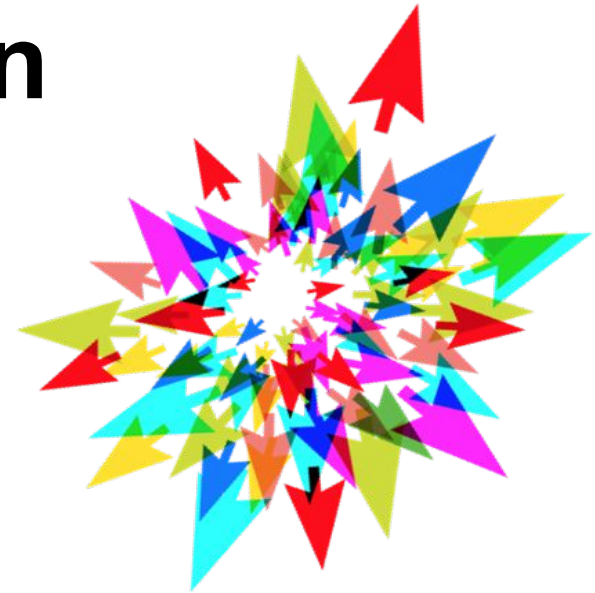# Introduction to the Compute Canada Federation

Sergiy Stepanenko

Lydia Vermeyden

Megan Meredith-Lobay

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Compute Canada is a not-for-profit organization funded by the Canadian Foundation for Innovation and supported by regional partnerships to provide the **essential digital infrastructure for industry and researchers in Canada.**

Our ~**200 staff are world class experts** and **train thousands of researchers** a year in computation and big data analytics - **ensuring we produce knowledge experts for competitive industries.**
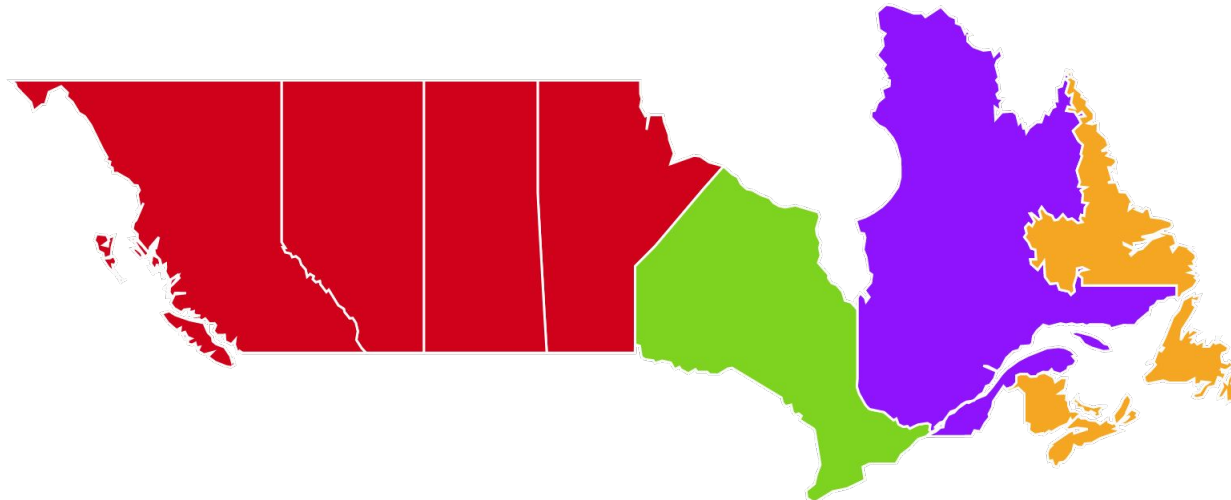
Compute/Calcul Ontario

Calcul Qubec

WestGrid

Acenet

Regional

Consortia

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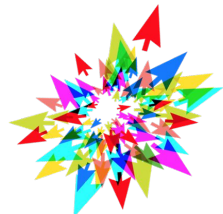canada | canada

