

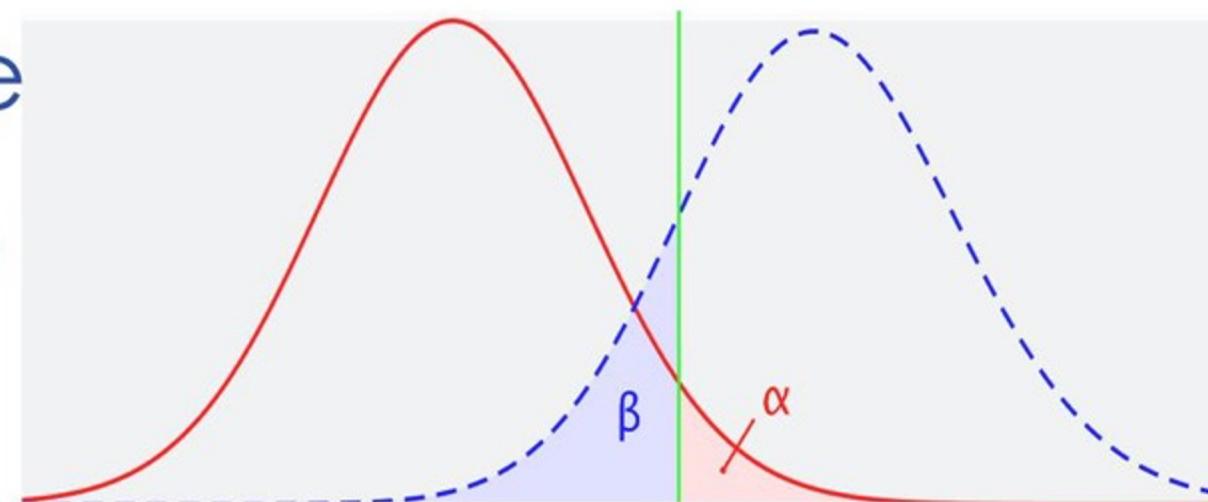
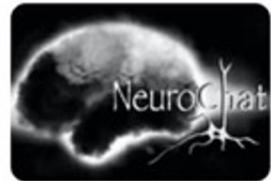


