

## Job Description

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<b>Job Title:</b>	Program Lead, New Initiatives
<b>Department:</b>	CFREF - Transformative Quantum Technologies (TQT) 8611
<b>Reports To:</b>	Principal Investigator, TQT
<b>Jobs Reporting:</b>	None
<b>Salary Grade:</b>	USG 14
<b>Effective Date:</b>	November 2018

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### **Primary Purpose**

Working directly with the Principal Investigator and the Program Director, TQT, the Program Lead, New Initiatives is responsible for identifying, developing and leading the effective implementation of new, strategic initiatives. These new initiatives will: (i) bring sustainability to the TQT program beyond its defined funding term; (ii) augment Waterloo's existing strengths in quantum science, engineering and technology; (iii) secure new national and international scientific leadership opportunities for Waterloo faculty and students; (iv) enable new interdisciplinary partnerships and collaborations across campus and with private sector partners; and (v) actively contribute towards the creation of a more equitable, diverse and inclusive campus research environment. The Program Lead, New Initiatives will develop reports and provide advice on national and supra-national quantum initiatives worldwide, identify gaps in the quantum ecosystem that present opportunities for Waterloo, for Canada, and for Waterloo's external stakeholders, and advance key priorities for Waterloo's quantum research community. The Program Lead, New Initiatives engages with senior stakeholders within and beyond campus - in academia, government and industry, from across the research continuum - to bring forward new world-leading quantum initiatives. The impact of this role is campus-wide, affecting most faculties and the Office of Research. The net result will be a higher-performing local and national quantum infrastructure and research enterprise.

### **Key Accountabilities**

#### **Strategic Leadership**

- Guide the development of new "fundable" strategies that are championed by faculty, map well to existing strengths at UW, fill a need within the national quantum ecosystem and connect effectively to relevant stakeholders ("new quantum initiatives").
- Provide senior counsel on the formulation of new quantum initiatives under development such as the Pan-Canada Virtual Laboratory and the Joint Centre for Advanced Manufacturing of Quantum Devices at UW.
- Provide specialized knowledge related to large-scale new research initiatives to the Vice President, Research Office and connects with others in the Institute for Quantum Computing and University Government Relations as appropriate
- Identify the most promising funding sources for new quantum initiatives and develop a strategy for pursuing these.
- Accurately articulate and present a vision for new quantum initiatives in terms that inspire others, position the initiatives for success, and are complete with respect to resource requirements, financial implications, advancement of equity and other relevant details to inform decision making.
- Consult extensively with faculty to ensure new quantum initiatives are strategically aligned with and directly supportive of their interests, capabilities and ambitions.

- Develop and maintain a comprehensive and accessible catalog of Waterloo's key research strengths to facilitate strategic communications and new initiative development.
- Facilitate discussions with stakeholders both internally and externally to ensure that new quantum initiatives connect effectively with other initiatives underway or under development, as appropriate.
- In cooperation with the Program Director, act as an expert resource and provide counsel to UW senior leadership to promote the success of other strategic initiatives that fall within the broader UW context.
- Advance key priorities of the TQT initiative, contributing to strategic goal-setting.

### **Execution of New Initiatives**

- Lead the successful delivery of new quantum initiatives from conception to hand-off, including for example: identifying new collaboration opportunities; building faculty research teams; establishing governance structures; developing and prioritizing budgets; securing agreements and effectively communicating with stakeholders; developing resources; identifying and managing project risks; developing performance metrics and monitoring targets; and reporting outcomes.
- Consider all aspects of change management, including new or revised business processes, technical architectures and human factors
- Responsible for department and institution level projects, and multiple application areas that connect with quantum
- Prepare scope of work documentation and manage the processes for acquisition of goods and services related to new initiatives.
- Act as an expert source of information and advice for those seeking to realize a quantum research initiative, for example regarding federal and provincial government priorities and funding opportunities, international opportunities, industry partnership, entrepreneurship opportunities, etc.
- Liaise with key contacts – funding sponsors, campus stakeholders, academic partners – to ensure alignment on key research priorities.
- Communicate with faculty regarding strategies for pursuing funding, and provide direct support where warranted to increase success rates.
- Identify and pursue new opportunities for interdisciplinary collaboration and for research translation.
- Provide support from within TQT and the Waterloo quantum community for key University strategic priorities, such as initiatives to advance Equity, Diversity and Inclusion.

### **Knowledge Mobilization**

- Prime author of professional communication materials that includes new science and analysis and serves as thought leadership for wide public dissemination to senior-level audiences (CTOs).
- Leveraging advanced knowledge of quantum science, conduct an analysis of various fields and/or application domains and describe the opportunity for quantum technologies in an authoritative form that is influential with target audience(s).
- Support the organization of academic and industry workshops and events, leading their follow-through and reporting of outcomes.
- Communicate the science and engineering behind quantum sensing, communication and computation opportunities at a level appropriate to inform the stakeholder community of new opportunities and the impact of new initiatives underway.
- Conduct literature searches and make informal and formal presentations.
- Maintain current knowledge of the quantum field, a network of relevant contacts and an understanding of how each may support one another.

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- Identify inefficiencies and opportunities for improvement in current data gathering and reporting processes and bring forth solution(s), connecting with other administrative units on campus (e.g. IAP, Office of Research) as appropriate.

### Required Qualifications

#### **Education**

- Must have at minimum a Masters degree in Science, Math or Engineering with a focus on quantum information science, PhD in physics with focus on quantum information science preferred
- Professional training or equivalent in technical communications

#### **Experience**

- Five (5) years experience in an academic environment
- Demonstrated experience in strategic planning of research initiatives
- Demonstrated experience working with relevant funding entities
- Demonstrated in depth knowledge and application of quantum information science
- Demonstrated experience in technical communications and research proposal development

#### **Knowledge/Skills/Abilities**

- Expert level knowledge of quantum information science
- Expert level knowledge of those aspects of quantum technology development that include technical and business analysis, and development methodologies
- Expert level organization and planning skills
- Expert level communication skills
- Ability to conceive a vision that unites stakeholders and brings forth successful outcomes
- Ability to recognize promising opportunities and/or create new opportunities
- Strong knowledge of the R&D to commercialization pathway and how to effectively connect with individuals and organizations across this landscape
- Exceptional communication skills in all mediums, and the ability to select and carry a message through the most effective channel(s) in order to reach a target audience
- Strong drive and resourcefulness to drive new initiatives forward
- Strong knowledge of research management best practices, including strategies to increase EDI performance
- Ability to build effective relationships, partnerships and development efforts with individuals placed at all levels within an organization

### Nature and Scope

- **Contacts:** Scientific leaders internal and external to UW, TQT senior leadership, IQC faculty and staff, Unit Directors, Faculty Deans, the Vice President University Research, and the Vice-President University Relations
- **Level of Responsibility:** Responsible for developing and executing upon a plan that brings sustainability to the TQT initiative.
- **Decision-Making Authority:** Once a new initiative is approved, retains senior ownership and decision-making authority around its execution. The level of decision-making authority will depend on the nature of the new initiative.
- **Physical and Sensory Demands:** Occasional national and international travel (approximately 3x/year).
- **Working Environment:** Typical office environment.