

NeuroHub

neurohub.ca

Seamless neuroscience data management, analysis and collaboration

Introduction



Bryan Caron

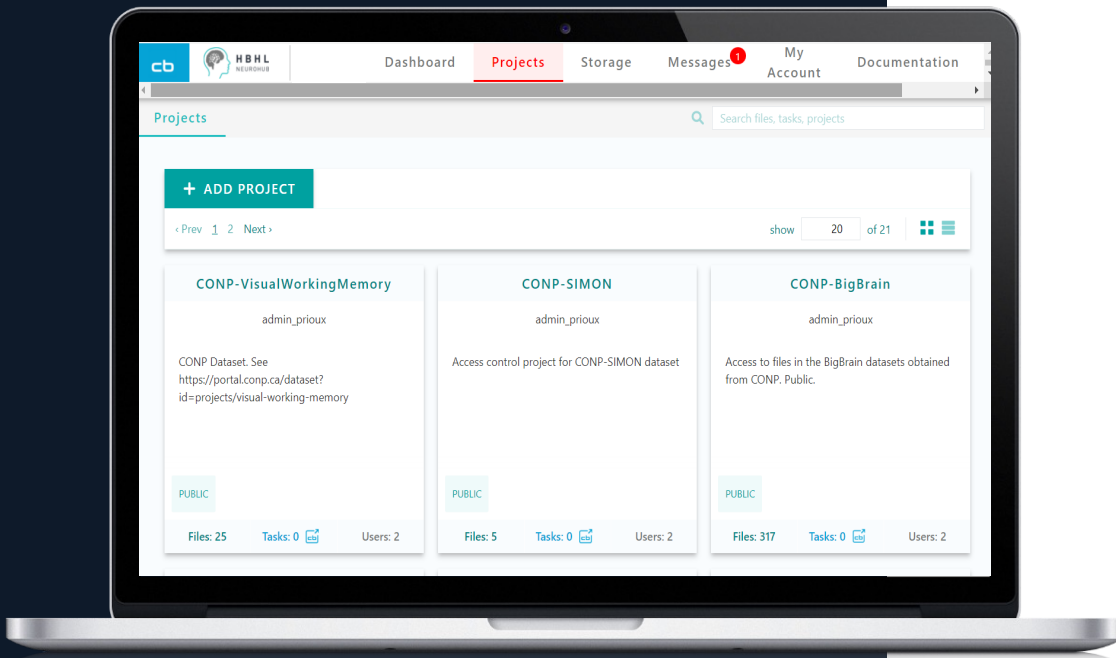
Co-PI, NeuroHub
Director, Operations and
Development



Jean-Baptiste Poline

co-PI, NeuroHub,
Associate Professor

What is NeuroHub?



**Multi-modal
data management**



**Data Storage & secure
sharing with collaborators**



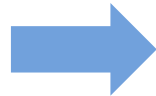
**Dataset Access via
a simple web UI**



**Analyze data more
efficiently and reproducibly**

NeuroHub Ecosystem

Services



Data Management

The LORIS logo, which consists of a network of blue nodes and lines, and the cbrain logo, which is the word "cbrain" in white text on a blue rounded rectangle.

Big Data Processing

The cbrain logo, which is the word "cbrain" in white text on a blue rounded rectangle.

Data Sharing

The zenodo logo, the OSF logo (a blue flower-like shape), and the DataLad logo (the word "Data" in black and "Lad" in orange).

Data Storage & Accessibility

Logos for Digital Research Alliance of Canada (a yellow triangle), biobank (the word "biobank" in blue), CONP PCNO (a red maple leaf), and C-BIG Repository (a blue circle with a white DNA helix).

Data Exploration

The jupyter logo (an orange circle with a white dot), the R Studio logo (a blue circle with a white "R"), and the python logo (two interlocking snakes, one blue and one yellow).

Open Publishing (in the future)

The NeuroLibre logo (a grey rectangle with a white icon) and the VAPERTURE logo (a green outline of a head with a brain).

