



# Research Security Protecting Canadian Data Science & Technology

Canada is a global research leader, due to our world-class universities, public and private research organizations, and human talent.

Canada's innovative reputation attracts threat actors: they exploit our principles of open science and collaboration; disregard Canada's laws and values; and disguise their role in serving a foreign state agenda to obtain valuable Canadian data, intellectual property (IP) and know-how.

These deceptive and malign activities harm Canada's safety, security and prosperity interests. Canada's research integrity is undermined; our knowledge-based economy is stolen; and threat actors gain powerful and destabilizing surveillance and military capabilities.



## Who & Why

- Hostile state actors, particularly China and Russia, pose the greatest threat.
- In our digital era, threats can arise from anywhere, including from non-state actors.
- The world is increasingly competitive. Hostile states seek advantage at Canada's expense. They look to advance their economic, technological, intelligence and military state interests.
- Policies and practices of Military-Civil Fusion, coercive national security laws, and state capitalism pose a growing threat.

## What

Almost all Canadian research domains face some level of risk; but the top five targets are:

- Biopharma & health
- Artificial intelligence (AI), quantum, and big data
- Semiconductors, 5G, and smart cities
- Ocean technology, including sensors
- Aerospace technology, including hypersonics

## How

Sophisticated threat actors will exploit vulnerabilities, including via deceptive means, such as:

- Traditional espionage
- Cyber espionage
- Insider threats
- Non-traditional collectors
- Talent spotting
- Research funding
- Unsafe supply chains (equipment, services)
- Joint ventures
- Minority investments (e.g. venture capital)
- Foreign acquisitions (foreign direct investment)

### SENSITIVE LABORATORIES

Threat actors seek direct or indirect access to sensitive laboratories.



### INTELLECTUAL PROPERTY (IP)

Control over IP may be lost, with all gains accruing to foreign states.



### DEFENCE & DUAL-USE

Researchers may knowingly or unwittingly contribute to foreign military capabilities



### ACADEMIC LEADERSHIP

Leading academics and administrators may be targeted or leveraged.



### RESEARCH GRANTS/FUNDING

Government funding may be subverted, and foreign funding may co-opt Canadian research and IP.



These threats are real; and Canada is not unique in managing these challenges and risks.

Most importantly, you are not alone in facing these threats.