Databinge

Github, OSF, (+more) and the Brain Circuits Cluster

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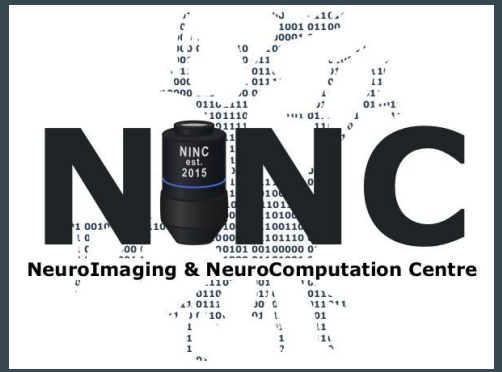

Jeff LeDue

31 Jan 2020

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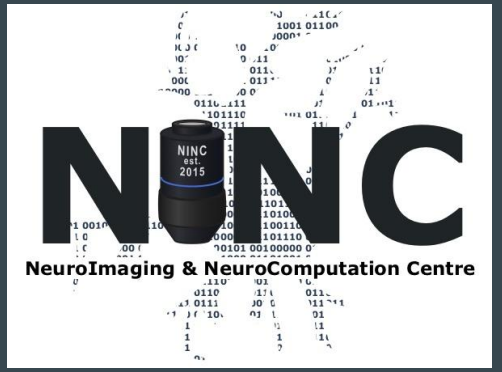
Dynamic Brain Circuits in Health & Disease
Research Excellence Cluster

Outline:

- NINC
- Dynamic Brain Circuits (DBC) cluster: Advanced Summer courses
- Communications tools discussion, databinge DMCBH digital signage
- DBC 2020 workshops: UBC ARC CC
- Review tools github/data sharing platforms.
- OSF for Institutions
- DBC Coding Challenge and $5000 stipend top ups.

NINC



- DMCBH core facility: NeuroImaging NeuroComputation Centre (NINC):
- https://ninc.centreforbrainhealth.ca
- Microscopes and Imaging, support for learning to code, on-going help with data processing and analysis, 3D printing, tissue clearing and expansion, high performance computing, etc
- Email me if you want to discuss any aspect of NINC: jledue@mail.ubc.ca
- Setting up an email list for NINC users.
- Lock boxes installed near the doors will contain keys so security guard mix-ups do not occur
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Dynamic Brain Circuits cluster

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- UBC Research Excellence Cluster: Dynamic Brain Circuits in Health and Disease: support for meetings & courses, local workshops/talks, open science & data sharing
- Support for Meetings/Workshops/Advanced courses: Usually cluster funds registration, other funds are needed for travel, accommodation etc.
- Deadlines are coming up soon! Neurophys-list email, check the website below.
- Examples from 2019:
    - CSHL Cold Spring Harbor Laboratory Course Statistical Methods for Functional Genomics, Frontiers in Neurophotonics International Summer School, NeuroFutures 2019, Santa Barbara Advanced Multiphoton Course, Microscope Society of Canada 2019, Westgrid Research Computing Summer School, Americas School of Neuroimmunology Course, Allen Institute BioImage Informatics 2019, Allen Institute Showcase Symposium 2019, SCAPPS 2019
- List of courses -not exhaustive:
  https://braincircuits.centreforbrainhealth.ca/cluster-activities/trainee-opportunities-and-funding
- Request form:

-Pause- Communications tools

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- Mailing lists: DATABINGE-BRAINCIRCUITS@LISTS.UBC.CA
- Mainly used to announce databinge, some related talks, etc.
- ALDER-USERS@lists.ubc.ca
- Newly created, for DMCBH computer cluster only, Jupyterhub VS job queue
- NINC-USERS@lists.ubc.ca
- Coming soon. Issues surrounding NINC in general. Booking system, scope issues
- Slack: NINC and Cluster Slacks exist but have fallen into disuse or were not widely used. Revive?
- Twitter: @BrainUbc
- DMCBH digital signage...

