Resource for Quantum City Consortia Award Applications

General Information

1. Context

Quantum City is building an ecosystem for quantum science and technology in Alberta bringing together researchers and developers, industry and adopters of quantum technologies and services. To realize the vision of being the place where quantum technology becomes quantum solutions, Quantum City is investing in multiple synergistic areas. One of these investments and support includes training and upskilling programs to the quantum ecosystem in Alberta.

Quantum City Mission:

Capture the benefits of quantum technology by creating adoption pathways.

2. Purpose

To fund interdisciplinary consortia for creating adoption pathways to capture the benefits of quantum technology through the development of any areas of the following areas of quantum technology:

- quantum algorithms/encryption, including post-quantum cryptography
- quantum communications
- quantum computing
- quantum materials
- quantum sensing

with context provided in the National Quantum Strategy.

3. Budget

The total maximum allocation of this funding call is $1.12M over two years. Quantum City will invest in up to four proposals, and full or partial funding will be up to the external panel's review and Quantum City's discretion. Quantum City Consortia Awards will provide up to 50% of the total project cost, and the project application must include a budget that shows both Quantum City and matching-funds contributions.

Each application can apply for a maximum of $140K annually.

4. Eligibility and Team Composition

- The principal investigator must hold an academic appointment (tenured, tenure-track or professor emeritus position) at one of the three eligible universities, namely, University of Alberta, University of Calgary, or University of Lethbridge.
- The team must have a minimum of three investigators (one principal investigator and two co-investigators) drawn from at least two eligible universities and drawn from at least two disciplines.
- Collaborators and partner organizations are optional.

5. Eligible Costs

- Personnel (e.g., technicians and research associates) of eligible institutions, collaborator(s), and partner organization(s) on the project.
- Students and postdoctoral associates of eligible institutions.
- Others (maximum $7k annually)
    - Travel to attend workshop/conference related to the funded project
    - Travel to partnering institute/organization on the funded project
    - Research operating expenditures (laboratory supplies and materials only, not equipment and computer/laptop)

6. Eligible and Non-Eligible Contributions

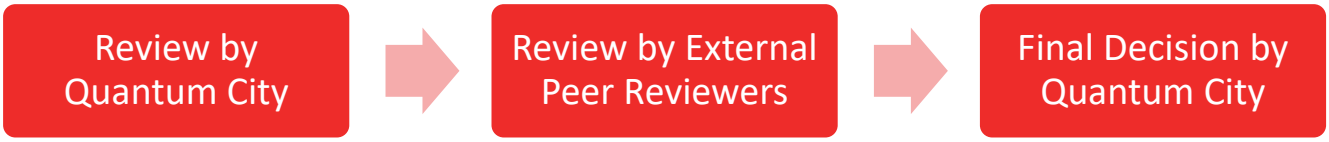
Quantum City Consortia Awards will provide up to 50% of the total project cost, and the project application must include a budget that shows both Quantum City and matching-funds contributions. Matching funds must be secured and verified before awarding funds for the first year; second-year funding is contingent on securing matching funds.

Government of Alberta funding is not eligible as a matching contribution. In-kind (e.g., hours) can be recorded as a resource in the application and specifically within the total budget but is ineligible as a matching contribution.

Eligible Funding Sources	**Non-Eligible Funding Sources**
• Institutional funds (e.g., endowment revenues and faculty salaries not eligible) • Natural Sciences and Engineering Research Council (NSERC) • Canadian Institute for Health Research (CIHR) • Social Sciences and Humanities Research Council (SSHRC) • NSERC-Industrial Research Chairs grant and Canada Research Chairs (CRC) - Research Operating only (Chair salaries associated with either program is not eligible) • ISED programs (e.g., Strategic Innovation Fund) • Canada Foundation for Innovation (infrastructure operating fund component)	• Canada Foundation for Innovation (infrastructure program stream) • Other Government of Alberta Ministries or Agencies • Alberta Innovates • Chair salaries

• MITACS • PrairiesCan • National Quantum Strategy programs • Industry	

7. Review Process



8. Explanation of terms

Project plan	• Sequence and dependencies of activities • Resources and activities needed to achieve the anticipated results • Risks and describe the mitigation plan for the project • Timelines for the activities to lead to milestones and deliverables using a Gantt chart, table or diagram • Implementation of equity, diversity, and inclusion (EDI) processes
Work package	• Objective(s) • Risks and mitigation • Milestones • Deliverables • Timeline
Training plan	• Objective(s) • Activities • Required resources • Best practices in EDI in the recruitment of HQP • Skills ○ Examples of professional skills include leadership, communication, collaboration. Other examples can be found here.
Equity, Diversity, and Inclusion (EDI)	See here for NSERC guidance.
Solution Readiness Levels (SRL)	Solution Readiness Levels (as outlined by the Innovation for Defence Excellence and Security (IDEaS) program. Click here for more information.

	This call for proposals will advance proposed solutions from Solution Readiness Levels (SRL) 3-7 inclusively. The SRL is a scale from 1 to 9 used to define the level of maturity of a research project. The SRL are defined as follows: SRL 1: Identification and observation of basic principles and properties. SRL 2: Definitions of practical applications. Formulation of concepts. **SRL 3: Observation and analysis through analytical research, laboratory research or experiments.** **SRL 4: Proof of concept that is based upon the integration of applications and concepts to demonstrate viability.** **SRL 5: Validation defined as the refined integration of applications or concepts to confirm validity.** **SRL 6: Simulated demonstration of a near-end state solution and testing in a simulated environment.** **SRL 7: Real-world demonstration of a near-end state solution and testing in an appropriate real-world environment.** SRL 8: Qualified solution which is the completion of end state solution and refinement through testing. SRL 9: Proven solution that is based upon final solution implementation and success.

9. Timeline

Applications will be available	October 31, 2023
Application deadline	January 2, 2024, at noon MST
Review of applications	January 2024–March 2024
Final decisions	April 2024

10. Glossary

Co-investigator	Member of a research group applying for a team grant. May lead some of the proposed research/activities.
Collaborator	Collaborators may take part in a research team but will not have access to grant funds. Must be qualified to undertake research independently and will be expected to contribute to the overall intellectual direction of the research project or program of research. Refer to specific funding opportunities for detailed eligibility requirements. Collaborators are considered team members and should be included. Collaborators are not mandatory for this project application.
Partner organization	The partner organization must play an active role in the project and make in-kind or cash contributions through at least one of the following roles: • Active participation in project research activities • Application of project research results to help achieve the desired outcomes • Active participation in translating or mobilizing the knowledge produced by the project to generate the greatest possible economic, social and/or environmental benefits for Alberta Partner organizations are not mandatory for this project application.
Principal investigator	The principal investigator on an application, leads the direction of the proposed research/activities, as well as coordinates the financial and administrative aspects of the application and grant.
Research trainees (HQP)	• Undergraduate student • Graduate student • Postdoctoral associate
SMART	• Specific • Measurable • Achievable • Relevant • Time-bound

Contact Information

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