Chinese Open Science Network

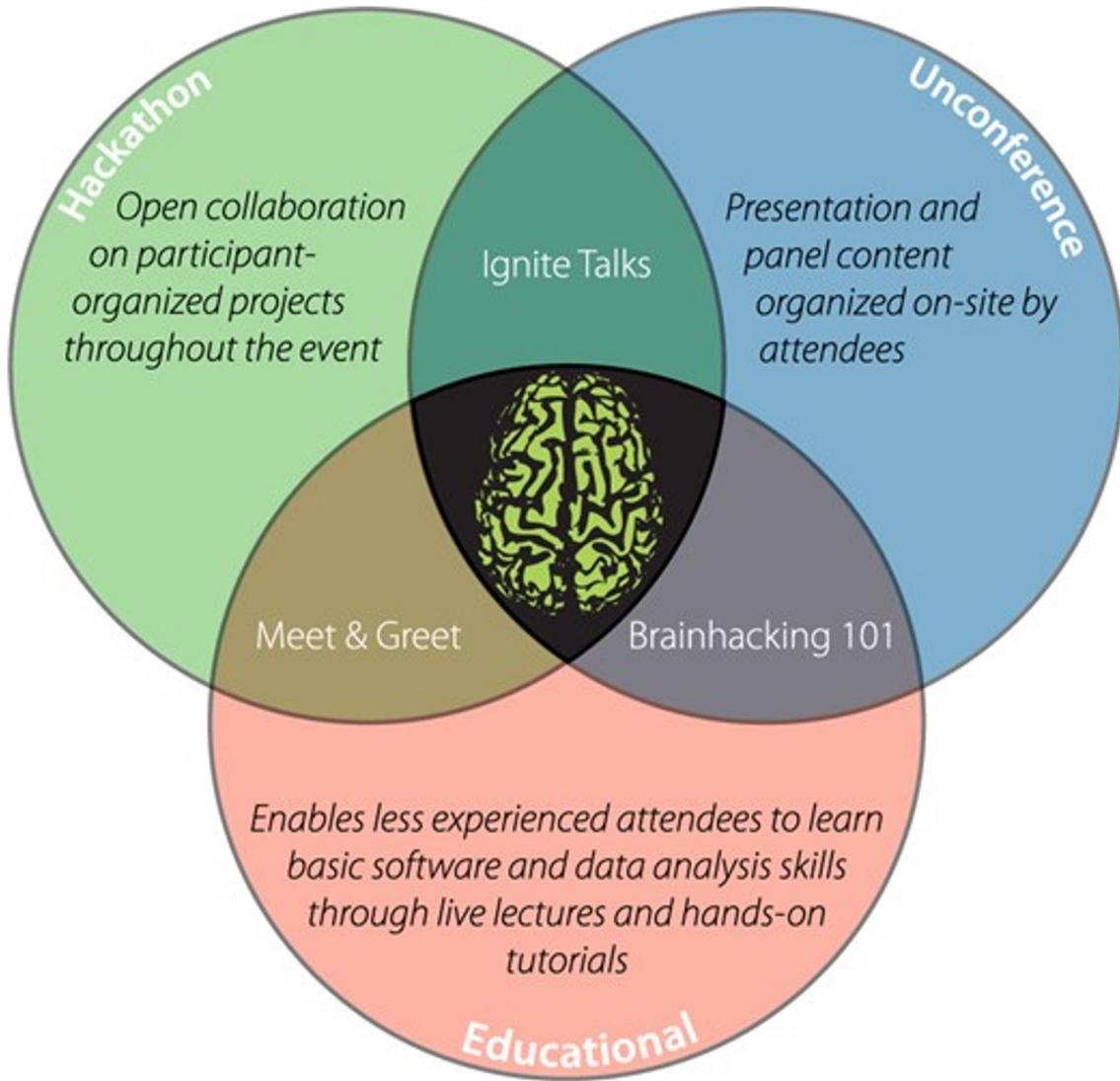
1st COSN hackathon

May the **POWER** be with you!

Aug. 27th-28th 2022, Online



What is Brainhack?



- Unconference & Hackathons
- Collaboration
- Learning by doing
- Attendee-led event
- Open science
- Reproducibility

