A complex visualization of quantum physics concepts. On the left, a blue wave packet moves from left to right. In the center, a glowing blue atom is depicted with a central nucleus and several electrons orbiting in elliptical paths. The background is dark blue with numerous small, bright blue stars or particles scattered throughout. The overall aesthetic is futuristic and scientific.

Introduction to Quantum BC  
RIKEN/Vancouver workshop  
August 23-24th, 2021

# British Columbia Quantum Computing Ecosystem

POST-SECONDARY



THE UNIVERSITY  
OF BRITISH COLUMBIA

- Quantum Computing Cluster
- Quantum Matter Institute - Grand Challenge
- QIT group
- ICICS



- Silicon Quantum Technologies
- Hosting Quantum Algorithms Institute



University  
of Victoria

- Quantum applications
- CS, ECE, Chem, Physics
- IEEE Quantum Week conference (chair Prof. Muller)
- Silicon Quantum Leap \$19M CFI-funded project
  - Silicon spins with photonic circuits
  - SFU, UBC, UVic

OTHER NON-PROFIT & INSTITUTIONAL



- Data Science and QC program
- QC summer school

QUANTUM BC  
research · training · innovation

- Joint - UBC, SFU, UVic, TRIUMF
- CREATE Program in QC
- Diversity, outreach, events

Quantum Algorithms  
INSTITUTE

- SFU Surrey campus
- \$17M funding from BC Govt.



- Capacity Building project: Diversifying Talent in QC
- \$0.5M

PRIVATE COMPANIES

## Quantum Computing Companies

D:WAVE  
The Quantum Computing Company™

**\$204M funding**

- 5,000+ qubit quantum annealer
- Local QC pioneer

IQBit

**\$45M funding**

- Quantum-inspired software solutions
- Collaborations across BC - training

photonics

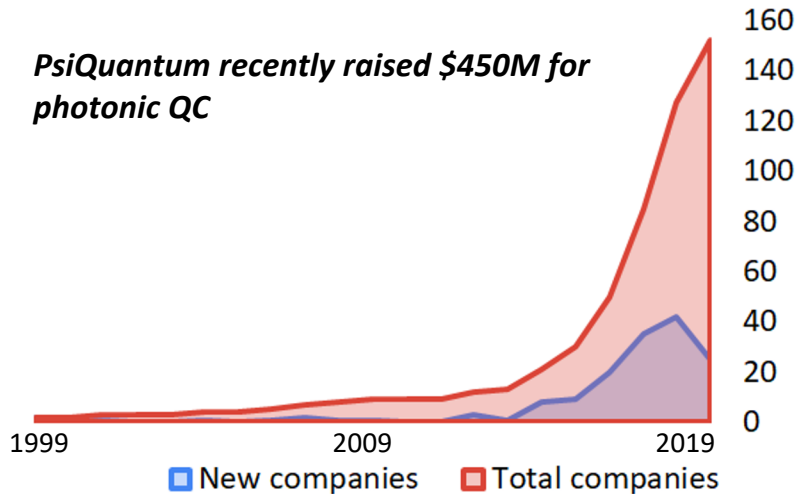
**\$M undisclosed**

- Silicon quantum hardware (photonics)
- Hiring

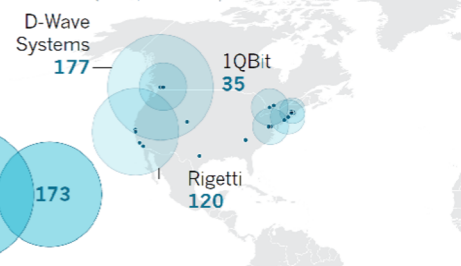
# QUANTUM COMPUTING IS A GROWING ECONOMY IN CANADA AND BC

**Private funding for Quantum companies: \$450M in 2017/18**

**PsiQuantum recently raised \$450M for photonic QC**



**LOCATION OF INVESTMENTS 2012-18 (US\$, millions)**

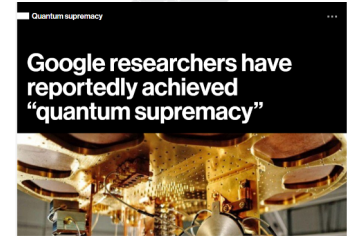


**TOTAL VALUE OF DEALS (US\$, millions)**



**NUMBER OF DEALS**

- Instrumentation, tools and services
- Communication
- Software
- Computing
- Sensors and materials



The BC advantage: 2 of the globally important quantum computing companies are in Vancouver: D-Wave, the maker of the *world's first commercially available quantum computer* and 1QBit, the *world's first quantum computing software company*. It is akin to having 1970s Intel and 1980s Microsoft on our doorstep.