-Pause- DMCBH digital signage

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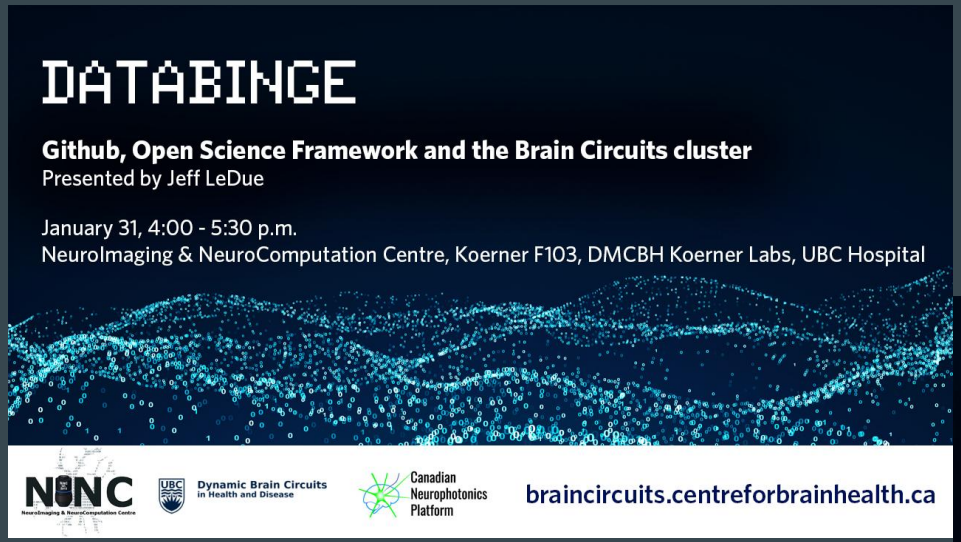

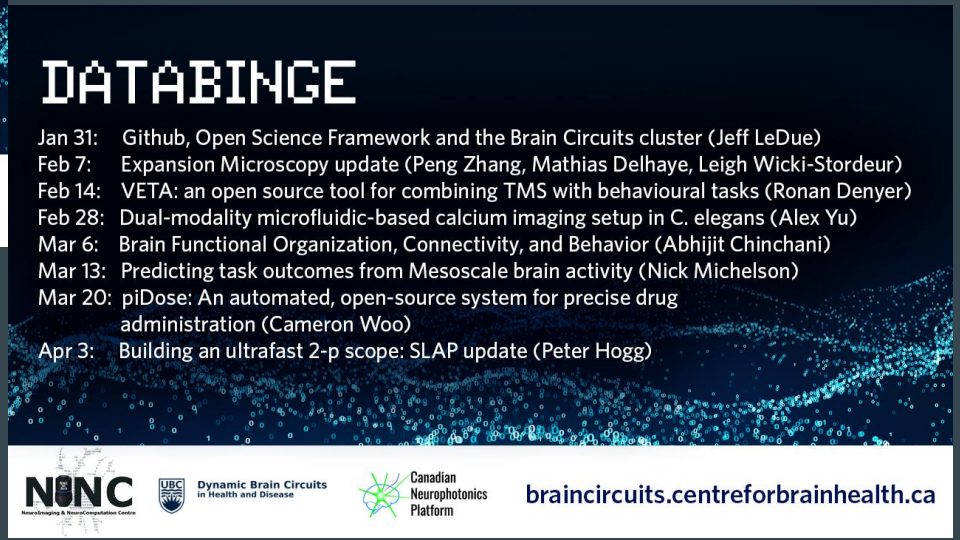

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- UBC Research Excellence Cluster: Dynamic Brain Circuits in Health and Disease: support for meetings & courses, open science & data sharing, local workshops/talks
- local workshops/talks: databinge talk series on campus (Friday's)
- Past topics here: https://ninc.centreforbrainhealth.ca/databinge
- Email me if you want to be on the mailing list: jledue@mail.ubc.ca
- Examples from 2019:
  - Expansion and Tissue Clearing, Data Science, Mircobiome (with BCRegMed), "Future of Health" research day with Women's Health and Biomedical Imaging and AI. Microscope Society of Canada workshop.
- Planned for 2020: Compute Canada How-to with UBC ARC, Multi-cluster Research Day, ICORD ImageJ Feb 10, Dynamic Brain Circuits Coding Challenge

Compute Canada Workshop - UBC ARC & BMIAI

- Any current CC users?
- Working with UBC Advanced Research Computing and the Biomedical Imaging and AI cluster on a potential workshop.
- Background: Allocations not fully utilized... Offer assistance with onboarding and initial usage.
- Tentative topics for the workshop:
  - Overview of CC systems available and potential uses: Computing, GPU, Storage
  - Explanation of accounts and the CCDB
  - First steps: Logging in and Transferring files (code and data) with sftp and/or globus
  - Examples Running MATLAB code on CC using UBC site license
  - Running python code?
  - GPU practical example?
  - What else would be of interest?
- Feedback?

