



Co-funded by
the European Union

Open Neuroscience Research Data through EBRAINS

Delivering on the FAIR, TRUST and CARE principles

Jan G. Bjaalie, MD PhD

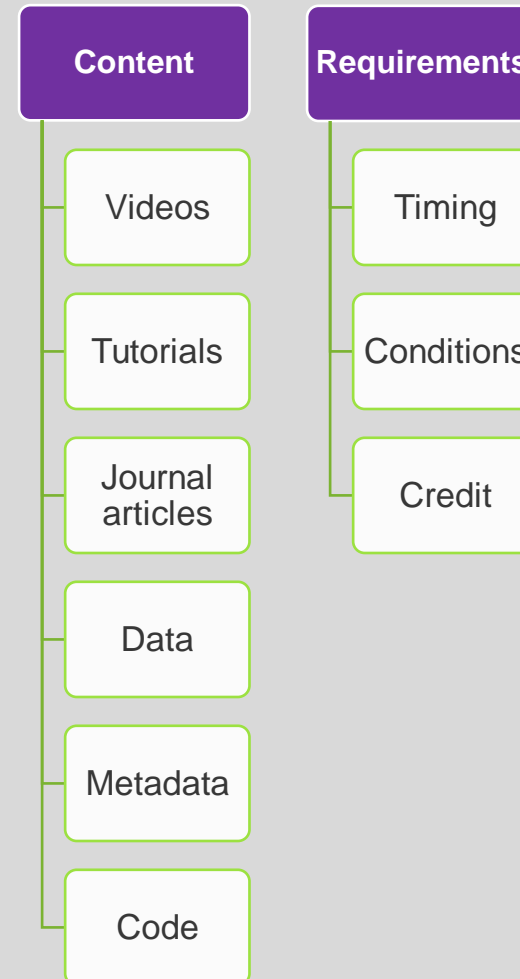
EBRAINS Data and Knowledge leader
EBRAINS Management Board Member
Former Infrastructure Director Human Brain Project 2019 -2023
Professor, Institute of Basic Medical Sciences, University of Oslo
Dean of Research and Innovation, Faculty of Medicine, University of Oslo

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J.G. Bjaalie

Open Science

What is Open Science?

- ***"Open science is a research accelerator"***
(Woelfle, M. et al, Nature Chemistry 2011)
- ***".... scientific knowledge of all kinds should be openly shared as early as is practical"***
(openscienceasap.org)





Open Science, EU initiatives



EN English

Search

Home > Research and innovation > Strategy > Strategy 2020-2024 > Our digital future > Open Science

Open Science

An approach to the scientific process that focuses on spreading knowledge as soon as it is available using digital and collaborative technology. Expert groups, publications, news and events.

PAGE CONTENTS

The EU's open science policy

Ambitions:

- Open data
- EOSC
- New metrics
- Rewards
- Open access
- Research integrity & reproducibility
- Education and skills
- Citizen science

Aims for open science policy under Horizon Europe

- ensure that beneficiaries retain the intellectual property rights
- require research data to be FAIR and open by default (with exceptions notably for commercial purposes)
- promote the adoption of open science practices
- engage and involve citizens, civil society organisations and end-users
-

Drivers of science: Ideas - Tools - Data

- **Ideas - or “systems of ideas” (paradigms)**
 - Change: gradual or sudden - new ideas replacing old ones (paradigm shift)
 - Top down: “Ideas based on equations”
 - Bottom up: “Ideas based on experiments”
- **Tools**
 - New instruments producing digital output / data with vastly improved precision, or enabling new type of measurements
 - Software for digital data processing
 - Computing capacity
- **Data**
 - The outputs from the instruments
 - The outputs from the data processing





The importance of access to data: data integration

- Combining data from different sources into a single, unified view
- The most complex topics in neuroscience can only be studied by combining information from different levels of investigations (many methods, different granularity / spatial scales)
- Answering specific research questions / performing hypothesis driven research (topic or question determined before the research is performed)
- Data driven research (topic or question determined based on what is found in the data collections)
- Integration begins with access to interpretable and actionable data and ultimately enable data analysis aimed at acquiring knowledge



What is FAIR, TRUST, and CARE?

The principles of data sharing

Data repositories

- T ransparency
- R esponsibility
- U ser focus
- S ustainability
- T echnology

Lin et al., Sci Data 2020

Data and metadata

- F indable
- A ccesible
- I nteroperable
- R eusable

Wilkinson et al., Sci Data 2016

Data governance

- C ollective benefit
- A uthority to control
- R esponsibility
- E thics

Carroll et al., Data Science Journal 2020



What are the contributions of EBRAINS to data sharing according to the FAIR, TRUST, and CARE principles?