NeuroHub Ecosystem Features



Easy-to-use interface and rich API



Securely store and share data



Access to high performance computing



Access large international datasets

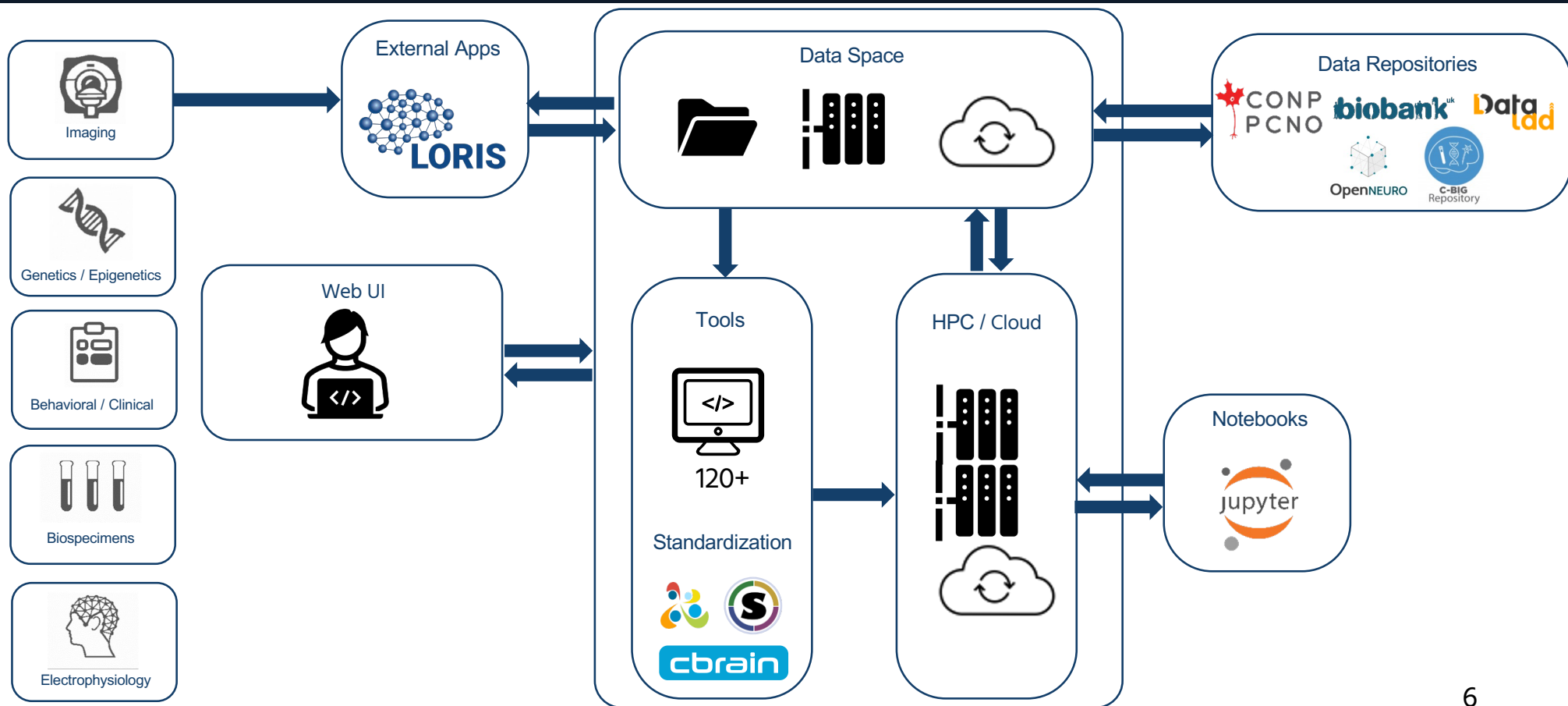


Capture and curate multi-modal data



Sample level data with NeuroBagel

Big Data Processing



Range of Service Models



*Simple data sharing, analysis
& collaboration*

Storage & sharing of data
(limited)