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- Open Science & Data Sharing:
- Data Management Whitepaper: https://ubcbraincircuits.readthedocs.io/en/latest/
- Presentation DMCBH Oct 2019: “Data sharing tools to navigate the changing landscape of neurodata: Status report from the Brain Circuits Cluster”: https://osf.io/szfcb/
- Discusses: Data Management Plans, Data Storage and Sharing (Dataverse, OSF, FRDR), and DMCBH’s Jupyterhub.

Dynamic Brain Circuits cluster: Github

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- Glaynel's excellent tutorial on git from last fall:
- https://ninc.centreforbrainhealth.ca/sites/default/files/databinge_22112019_vc.pdf
-
- Following up on a conversation we had after a databinge last year:
- The cluster github: https://github.com/ubcbraincircuits
- I can make a team here for your lab.
- Posting code here will make it easier for those in other labs to find it and try it.
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- Please send me your github user names or emails and I can add you to the cluster.
- Instructions for moving repos to the cluster are in the whitepaper.

DBC cluster: Data Sharing tools

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- 3 main platforms were set up last year:
- FRDR: https://www.frdr.ca/repo/handle/ubcbraincircuits
- Use for larger data sets: up to 4TB transfer with globus
- Dataverse: https://dataverse.scholarsportal.info/dataverse/UBC_BrainCircuits
- Use for smaller data sets: up to 10GB and files < 2.5GB
- OSF: https://osf.io/b89p7/
- OSF page for the cluster, but UBC has recently started OSF for institutions.

UBC OSF for Institutions

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- Go to the main OSF page: http://osf.io
- Click sign in.
- Click sign in through institution
- Select University of British Columbia in the drop down menu
- Sign in using the usual CWL process.
- Create a project and upload your files.
- Will be accessible to you and contributors on OSF or others via a link.
- Can be made public.
- No limit on data volume, 5GB limit per file.
- Larger files can be archived and split across multiple files.
- Upload via web page interface or python: https://github.com/ubcbraincircuits/osfclienttutorial

DBC Coding Challenge: overview

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- We sent info out on this to PIs. Emily send to the Neurophys list and possibly on twitter?
- DBC cluster was funded to provide 3 top up awards of $5000 to student who would serve as coding tutors here (F103) and help the cluster to meet its goals of fostering data science know-how in neuroscience.
- Labs will submit challenges and during the coding challenge you will have an hour to work on one and present your efforts.
- The coding challenge will be part of the evaluation to determine who becomes the 3 “DBC Nuerodata tutors” in addition to CV, personal statement and overall team considerations.

DBC Coding Challenge: The challenges

- Who can submit one? - Anyone, please let your PI know.
- What might make a good challenge?
- A well defined problem that you can clearly (&quickly) communicate.
- Something that can be prototyped with a small amount (subset of) data
    - OSF is the suggested platform for sharing data for the challenge
- A sketch of a solution is available (pseudocode, flow chart, block diagrams, existing code repositories tackling related issues)
- Submit it here: https://braincircuits.centreforbrainhealth.ca/cluster-activities/coding-challenge-neurodata-tutors
- Please contact me if you have ideas and want to discuss.

DBC Coding Challenge: The challenge itself

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- Participating: If you want to participate, please email me so I can get an idea of how many people we will have and can select an appropriate room
- On the day of the challenge we will:
  - Make the challenges available online
  - (Hopefully) have the challenge originators on hand to answer questions and interact with participants
  - Participants will have 60 min to address a challenge.
- Then short presentations (5-10min) on your approach to the challenge (will be judged).
- When? TBA
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