# Integrating hardware and software in QC training

QUANTUM BC  
research · training · innovation

## Software companies



## Hardware companies



Total of 73 CREATE graduate scholarships.  
500+ highly-qualified  
graduates in the next 6 years

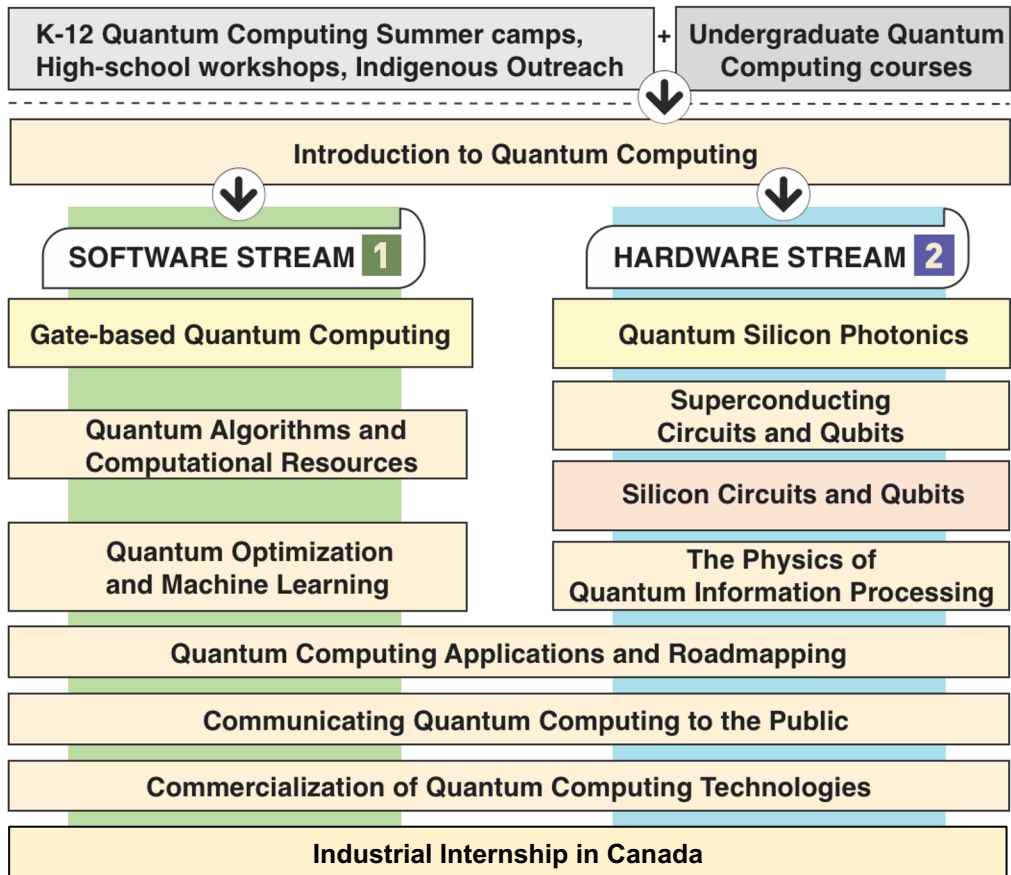
## Post-secondary



## Other support



# CREATE Program: Quantum Computing



- **CREATE Internships**
  - 4 to 8 months, co-funded by MITACS
  - Companies including D-Wave, 1QBit, IBM, Xanadu, Quantum Silicon, CMC, IBM
- **CREATE Scholarships**
  - open to current and future students
  - Next deadline: January, 2022
  - <https://bit.ly/QCapply>
    - Detailed handbook
    - [www.quantum-bc.ca](http://www.quantum-bc.ca)
- **Contact**
  - Bahiyyih Peters <[bahiyyih.peters@ubc.ca](mailto:bahiyyih.peters@ubc.ca)>