<http://etc.ch/wfp2>



brainhack.org

SEARCH PROJECTS

+SUBMIT PROJECT

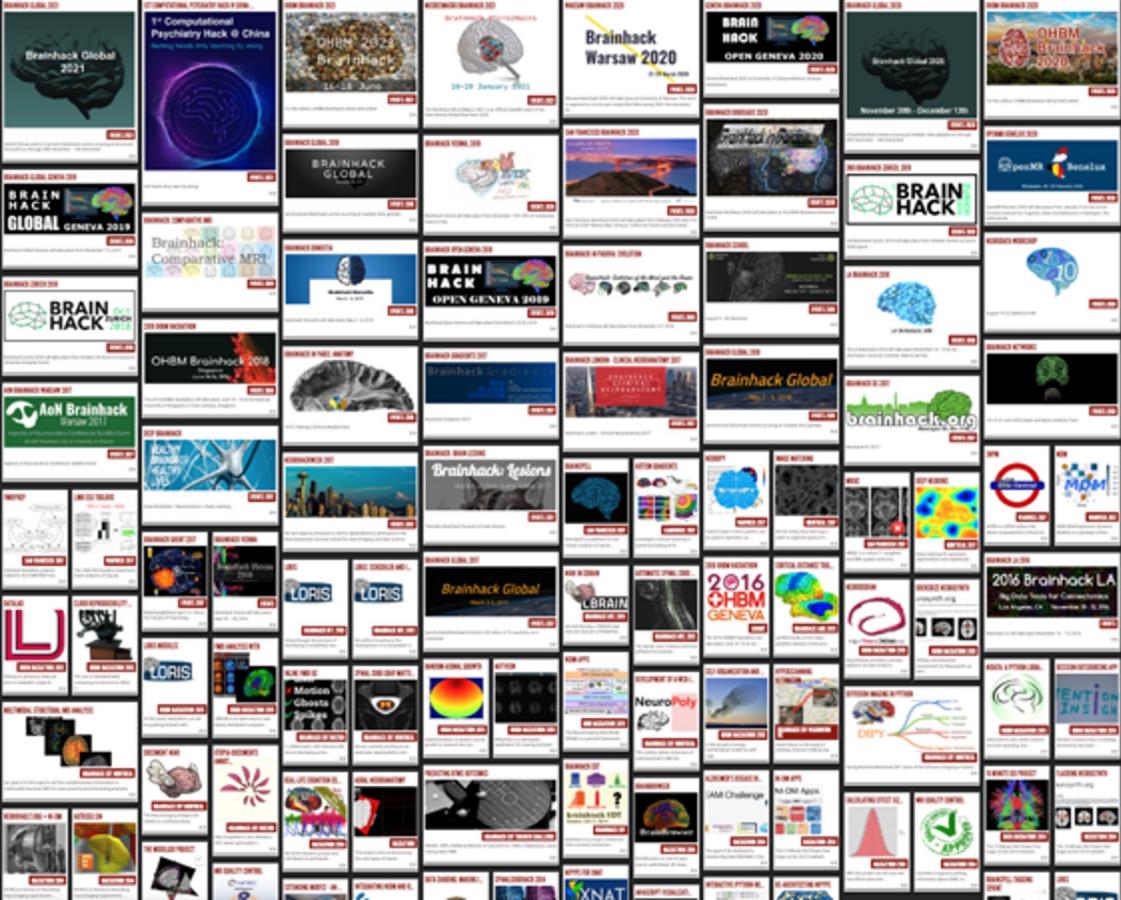
EVENTS

PROCEEDINGS

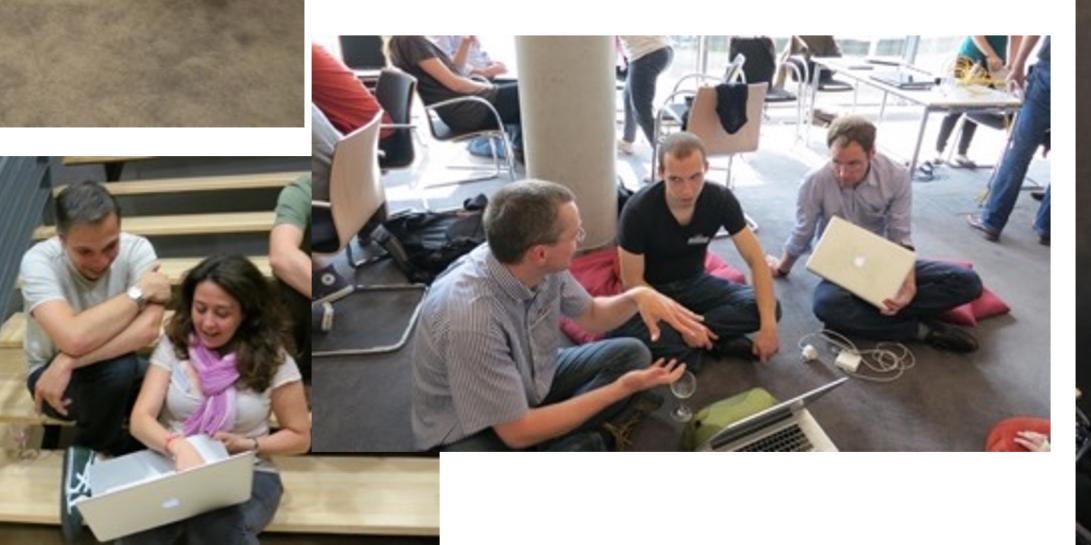
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CODE OF CONDUCT



brainhack-unconference-2012 (Leipzig)



2012 Brainhack&Unconference

1–4 September 2012

Leipzig, Germany (72)

2013 OHBM Hackathon 2013

(136)

Brainhack 2013

2014 OHBM Hackathon 2014

Brainhack Eastern Daylight 18-19 October 2014

Boston, Massachusetts, USA (35)

Miami, Florida, USA (39)

Montréal, Québec, Canada (49)

New York, New York, USA (37)

Porto Alegre, Brazil (25)

Toronto, Ontario, Canada (15')

Washington DC, USA (27)

