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University of Lethbridge joining provincial partners to form Quantum Horizons Alberta research network

The University of Lethbridge is partnering with University of Alberta and University of Calgary to form Quantum Horizons Alberta (QHA), a new \$25-million Alberta-wide initiative to expand our foundational knowledge of quantum science and pursue transformational research into the potentials of quantum physics. Initiated by a group of visionary donors, QHA will grow Alberta's considerable capacity in quantum research.

“Quantum research is transforming our world by offering solutions to difficult problems much faster and better, opening up new opportunities in areas like security, finance, drug development and studying climate change,” says Dr. Mike Mahon, ULethbridge president and vice-chancellor. “Supporting foundational research today is absolutely vital to achieve major scientific breakthroughs tomorrow.”



QHA will bring together world-class scientists to deepen our understanding and unlock the mysteries of quantum mechanics, where the rules of classical physics do not apply. Quantum science studies the properties and behaviours of the very small or very cold building blocks of the universe, exploring the world beyond what we perceive around us. From creating Bose-Einstein condensates at the lowest temperatures in the universe, to understanding the mysteries of spooky action at a distance with entangled particles, quantum is the field of novel discovery.

While there are practical applications today, such as medical imaging, lasers, electron microscopes, and new approaches to computing power and cybersecurity, dedicated foundational science is required to extend the horizons of knowledge in the quantum realm and open untold and unpredictable possibilities.

“We are very excited to be partnering with Alberta’s major research universities to bring this new pan-Alberta initiative into existence and continue on the path of having a globally recognized hub of excellence for foundational quantum research based here in Alberta,” says Richard Bird, speaking on behalf of the group of donors. “Quantum science is an increasingly critical area of study around the world, and we have the opportunity to establish our province as a key source of research and discoveries in a field which promises to be transformational to the human condition.”

Initially joining Bird as QHA donors are Patrick Daniel, Joanne Cuthbertson and Guy Turcotte, with the expectation that the group will continue to expand as supporters from across Canada join the initiative.

The initial annual operating budget for QHA will be \$5 million spread across the three nodes, committed for a minimum of five years and supported by the donors, the universities and other partners.

“These community leaders have stepped forward to invest in foundational quantum discovery because they understand how critical new knowledge is to Alberta’s future. Quantum Horizons Alberta activates our provincial research ecosystem, leveraging the talent across our universities, and enabling us to elevate and expand our capabilities,” says Dr. Ed McCauley, president and vice-chancellor, University of Calgary. “Creating new knowledge to move society forward is fundamental to the purpose of great research universities.”

“Quantum Horizons Alberta’s research funding will enable us to recruit more high-calibre research scientists and graduate students in this field,” says Bill Flanagan, president and vice-chancellor, University of Alberta. “We have a strong history of discovery and research excellence in Alberta. We can build on this history thanks to the visionary philanthropists involved in QHA. Advancing a collaborative quantum research network increases the potential for more made-in-Alberta discoveries that will benefit people worldwide.”

Alberta is already home to quantum research and innovation excellence, and, in partnership with industry, [a quantum innovation hub](#) dedicated to growing the quantum tech sector in the province. Funding through Quantum Horizons Alberta is intended to build quantum science capacity in Alberta, by supporting existing expertise and attracting new talent with the goal to recruit a minimum of eight new quantum research professors to Alberta over the next two years along with funding for many postdoctoral scholars and graduate students.

QHA enables a long-term and sustainable path for Alberta's leadership in quantum research and innovation, creating impact that will reach far beyond Alberta.

Website: quantumhorizonsab.ca

To view online: <https://www.ulethbridge.ca/unews/article/ulethbridge-joining-provincial-partners-form-quantum-horizons-alberta-research-network>

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Our University's Blackfoot name is Iniskim, meaning Sacred Buffalo Stone. The University is located in traditional Blackfoot Confederacy territory. We honour the Blackfoot people and their traditional ways of knowing in caring for this land, as well as all Indigenous Peoples who have helped shape and continue to strengthen our University community.