Access international datasets

120+ computational pipelines

Publish open data



*Small-scale data management
& analysis*



Data management for multiple
clinical projects

Custom tools and pipelines

Enhanced storage and compute

Data standardization expertise



*Large-scale data management
& analysis*



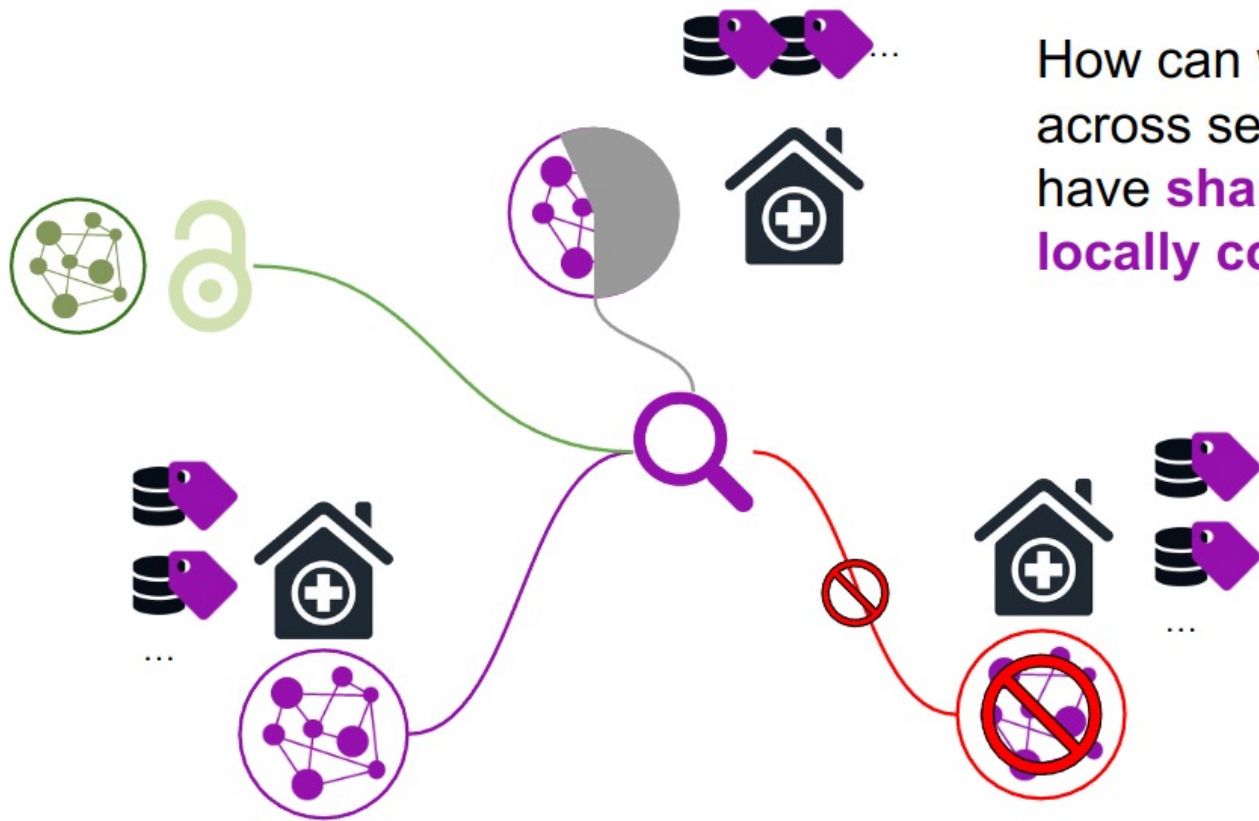
Multi-site, multi-modal data
management software

Access to a large library of
modules and instruments

Customization services

Dedicated project management
and support

Sample Level data with **NeuroBagel**



How can we **find cohorts** across sensitive data and have **sharing constraints locally controlled**

Conclusion



Big Data



Big Computation



International
Collaboration



Interdisciplinary
Health Research

Infrastructure and services for accomplishing science



NeuroHub provides key services for reproducibility and interoperability

- Components, such as CBRAIN, are completely general and can be used beyond brain science
- Since launching in 2020:
 - 300+ NeuroHub Portal users
 - 400+ attendees at NeuroHub training events
 - 100+ published research outcomes using the platform



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