2015 Brainbook Americas

22–25 October 2015

Ann Arbor, Michigan, USA / 10

Brainhack Global

March 2-5, 2017

Craddock et al. *GigaScience* (2016) 5:16
DOI 10.1186/s13742-016-0121-x

GigaScience

REVIEW

Open Access

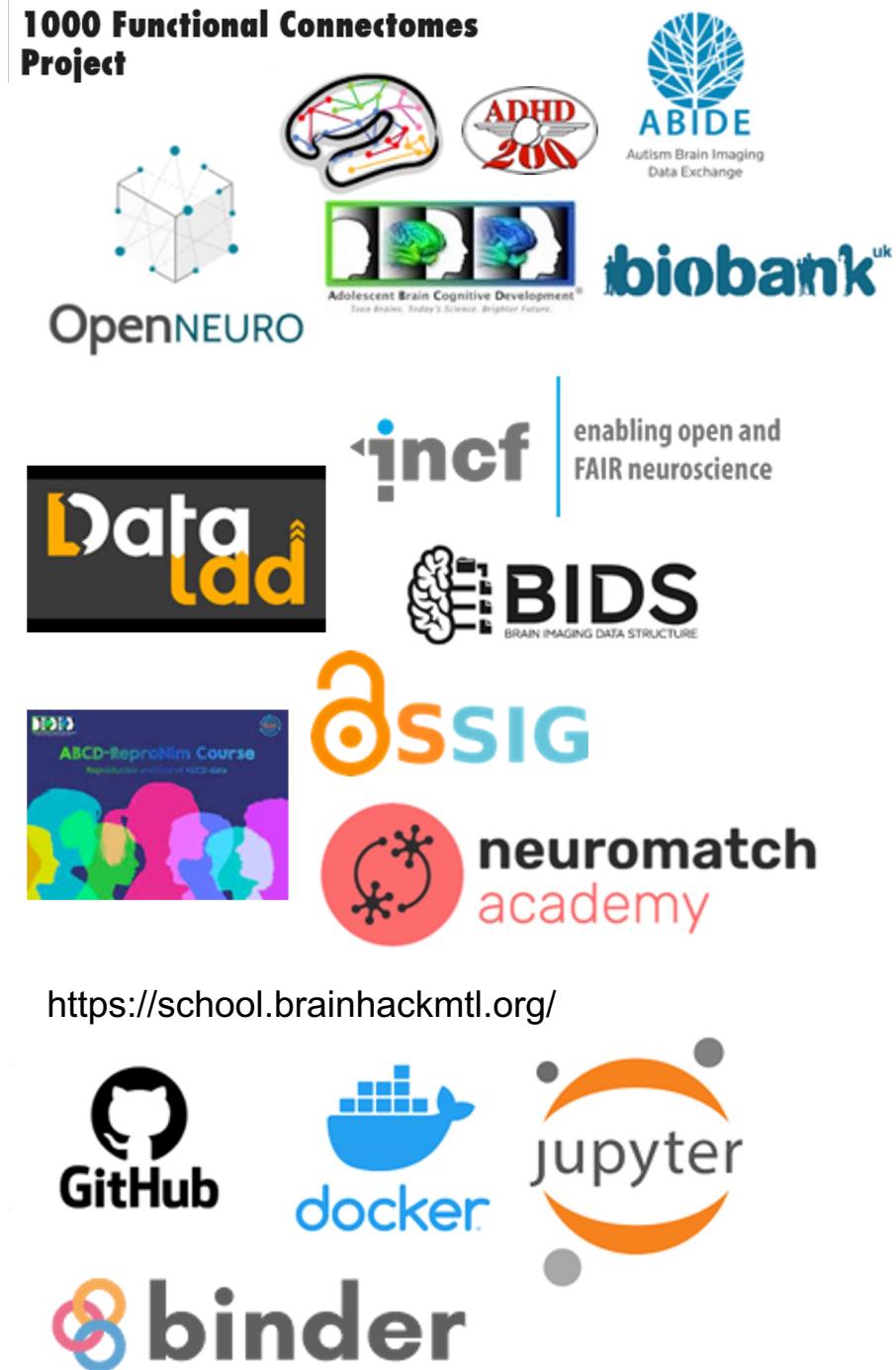


Brainhack: a collaborative workshop for the open neuroscience community

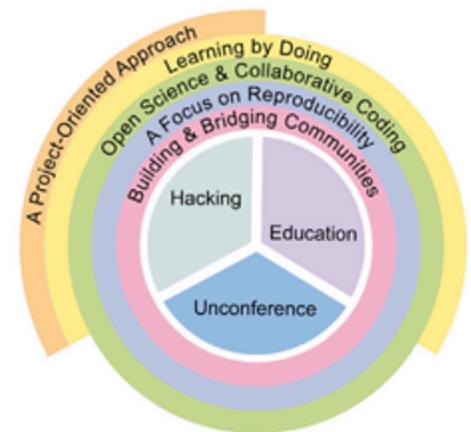
R. Cameron Craddock^{1,2,3*} , Daniel S. Margulies^{1,4}, Pierre Bellec^{1,5,6}, B. Nolan Nichols^{1,7,8}, Sarael Alcauter⁹, Fernando A. Barrios⁹, Yves Burnod^{10,11}, Christopher J. Cannistraci¹², Julien Cohen-Adad^{6,13}, Benjamin De Leener¹³, Sébastien Dery¹⁴, Jonathan Downar^{15,16,17}, Katharine Dunlop^{15,17}, Alexandre R. Franco^{1,18,19,20}, Caroline Seligman Froehlich^{1,2}, Andrew J. Gerber^{21,22}, Satrajit S. Ghosh^{1,23,24}, Thomas J. Grabowski^{25,26}, Sean Hill^{27,28}, Anibal Sólón Heinsfeld²⁹, R. Matthew Hutchison^{1,30}, Prantik Kundu^{1,12}, Angela R. Laird³¹, Sook-Lei Liew^{1,32,33}, Daniel J. Lurie³⁴, Donald G. McLaren^{1,35,36}, Felipe Meneguzzi²⁹, Maarten Mennes^{1,37}, Salma Mesmoudi^{11,38}, David O'Connor³, Erick H. Pasaye⁹, Scott Peltier³⁹, Jean-Baptiste Poline^{40,41}, Gautam Prasad⁴², Ramon Fraga Pereira²⁹, Pierre-Olivier Quirion⁶, Ariel Rokem⁴³, Ziad S. Saad⁴⁴, Yonggang Shi⁴², Stephen C. Strother^{17,45,46}, Roberto Toro^{1,47,48}, Lucina Q. Uddin^{1,49,50}, John D. Van Horn³³, John W. Van Meter⁵¹, Robert C. Welsh^{52,53} and Ting Xu³



