



Technology Innovation
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Quantum Technology Opportunity Workshop: Engage, Discover & Act

Date: Thursday, Feb 19th, 2025; Time: 8:30am-16:00pm, Room NI 4010, Carleton U

Registration link: <https://sprott.carleton.ca/event/quantum-technology-opportunity-workshop-engage-discover-act/>

The objective of this event is to engage a broader audience from the academic, innovation, business and public sector communities in exploring opportunities associated with the adoption of emerging quantum technologies. A 'broad audience' refers to an innovation-driven audience that goes beyond quantum domain experts and includes those interested in exploring entrepreneurial opportunities by leveraging the potential of quantum technologies.

The workshop will adopt a participatory format where renown Invited Speakers will provide an opportunity-driven perspective on their specific domains but also engage in conversations with participants and tailor the discussions to their interests by sharing relevant insights and exploring open-ended questions.

Key questions to be addressed by Invited Speakers and Panelists:

- What are the opportunities for entrepreneurs & early adopters of quantum technologies?
- Where and how should proactive customers start the adoption process?

Examples of questions for participants:

- Where do you see a potential role for quantum technologies in transforming your specific business or in envisioning a potential new venture?
- Do you see a potential opportunity for you, your organization or business sector that is worth pursuing? What type of partners would you need to act on it?
- What stops you from acting at this moment?

The participatory format will be enhanced by networking sessions and informal conversations involving groups of interest that could discuss potential partnerships & cooperation.

For more info contact: Stoyan Tanev, Assoc. Prof., TIM Program: stoyan.tanev@carleton.ca

Tentative Schedule (Speakers' bios are provided below)

- 08:30-08:35 **Opening:** Stoyan Tanev (*TIM Program, Sprott School of Business, Carleton University*)
- 08:35-08:40 **Welcome:** Howard Nemiroff, Dean, Sprott School of Business, Carleton University
- 08:35-08:45 Rafik Goubran, VP Research & International, Carleton University
- 08:45-09:00 Philip Lafrance, Manager, Sector Development & Operations, Quantum Industry Canada
- 09:00-09:45 John Donohue, IQC, UWaterloo, "*The Fundamental Features of Quantum Technologies*"
- 09:45-10:15 William Savard, Program Director, QV Studio, "*The QV Studio Approach to Quantum Opportunities*"
- 10:15-10:30 David Hudson, TIM Program, Sprott School of Business, CU, "*The Quantum Opportunity Domain of the Nicol Interns and Ventures Program at Carleton University*"
- 10:30-11:00 **Coffee Break**
- 11:00-11:40 Martin Charbonneau, Nokia, "*Acting on the Adoption of Quantum Safe Networking Solutions*"
- 11:40-12:20 Philip Lafrance, "*How Do Emerging Standards Enable the Adoption of Quantum Technologies? The Case of Quantum and Post-Quantum Cryptography*"
- 12:20-13:20 **Light lunch and refreshments**
- 13:20-14:00 Martin Laforest, Quantacet, "*Exploring the Landscape of Quantum Business Opportunities*"
- 14:00-14:20 David Hudson, TIM program, Sprott, CU: "*Do You Need a Lot to Start Acting Now?*"
- 14:20-14:40 Stoyan Tanev, TIM program, Sprott, CU: "*Disruption in Action: An Example of a Disruptive Quantum Technology Innovation*"
- 14:40-15:40 Panel discussion: Bruno Couillard (Crypto4A), Rajat Ghosh (National Quantum Strategy Secretariat, ISED), Khaled Mnaymneh (NRC), Jeff Lundeen (UOttawa), Niki Harris (Quantum Security Defense)
- 15:40-16:00 **Closing and networking**

Speaker bios

Martin Charbonneau is the Head of Quantum-Safe Networks in the Network Infrastructure Business Group at Nokia. Martin Charbonneau pioneered the commercialization of quantum-safe networking solutions at Nokia. His focus on Quantum cybersecurity fosters global collaborations with research and technology leaders in the quantum cryptography sphere, aiming to craft solutions for a dynamic security landscape. Martin partners with critical infrastructure organizations and enterprises in emphasizing the urgency of securing network infrastructure through comprehensive defense-in-depth strategies and ensuring enduring trust in our data and digital communication infrastructures. <https://www.nokia.com/people/martin-charbonneau/>

John Donohue is Senior Manager, Scientific Outreach, at the Institute for Quantum Computing (IQC), University of Waterloo. His main role is to take quantum information science out of the lab and bring it to audiences of all sizes and types through lectures on quantum information science and engineering, quantum cryptography and the history of quantum mechanics. He has engaged intensively with university students through technical lectures on quantum computing, photonics, and various other topics. John obtained his

PhD in Physics and Quantum Information from the University of Waterloo in 2016, specializing in quantum nonlinear optics, followed by postdoctoral research at Paderborn University in Germany.