- **Enable collaborative neuroscience through FAIR data.** Provide professionally maintained and user-friendly mechanisms for making data FAIR as well as reusable with **easily accessible tools and workflows**
- **Support multimodal data integration.** Systematic use of semantic and spatial (atlas) metadata
- **Foster data and metadata harmonisation.** Curation and harmonisation of data and metadata acquisition for a range of foundational data types; data integrity, comparability and reliability across studies
- **Accelerate the adoption of data sharing services** by strategically concentrating efforts on **prioritized data and workflow categories**
- **Promote a responsible open science culture** - transparency, reproducibility, and replicability - while ensuring ethical and lawful sharing through a **data governance structure** based upon People, Processes and Technology (PPT)



EBRAINS is providing a strong data sharing platform with 3 main user facing services

Share data, models and software

Request curation



Deliver your data and metadata



Metadata is curated



Data published on EBRAINS



KG Automation
Automate your processes



KG Editor
Manage & publish your metadata

Find neuroscience data, models and tools

Explore data in the Knowledge Graph



KG Search
Search and use data



KG Query Builder
Collect metadata with queries



KG Statistics
Visualize the graph



KG Core API & SDKs
Programmatic access

Live Papers

Learn more



Structured and interactive supplementary documents to complement journal publications



An efficient analytical reduction of detailed nonlinear neuron models



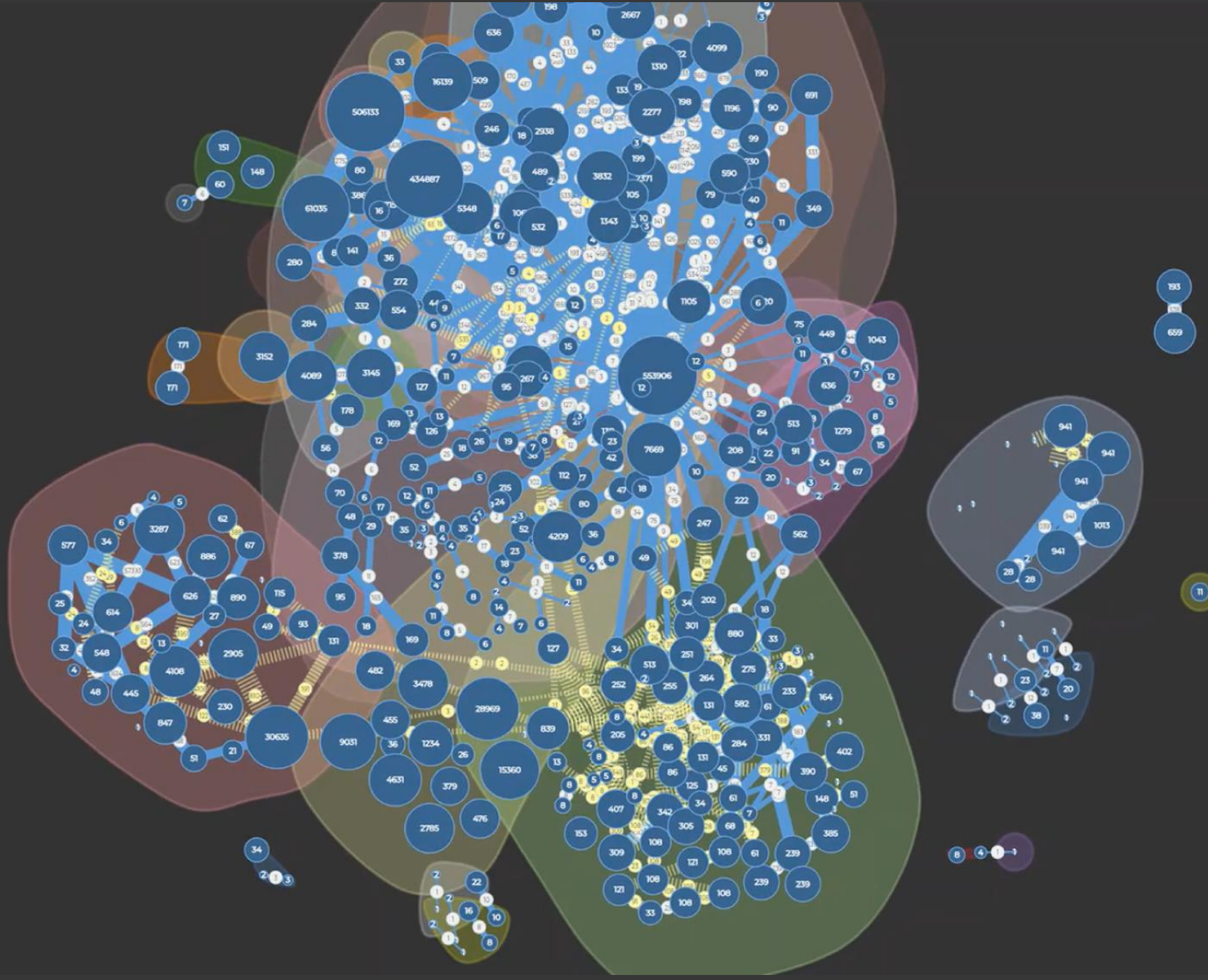
Amsalem et al. (2020) [Live Paper] DOI:10.25493/1D2M-CV0