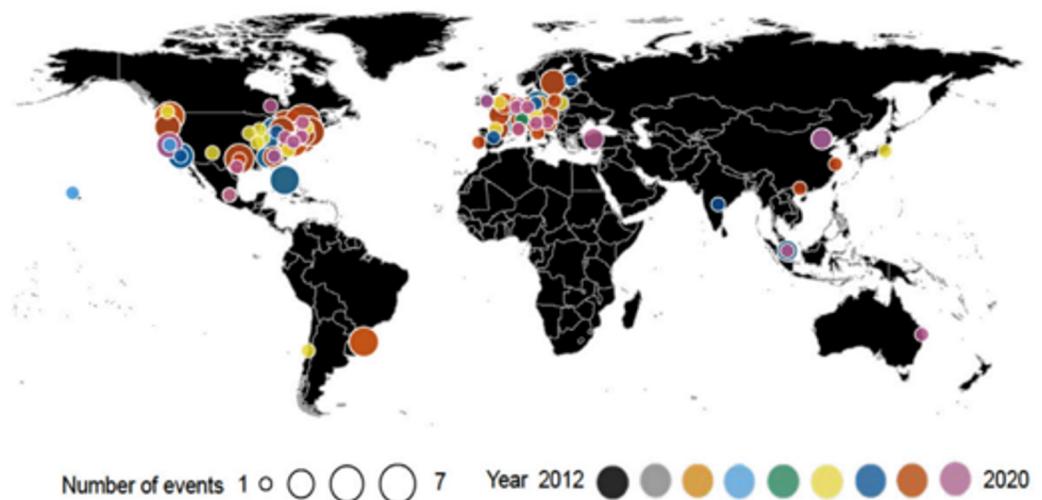
1000 Functional Connectomes Project



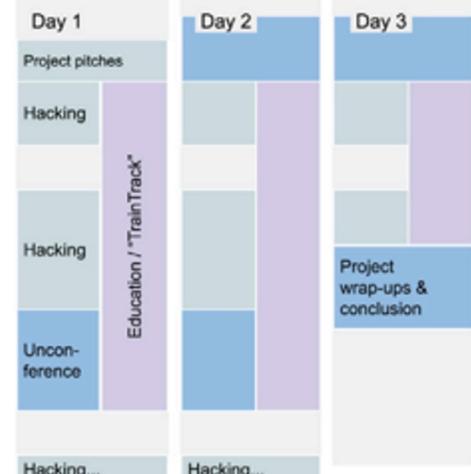
A Anatomy of a Brainhack



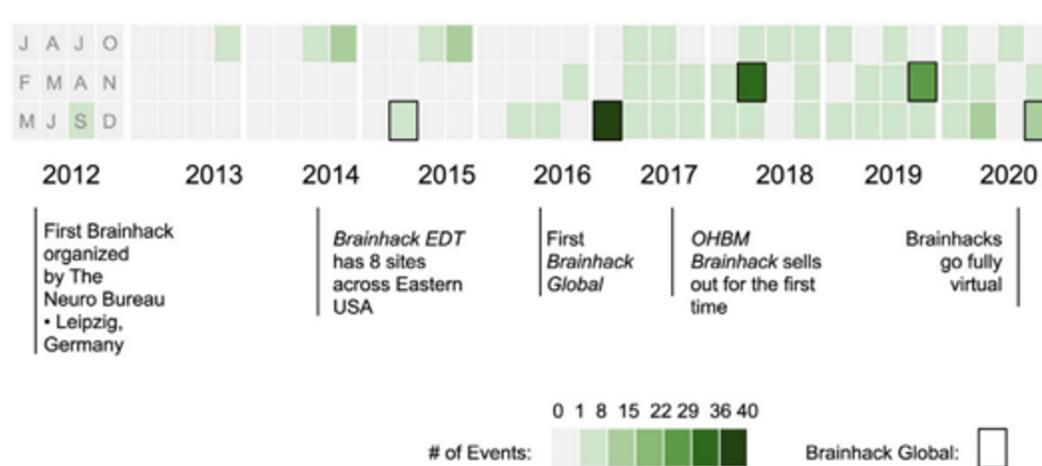
C Brainhack Cartography



B Timeline of a Single Event



D Brainhack Timeline



Gau et al., 2021

Projects @ Brainhack

Neuron



Table 1 Selected examples of Brainhack projects

- A child psychiatrist and a 3D video artist initiated a collaboration at the 2012 Brainhack to develop a movie to be shown to participants during resting-state fMRI scans to reduce head motion in hyperkinetic populations [5, 6].
- The ABIDE Preprocessing Initiative [7] is an ongoing project started at the 2012 Brainhack to share preprocessed versions of the Autism Brain Imaging Data Exchange (ABIDE) dataset [8, 9]. This project is sharing functional data that have been processed using the Connectome Computation System (CCS) [10, 11], the Configurable Pipeline for the Analysis of Connectomes (CPAC) [12, 13], the Data Preprocessing Assistant for Resting State fMRI (DPARSF) [14, 15], and the Neuro Imaging Analysis Kit (NIAK) [16, 17], as well as cortical thickness measures extracted from structural data using FreeSurfer [18, 19], CIVET [20, 21], and Advanced Normalization Tools (ANTS) [22, 23].
- A collaboration started at the 2012 Brainhack performed an analysis to identify differences in cortical thickness and structural covariance between individuals with autism spectrum disorder and neurotypical controls [24].
- A project team at Brainhack 2013 amassed a dataset of 14,781 structural MRI scans to estimate the distribution of brain sizes across individuals for optimizing scan acquisition parameters [25].
- The development team of LORIS, an open source database system for neuroimaging and phenotypic data, have repeatedly used Brainhack as an opportunity to meet and collaborate on new features [26].
- An early version of the Daydreaming app [27], an Android application for real-time assessment of users' mind-wandering, was developed at Brainhack 2013.
- The Clubs of Science [28] project, founded at Brainhack TL 2015, has built a web-based visualization of the social web underlying neuroimaging research.
- The linkRbrain [29] tool for integrating and querying neuroimaging data with activation peaks from the literature and gene expression data was partially developed and first tested at Brainhack 2013 in Paris [30].