<https://uwaterloo.ca/institute-for-quantum-computing/contacts/john-donohue>

Bruno Couillard, CEO & Co-Founder, www.crypto4a.com. Bruno is co-founder of Crypto4A Technologies Inc., developing crypto-agile and post-quantum cybersecurity products. These products are designed for deploying, managing, and protecting digital keys, workloads, and information across diverse environments. <https://crypto4a.com/teams/bruno-couillard/>

Rajat Ghosh, Manager, National Quantum Strategy Secretariat at Innovation, Science and Economic Development Canada (ISED). Dr. Rajat Ghosh received his PhD in experimental quantum physics from Princeton University in 2009 where he helped pioneer advances in quantum sensors including for use in navigation, remote munitions detection, tests of fundamental physics and brain imaging, resulting in two successful spin-off companies. From 2010 to 2015, Dr. Ghosh worked at the University of Pennsylvania's Department of Radiology where he developed pre-clinical quantum technologies to support the imaging and treatment of cancer and various pulmonary conditions. In 2018, Dr. Ghosh joined ISED as a Senior Policy Advisor where he helped develop, coordinate and implement Canada's National Quantum Strategy. <https://www.linkedin.com/in/rajat-ghosh-07956492/?originalSubdomain=ca>

David Hudson, Adjunct Professor, TIM Program, Sprott School of Business, and ICT Advisor at Innovation, Science and Economic Development Canada, Ottawa, Ontario, Canada. David is a capable technology executive with over 30 years total experience in industry. He has a PhD in Management and substantial experience in the management new and emerging technologies. <https://ca.linkedin.com/in/dvhudson>

Khaled Mnaymneh leads strategic quantum, nanotechnology, and advanced materials development for the Government of Canada. His work spans foundational physics, device engineering, and national capability building. He drives research on quantum measurement, quantum-classical interfaces, nanofabrication, photonics & semiconductor materials that enable next-generation sensors, networks & information systems. <https://nrc.ca/en/corporate/contact-us/nrc-directory-science-professionals/khaled-mnaymneh>

Martin Laforest holds a PhD in quantum computing from the University of Waterloo's Institute for Quantum Computing (IQC). For 9 years, he led the quantum outreach efforts at IQC, interacting with government, industry, the media, and the public, on the impact of quantum technologies. He then joined ISARA Corporation, a quantum-safe cybersecurity startup, and then launched Quantacet. <https://www.quantacet.com/en/team/>

Niki Harris brings expertise in quantum technologies, AI governance, and defence policy, with a focus on emerging technology strategy and international security. Niki previously served as an AI Policy Analyst at Canada's Department of National Defence, where she advised on AI ethics frameworks, autonomous systems governance, and led research on quantum-AI integration for defence innovation. She has worked in the Chief Intellectual Property Office on intellectual property policy. Niki Harris is a Cambridge and 1834 Fellow, and holds a Public Policy, International Relations & Security degree from Carleton University, 2025.

Philip Lafrance, Manager, Sector Development & Operations, Quantum Industry Canada (QIC). Philip is Information Security professional holding a master's degree in mathematics and a CISSP certification. He is has been the Interim Lead for the QIC's Standards Working Group, specializing in quantum-safe migration, cryptographic discovery, risk management, and zero trust architectures. <https://www.linkedin.com/in/philip-lafrance/>

Jeff Lundeen, PhD, is Assoc. Professor in the Dept of Physics at University of Ottawa. His experimental and theoretical research uses individual particles of light, photons, to test and apply ideas from quantum physics. Dr. Lundeen's research focuses on developing methods to generate, manipulate, and characterize single photons and entangled photon pairs. It uses these quantum states of light to build novel quantum logic, communication, and metrology devices.