The microcircuits of striatum in silico



Hjorth et al. (2020) [Live Paper] DOI:10.25493/RR3S-54



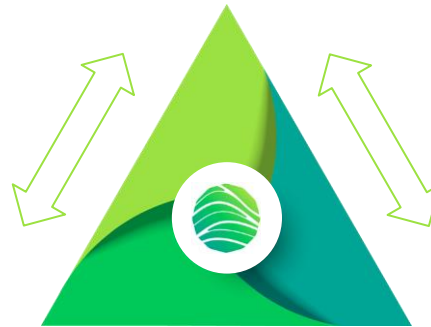
The foundational triangle



Integrative development of metadata framework and graph database management system

Joint development of tools and workflows for data and metadata submission and quality control

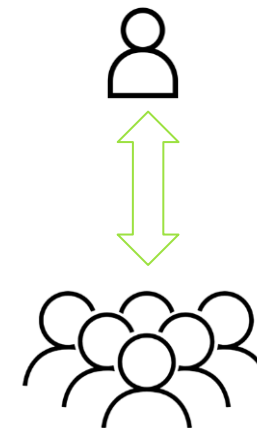
Knowledge Graph



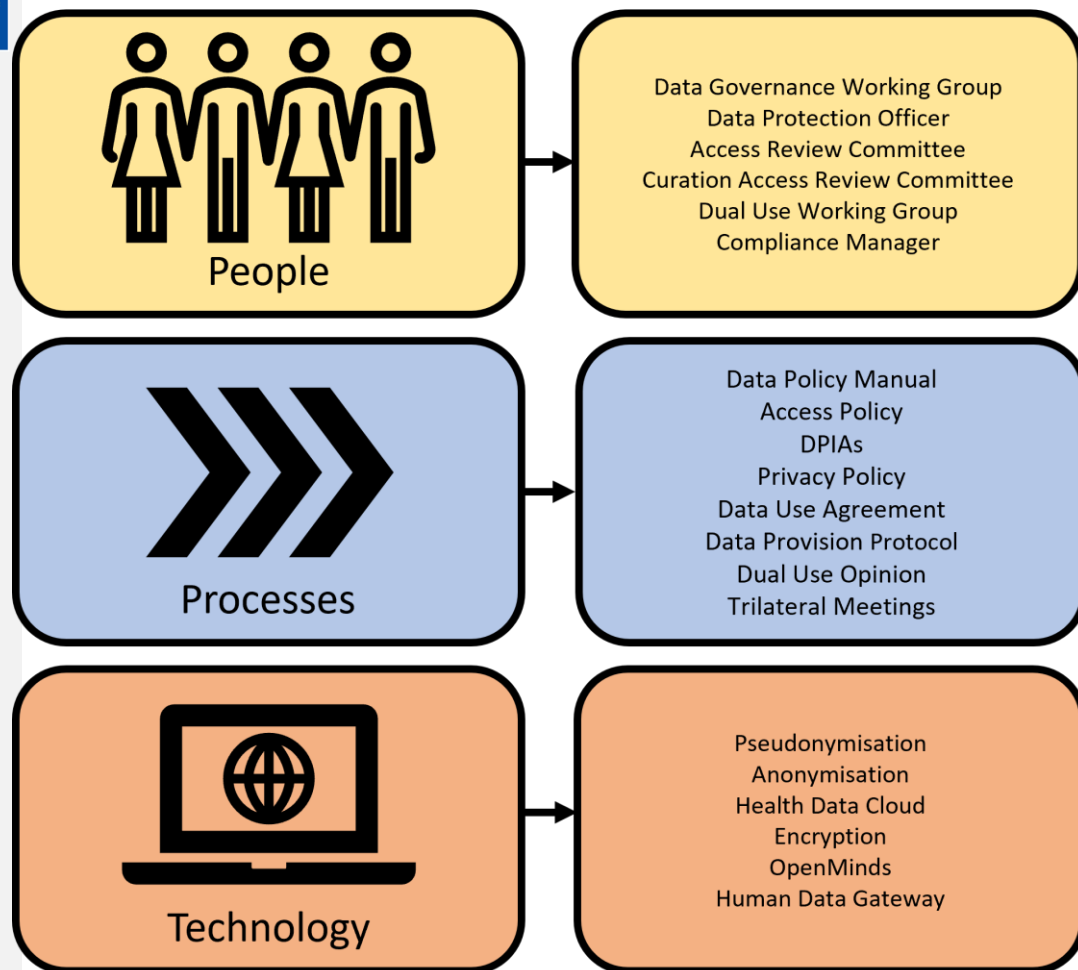
Metadata framework

Curation Service

Collaborative development of metadata framework and ontology-driven terminologies



The 4th component: EBRAINS Compliance Management, Data Governance and Data Protection



EBRAINS has developed and implemented a data governance structure based upon **People**, **Processes** and **Technology** (PPT).

- **People** – stakeholders involved in all EBRAINS data processing pipelines.
- **Processes** - policies, procedures and practical processes set up to ensure responsible data governance.
- **Technology** - technologies developed and applied in EBRAINS workflows.

Built upon these three pillars, EBRAINS complies with its ethical, legal and professional responsibilities, including compliance with GDPR.



The SHARE data service

The screenshot displays the EBRAINS website interface. At the top, the EBRAINS logo is on the left, and navigation links for Infrastructure, About, Focus areas, News & events, and Contact are on the right. Below this is a secondary navigation bar with categories: Data, Brain atlases, Modelling, simulation & computing, Validation & inference, and Health research platforms. A left sidebar contains a 'Share data' dropdown menu with options 'Get started' and 'Share data process', along with links for 'Live Papers', 'Computing', and 'Collaboratory'. The main content area features a large heading 'Integrate and share your data' followed by a paragraph explaining the data curation process. Two buttons, 'Request curation' and 'FAIR Guiding Principles', are prominently displayed. Below this is a vertical list of six steps: Submission, Review, Acceptance, Integration, Publication, and In-depth integration, each with a brief description and a dropdown arrow.

EBRAINS

Infrastructure About Focus areas News & events Contact

Data Brain atlases Modelling, simulation & computing Validation & inference Health research platforms

Find data >

Share data >

- Get started
- Share data process

Live Papers >

Computing >

Collaboratory >

Integrate and share your data

The EBRAINS data curation process involves several steps to ensure that datasets, computational models, and software are properly annotated with metadata and can be easily discovered and reused by the research community.

[Request curation](#) [FAIR Guiding Principles](#)

Submission Fill out a request by clicking 'Request curation' at the top of this page to begin the process of sharing your data through EBRAINS....

Review You will be notified whether EBRAINS accepts the curation request within 5 working days after the submission of the request form.

Acceptance If your request is accepted, you will be notified by email. You will be assigned a personal curator to follow you through the process of releasing your dataset, model or software on the...

Integration Integration primarily consists of registering metadata following the openMINDS metadata format, writing a data descriptor for enhancing the reuse of your dataset and file...

Publication When your metadata and files are integrated, you are invited to review how this will look upon release. After we receive your approval, a DOI is assigned and your dataset, model or...

In-depth integration The Data Curation team is continuously expanding the metadata ontology to enable registration of more detailed metadata. Therefore, it will be possible to add more in-depth...



Why metadata?