Further projects can be found at www.brainhack.org [1]

Craddock et al., 2016

NeuroView

Brainhack: Developing a culture of open, inclusive, community-driven neuroscience

Rémi Gau,^{1,76,*} Stephanie Noble,^{2,76} Katja Heuer,^{3,4,76} Katherine L. Botteman,^{5,76} Isil P. Bilgin,^{6,7,76} Yu-Fang Yang,^{8,76} Julia M. Huntenburg,^{9,76} Johanna M.M. Bayer,^{10,11,76} Richard A.I. Bethlehem,^{12,13,76} Shawn A. Rhoads,¹⁴ Christoph Vogelbacher,¹⁵ Valentina Borghesani,¹⁶ Elizabeth Levitis,^{17,18} Hao-Ting Wang,^{19,20,21} Sofie Van Den Bossche,²² Xenia Kobeleva,^{23,24} Jon Haitz Legarreta,²⁵ Samuel Guay,²⁶ Selim Melvin Atay,²⁷ Gael P. Varoquaux,^{28,29} Dorien C. Huijser,^{30,31} Malin S. Sandström,³² Peer Herholz,³³ Samuel A. Nastase,³⁴ AmanPreet Badhwar,^{16,35,36} Guillaume Dumas,^{37,38} Simon Schwab,³⁹ Stefano Moia,^{40,41} Michael Dayan,⁴² Yasmine Bassil,⁴³ Paula P. Brooks,³⁴ Matteo Mancini,^{20,44,45} James M. Shine,⁴⁶ David O'Connor,⁴⁷ Xihe Xie,⁴⁸ Davide Poggiali,⁴⁹ Patrick Friedrich,⁵⁰

Unlike some traditional hackathons, there is no competitive element to Brainhacks. The focus is on collective and community-driven work, making the events more welcoming for inexperienced participants. Neither the level of completeness nor the publication potential determines the success of a project. Instead, Brainhacks emphasize the value of collaborating, exploring unconventional ideas, group thinking, and building tools that benefit the community. Exemplary of these values is a project that originated at the first Brainhack in 2012: The Brain Catalogue (<https://braincatalogue.org/>) provides magnetic resonance (MR) brain images of a range of different species and allows multiple users to view and segment them on the web simultaneously. Its successor, BrainBox (<https://brainbox.pasteur.fr/>), has evolved to enable real-time collaborative segmentation of any MR image accessible online (Heuer et al., 2016). BrainBox has been used in many subsequent Brainhack projects, research collaborations, and science outreach events. Similarly, braindr (<https://braindr.us>) fosters citizen science while solving visual quality control for massive datasets (Keshavan et al., 2019). This app enables anyone to contribute to scientific progress by swiping left or right on brain images to classify them as clean or corrupted. The project originated from a hackathon in 2017, was extended in a Brainhack project in 2018, and recently led to the development of the extensible SwipesforScience (<https://swipesforscience.org/>) citizen science template.

Gau et al., 2021



SEARCH PROJECTS

+SUBMIT PROJECT

EVENTS

PROCEEDINGS -

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CODE OF CONDUCT

BrainHack Global 2019

NeuroData Workshop 2019

1st Computational R

Brainhack Donostia 2019

Brainhack Open Geneva 2019

Brainhack in Padova: Evolution

LA BrainHack 2018

Brainhack Zurich 2018

OHBM Brainhack 2019

BrainHack Networks 2018

Brainhack Global 2018

Brainhack Paris: Anatomy 2018

BrainHack Global 2017

Brainhack Gradients, Leipzig 2017

Brainhack: Lesions. Paris 201

Brainhack Ghent 2017

BrainHack London - Clinical Neuroanatomy 2017

Deep Brainhack (Montreal) 2017

AoN Brainhack Warsaw 2017

Brainhack DC 2017

Brainbook: Anatomy, Paris 2016

DHBM Hackathon 2016 (Lausanne)

BrainHack Vienna 2016

BrainHack IA 2016

OHRM Hackathon 2015 (Honolulu)

What happens during a Brainhack?



Ice breaking



Ignite talk
Tutorials



Project pitches
Hacking & Unconference



Project wrap-up

	Day 1 (2022/8/27) 周六	Day2 (2022/8/28) 周日
08:30 - 09:00	Ice-breaking	视频早餐 (送咖啡)
09:00 - 09:20	TrainTrack 徐婷(CMI) <i>About Hackathon</i>	Lighting talk Jean-Baptiste Poline (McGill Uni)
09:20 - 09:50	胡传鹏(南京师范大学) <i>Basics of statistical Power</i>	
10:00 - 10:10	Break	HackTrack
10:10 - 10:50	HackTrack Projects pitch	
10:50 - 11:00	Break	Hacking
	Lighting talk	
11:00 - 11:50	左西年(北京师范大学)	
12:00 - 13:30	Lunch break	Lunch break
13:30 - 14:10	Hacking	HackTrack
	TrainTrack 王庆 (McGill Uni) <i>Hackathon Essentials</i>	
14:20 - 15:10		Hacking
15:10 - 16:30	Hacking	
16:30 - 17:00	Interim summary	Closing presentation
17:00 - 19:30	Dinner break	
	Optional round table talk 主题待定	NA
19:30 - 21:00		

