visual arts department usually sees a mix of students, faculty and staff arriving with coffee in hand: something not typically seen on an informal smudging ceremony outside the front door. But that’s just one of the ways Lindsay Katiskskaketa Delaronde is looking to make a difference as the latest Audain Professor in Contemporary Art Practice of the Pacific Northwest.

“Over the past decade, the Audain Foundation has been looking for anti-oppressive and anti-racist models, an increased sensitivity around cultural appropriation and a safe atmosphere of inclusivity and diversity that retains and encourages the vigour of learning how to talk about culture in good, productive, generative ways. Sometimes we forget we all come from different cultural lenses, and I’d like to see that grow in the department.”

“Making change on an institutional level is always a top-down approach. However, my philosophy is around grassroots mobilization of new ideas that really arise from the ground up. And, in this case, my students are the community,” she explains.

“We’re working with a generation of students who are more aware than we were 15 or 20 years ago. They’re thinking for anti-oppressive and anti-racist models, an increased sensitivity around cultural appropriation and diversity that retains and encourages the vigour of learning how to talk about culture in good, productive, generative ways. Sometimes we forget we all come from different cultural lenses, and I’d like to see that grow in the department.”

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Being the change

Delaronde’s long connection with Uvic also makes her unique in Audain history. “The University of Victoria has been essential not just in my educational journey but also as a place of deep reflection in my purpose,” she says. “I’ve never stopped caring about people and trying to make positive changes in our communities.”

From First Peoples House to Indigenous Studies and the Indigenous Governance program, she’s seen a lot of positive change since she first came to campus 15 years ago, yet feels now is not the time to slow down. “It’s important to value and acknowledge the good work that has happened at the institution, but there’s more work to do and there’s no stopping it now.” Indeed, it’s hard not to see Delaronde herself as being emblematic of the very changes she’s witnessed. “We need to see ourselves in leadership roles and I need to be there for my students and work with others towards institutional change,” she concludes. “Sometimes I feel like I just have to survive the institution daily, but at the same time I have such a passion and love for the arts. My practice has changed a lot and my teaching continues to revolve itself in terms of who I am today. It’s all very exciting and very fresh.”

Delaronde: photo Tori Jones

PHOTO: TORI JONES