- Give context to dataset, models and software
- Transform unstructured information into structured information
- Create relations between datasets
- Increase the findability and interoperability
- ... when standardized ...

openMINDS: open Metadata Initiative for Neuroscience Data Structures



<https://wiki.ebrains.eu/bin/view/Collabs/openminds>

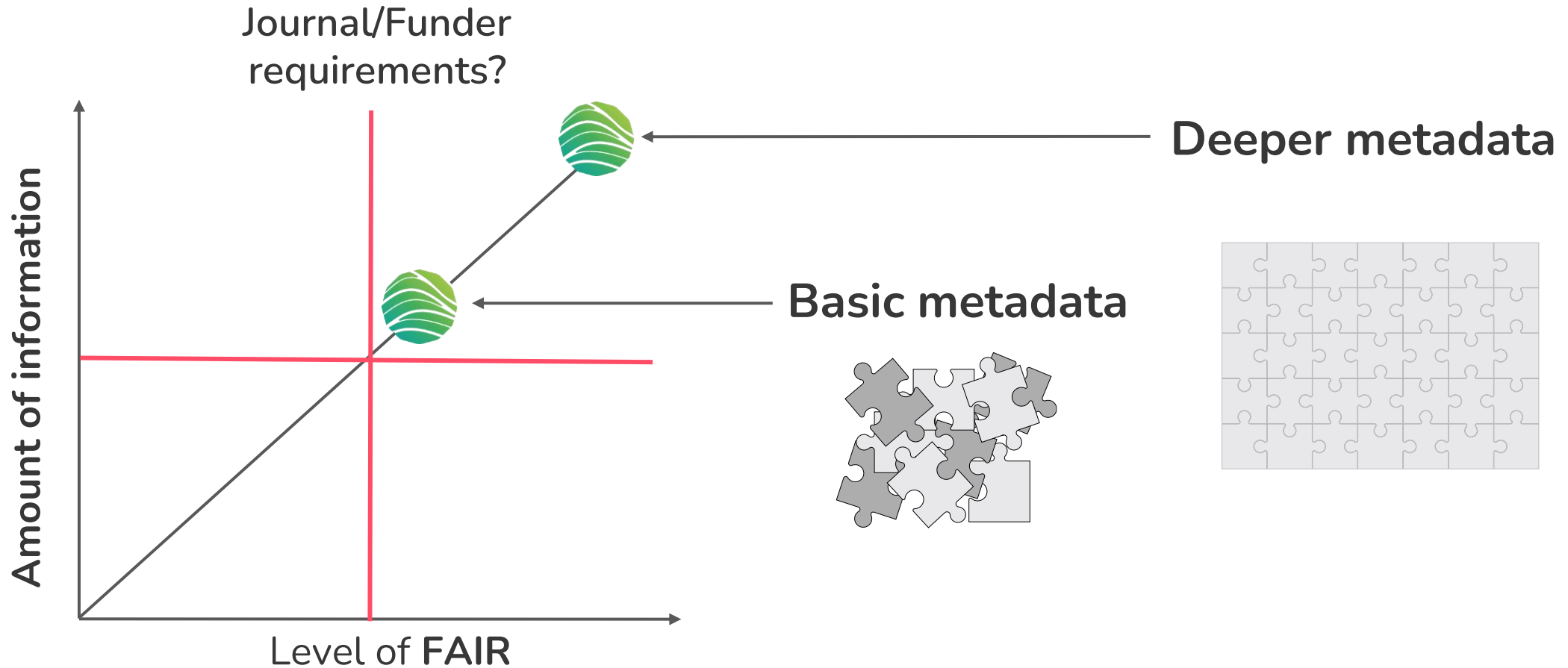


<https://github.com/HumanBrainProject/openMINDS>



openminds@ebrains.eu

How much metadata should be provided? (depth of curation)





Levels of sharing: non-sensitive data

Data freely accessible	Data under embargo	Data temporarily hidden
<ul style="list-style-type: none">● DOI for your data● Data is discoverable● Data is accessible for download and reuse	<ul style="list-style-type: none">● URL for your data● Metadata is discoverable● Data is inaccessible until publication	<ul style="list-style-type: none">● Private URL for reviewers● Dataset is not discoverable● Data is inaccessible until publication

Publish a dataset in parallel to submitting a peer-reviewed journal publication



Levels of sharing: sensitive data

Anonymous metadata findable: Controlled access to the sensitive data

- User will have to be identified through an EBRAINS account
- Terms of use to be accepted
- User gets temporary access to data in EBRAINS storage for download
- All user activity is tracked

Anonymous metadata findable: Restricted access to the sensitive data


- User will have to be identified through an EBRAINS account
- User will be provided with instructions on how to apply for access
- Data not hosted by EBRAINS but by a trusted repository interacting with EBRAINS
- Metadata is discoverable

Publish anonymous metadata – make data discoverable



What motivates researchers to share data through EBRAINS?