CODE OF CONDUCT

Brainhack is dedicated to providing a harassment-free Brainhack experience for everyone, regardless of gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, race, age or religion. We do not tolerate harassment of event participants in any form. Sexual language and imagery is not appropriate for any event venue, including talks. Event participants violating these rules may be sanctioned or expelled from the event without a refund at the discretion of the event organizers.

Harassment includes, but is not limited to:

- Verbal comments that reinforce social structures of domination related to gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, race, age or religion.
- Sexual images in public spaces
- Deliberate intimidation, stalking, or following
- Harassing photography or recording
- Sustained disruption of talks or other events
- Inappropriate physical contact
- Unwelcome sexual attention
- Advocating for, or encouraging, any of the above behaviour



Mattermost®

<https://cosn.cloud.mattermost.com>



<https://mattermost.brainhack.org>



The screenshot shows the COSN Mattermost interface. On the left, there's a sidebar with channels like COSN, Off-Topic, TAs, Town Square, and Direct Messages. The main area shows the 'Town Square' channel with a pinned post from Bill Shi_OC welcoming everyone to the COSN Summer Hackathon 2022. A search overlay titled 'Find channel' is open, with a red circle highlighting the search bar. A green arrow points from the 'Find channel' button in the sidebar to the search bar in the overlay.

Town Square

8:03 AM 1 Bulletin board. [wayne joined the team.](#)

Start call [Open](#)

Tuesday

传鹏-组委会) 9:38 AM [/index.php/server/preprint/view/184](#)
d to reproduce every power analysis reported in articles ($k = 84/635$) in three motor between January 2019 and June 2021. We reproduced 7% of analyses using the reported increased to 43% when we assumed plausible values for missing parameters."

others joined the team.

Yesterday

Hu Chuan-Peng (胡传鹏-组委会) 3:09 AM 欢迎各位新加入的小伙伴，希望大家加入“自我介绍”的channel 向大家介绍你自己哦

System 10:35 AM @syshi joined the team.

Bill Shi_OC 12:13 PM Hello everyone!

August 03

Town Square

Bill Shi_OC 2:03 AM Welcome to COSN Summer Hackathon 2022!
Please remember to join Channels, including #
自我介绍, #项目介绍, & #TAs. (You may refer to
the instruction attached in the Welcome email.)
If you have any questions or suggestions, please
feel free to post them on #Off-Topic. We will try
our best to help you.
Don't forget to say hi to others! We are excited
to meet you!

Welcome to Mattermost

Let's get up and running.

Take a tour of channels

Manage tasks with your first board

Explore workflows with your first Playbook

Invite team members to the workspace

Download the Desktop and Mobile Apps

Complete your profile

No thanks, I'll figure it out myself

6

https://cosn.cloud.mattermost.com/main/messages/@feedbackbot

<http://etc.ch/wfp2>



Result: <https://directpoll.com/r?XDbzPBd3ixYqg86TBsLpkT2dze1gCNvREgKXwcwd>

[SEARCH PROJECTS](#)[+SUBMIT PROJECT](#)[EVENTS](#)[PROCEEDINGS](#)[LEARN MORE](#)[JOIN MATTERMOST CHANNEL](#)[CODE OF CONDUCT](#)

- Brainhack Introduction by Cameron Craddock

https://www.youtube.com/watch?v=k6_cRd86RNY

- Guideline for Leading and Attending to Brainhack Projects

https://github.com/brainhackorg/bhg-event-materials/blob/master/docs/leading_and_attending_to_brainhack_projects.md

- Brainhack YouTube Channel

<https://www.youtube.com/c/brainhackorg>

- Brainhack Book

https://brainhack.org/brainhack_jupyter_book/index.html

Craddock et al. *GigaScience* (2016) 5:16
DOI 10.1186/s13742-016-0121-x

GigaScience

REVIEW

Open Access

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the open neuroscience community



Neuron

CellPress

NeuroView

Brainhack: Developing a culture of open,
inclusive, community-driven neuroscience