William Savard is the Program Director at QV Studio, where he leverages his dual background in Finance and Psychology to facilitate the entrepreneurial journey for quantum innovators. By connecting startups with

pre-seed investment and specialized infrastructure, he helps position Canada as a leader within the global quantum ecosystem. He collaborates with experts and partners like Quantacet to guide founders through a rigorous three-year curriculum.

<https://www.linkedin.com/in/william-savard-47201a154/?originalSubdomain=ca>

Stoyan Tanev, PhD, Associate Professor, Technology Innovation Management Program, Sprott School of Business, Carleton University. Dr. Tanev's research and teaching interests focus on digital innovation and entrepreneurship, artificial intelligence and value creation, design thinking and digital transformation. Stoyan is part of the leadership of the ISPIM Digital Disruption and Transformation Special Interest Group: <https://www.ispim-innovation.com/sig-digital-disruption>.

Participating Organizations

Canada's National Quantum Strategy (NQS) Secretariat, Innovation, Science and Economic Development Canada (ISED): The NQS sets out Canada's key missions to ensure it stays on the path of quantum innovation and leadership: <https://ised-isde.canada.ca/site/national-quantum-strategy/en/canadas-national-quantum-strategy>

Crypto4A Technologies: World leader in developing products and solutions that enable the cryptographic agility, mobility, and scalability needed by enterprises and government agencies to secure their digital assets and infrastructure. <https://crypto4a.com/>

Innovation, Science and Economic Development Canada (ISED) is the Canadian federal department responsible for coordinating and managing initiatives to stimulate innovation, economic growth and competitiveness in Canada. ISED works towards improving the conditions for investment, enhancing Canada's innovation performance and share of global trade. <https://ised-isde.canada.ca/site/ised/en>

ISPIM: The International Society for Professional Innovation Management is co-organizer of this event. ISPIM is a community of members from research, industry, consulting and the public sector, all sharing a passion for innovation management. ISPIM is the oldest, largest and most active truly global innovation network. <https://www.ispim-innovation.com/sig-digital-disruption>

National Research Council of Canada: The NRC partners with Canadian industry to take research impacts from the lab to the marketplace, where people can experience the benefits. This market-driven focus delivers innovation faster, enhances people's lives and addresses some of the world's most pressing problems. <https://nrc.canada.ca/en/corporate/about-nrc>

Nokia: Delivers the key ingredients of Quantum-Safe Networks (QSN) that can adapt to the needs of every business, building confidence in securely scaling Quantum deployments inline with globally emerging business trends. <https://www.nokia.com/>

Quantacet: The first and only VC fund based in Quebec focused on the global quantum technology market by investing early-on in ambitious quantum startups. <https://www.quantacet.com/en/>

Quantum Industry Canada (QIC) is the Canada's business-led consortium transforming Canada's quantum excellence into strategic advantage and commercial success. QIC unites industry leaders and strategic partners to accelerate innovation and build a resilient quantum economy that advances Canada's security, prosperity, and global leadership. <https://www.quantumindustrycanada.ca/>

Quantum Security Defence (QSECDEF) is an international industry organization working to de-risk quantum adoption for enterprise, government, and defence sectors. As a vendor-neutral platform, it connects over 1,000 professionals across 60+ commercial organizations spanning four continents. QSECDEF provides

executive education, validated technology assessment, supply chain orchestration, and strategic partnerships across quantum secure communications, sensing, and computation. It offers workforce training, expert advisory services, and international collaboration, bridging the gap between innovation and implementation.
<https://www.quantumsecuritydefence.com/>

QV Studio is a specialized quantum venture studio that streamlines the journey for quantum innovators by providing access to infrastructure, pre-seed investment, and a multidisciplinary team of experts in finance, IP, and product management. In strategic partnership with Quantacet and Quantonation, the studio fuels the growth of emerging startups through a structured three-year curriculum. Operating within Québec's thriving tech movement, QV Studio aims to position its founders as leaders on the international stage.
<https://www.qvstudio.com/>

Technology Innovation Management (TIM) Program, Sprott School of Business, Carleton University: A set of Master level program pathways in the Sprott School of Business at Carleton University's focusing on empowering highly qualified personnel to foster the adoption of quantum-safe technologies in Canada.
<https://carleton.ca/tim/>