

Application for QuantumWorks Research Funding

Time Period: June 1, 2010 – May 31, 2011

Name:

Institution:

Title of Proposal:

Funding Requested:

NOTE:

- **All expenditures of QuantumWorks funds must meeting NSERC eligibility requirements**
- **You are reminded to acknowledge QuantumWorks on your website and in any publications and/or talks**

Brief Research Objective (1 – 2 sentences):

Themes and Projects Applicable (check all that apply):

Theme A – Quantum Algorithms & Complexity	Theme B – Quantum Building Blocks	Theme C – Quantum Cryptography
<input type="checkbox"/> A1: Quantum algorithms for group-theoretic problems and cryptography	<input type="checkbox"/> B1: Photonic Sources	<input type="checkbox"/> C1: Experimental implementations of quantum key distribution, fibre and free space, and multi-party cryptography
<input type="checkbox"/> A2: Investigate the power of alternative computing paradigms, such as quantum walks and adiabatic techniques	<input type="checkbox"/> B2: Photonic Carriers	<input type="checkbox"/> C2: Classical public-key cryptosystems secure against quantum computers
<input type="checkbox"/> A3: Develop complexity theoretic results that give insights into the power and limitations of quantum algorithms	<input type="checkbox"/> B3: Detectors	<input type="checkbox"/> C3: Development of new protocols for cryptographic tasks
<input type="checkbox"/> A4: Study the application of quantum algorithms to simulations of general quantum physical systems	<input type="checkbox"/> B4: Optical Quantum Logic and Memory	<input type="checkbox"/> C4: Verification and certification of quantum cryptosystems
<input type="checkbox"/> A5: Investigate specific architectures and methods for fault-tolerant error correction	<input type="checkbox"/> B5: Qubits and benchmarking	

Completed forms should be emailed to collins@iqc.ca



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This section of the form pertains to your research efforts in the previous year

List QuantumWorks Collaborators (Members and Associate Members):

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Project	Milestones Originally Proposed
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

Project	Milestones Achieved
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

Discuss variances between proposed milestones and achieved milestones and the impact these variances have had on the direction of your research such as new areas of interest or areas no longer being pursued.

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This section of the form pertains to your research plan for the upcoming year

Budget with Justification:

Highly Qualified Personnel (give names and positions: Master's, Ph.D., postdoc)		
Equipment		
Travel		
Other		
Total Requested		

List QuantumWorks Collaborators (Members and Associate Members):

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Project	Next milestones to be addressed
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	



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Discuss proposed research to achieve these milestones:

A large, empty rectangular box with a thin black border, intended for writing a response to the prompt above.



List of publications and talks in the last 12 months:

NOTE: These will be entered into the network's qsearch library, available online.