Supporting Research

Resources

Services

Expertise

Resources

- High performance, big data and GPU computing and storage
- [Cloud](#) environment development space and storage that includes an outward facing IP address
- Data storage and backup systems provide stability and security options over your desktop

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High Performance
Compute

National Systems

Beluga - CPU, GPU, Storage

Graham - CPU, GPU, Storage, Cloud

Niagra - CPU, Storage

Cedar - CPU, GPU, Cloud, Storage

Arbutus - Cloud

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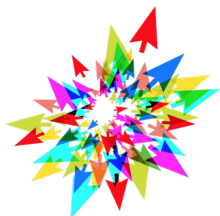
Services

- Training

- Centralized software stack

- NextCloud

- Specialized Data Portals - i.e., Jupyter

  Hub

- FRDR Collaboration

- Globus File Transfer

Training

Regional and National

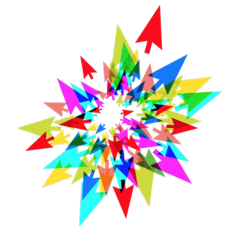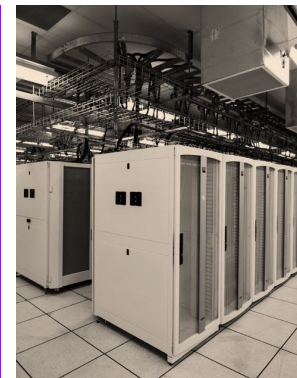**Discipline specific training**

The Carpentries

D A T A CARPENTRY

High **P**erformance **C**omputing **C**arpentry

WESTGRID

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Calcul Québec
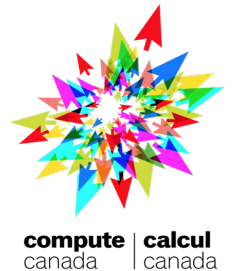
Visualization

Summer Schools

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Expertise

- **Consultation** - Helping to determine the resources needed

- Designing, optimizing and troubleshooting computer code

- Customizing tools

- Specialized support is available for a range of disciplines

- Visualization specialist

- Cybersecurity

HSS Support

- Humanities and Social Sciences experts in WestGrid and Acenet

- A National Humanities and Social Sciences team with domain and technical experts located at sites across the country.

- HSS targeted training courses - including Software and Data Carpentry

- Support for Digital Humanities Summer Institute

Getting Access

How do I access the resources, services, and expertise?

https://www.computecanada.ca/home/ support@computecanada.ca

Resources	Services	Expertise
• RAS - On-Demand • RAC - yearly • Resources for Research Groups **(RRG)** • Research Platforms and Portals **(RPP)**	• CCF Wiki • Disciplinary Support • Software • Special support, i.e. COVID	• Visit Consortia websites • Visit disciplinary support wiki • Attend training courses

Recipe for an efficiency

How to get the most out of resources and services you get?

- **Advanced Research Computing**, as anything else in our lives, benefits from standards, rules and sets of best practices

- **Data** are both: a resource and a product for Advanced Research Computing

- Achieving research goals depends, substantially, on our ability to properly use tools and resources, in our disposal

- **Research Data Management** is one of the most important and the most challenging aspects of computing

Research Data management

Best practices to help you stay in control

- Start planning data storage, processing and access **long before** you have any data, so when you do -- you are prepared.

- Set and maintain practices for data collection and access that are **consistent**, **easy to understand** and follow.

- As data sets and their number grow **larger** over time -- your ability to manipulate them **diminishes**. Implement sustainable and scalable mechanisms at the beginning, so you only manipulate them -- not data itself.

- Do not **move** or **copy** data if it can be **avoided**. Plan data **storage** to be, where data are being **processed** en mass. What looks like a trivial task of managing hundreds of files becomes a challenge with thousands and a nightmare -- with millions.

THANK YOU

for more information please visit

https://www.computecanada.ca/