- My funding agency requests that I share my research data. Can I get more out of this?
 - Get more citations / credit (citable DOI)
 - Communicate the conditions for use (license)

 Download Dataset

 Cite dataset

 Data-descriptor

DOI:  10.25493/D2CW-JR

License: [Creative Commons Attribution-NonCommercial-ShareAlike](#)

Project: [Macaque Brain Atlas](#)

Custodians:  [Palomero-Gallagher, Nicola](#)



What motivates researchers to share data through EBRAINS?

- I would like to make my data available together with a journal publication. Can EBRAINS Data and Knowledge services deliver a solution?
- Track for publishing research data alongside a journal article
- Special track for journals publishing Data descriptors, including Nature Scientific Data

SHARE DATA - GUIDELINES

Publishing a Dataset that Accompanies a Peer-Reviewed Journal Publication



What motivates researchers to share data through EBRAINS?

- The data from my research is of a foundational nature. I want to easily find back to my own data and also make sure the data can be used in future research. Why should I use EBRAINS Data and Knowledge services?
- I am looking for research data to complement my own research. Where should I look?
- Curation of metadata to increase discoverability and opportunities for re-use
- Specialized service for neuroscience, metadata standard for neuroscience data
- Advanced discoverability: Search interface and programmatic access



What motivates researchers to share data through EBRAINS?

CONTRIBUTOR
Bjerke, Ingvild E.

Custodian of datasets
Dataset contributions
Software contributions
Citations

EBRAINS KG Datasets citations:

3D atlas location of rat cortical neuron reconstructions v1
Reiten, I., Blixhavn, C. H., Bjerke, I. E., Puchades, M. A., & Leergaard, T. B. (2023). 3D atlas location of rat cortical neuron reconstructions (v1) [Data set]. EBRAINS. <https://doi.org/10.25493/CBTH-1G9> [Download as bibtex](#)

3D atlas locations of epidural electrode EEG recordings in rats v1
Blixhavn, C. H., Reiten, I., Ovsthus, M., Bjerke, I. E., Puchades, M. A., & Leergaard, T. B. (2023). 3D atlas locations of epidural electrode EEG recordings in rats (v1) [Data set]. EBRAINS. <https://doi.org/10.25493/AK1G-WQQ>

Future CV



The FIND data service



SEARCH

CATEGORIES

Project	127
Dataset	1086
Model	256
(Meta)Data Model	4
Software	226
Web service	18
Contributor	2264

Viewing 1-20 of 1086 results.

Top trending

Human Connectome Project Young Adult fMRI time series, structural and functional connectomes (v1.0)

Released: 2024-06-27

Accessibility: restricted access

Custodians: Ritter, P.

This data set contains structural and functional connectivity and region-average fMRI time series from 785 participants of the Human Connectome Project (HCP) Young Adult S900 data set. HCP builds network maps (connect...

anatomical parcellation technique brain brain mapping connectome connectome-to-atlas mapping five-tissue-type segmentation fMRI time series functional connectivity image distortion correction image registration signal filtering techniques structural connectivity The Virtual Brain (TVB) track aggregation tractography ...

Top trending

Julich-Brain Atlas, cytoarchitectonic maps

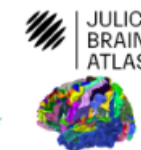
Released: 2024-06-23

Accessibility: free access

Custodians: Amunts, K.

The Julich-Brain Atlas (RRID:SCR_023277) presents in this dataset cytoarchitectonic maps in several coordinate spaces, such as MNI Colin 27, MNI ICBM 152, and Free Surfer FsAverage-7. These maps originate from peer-re...

anatomical parcellation technique brain brain mapping cytoarchitectonic mapping magnetic resonance imaging maximum probability projection silver staining



Top trending

The Digital Brain Tumour Atlas - an open histopathology resource (v1.0)

Released: 2022-01-20

Accessibility: controlled access

Custodians: Roetzer-Pejrimovsky, T.

Currently, approximately 150 different brain tumour types are defined by the WHO. Recent endeavors to exploit machine learning and deep learning methods for supporting more precise diagnostics based on the histologica...

brain cancer clinical annotated tissue H&E staining high-resolution scanning histopathology qualitative analysis quantitative analysis tumour

Top trending

Julich-Brain Atlas - whole-brain collections of cytoarchitectonic probabilistic maps (v2.9)

Released: 2021-10-12

Accessibility: free access

Custodians: Amunts, K.

This dataset provides a complete collection of all published probability maps of the Julich-Brain Cytoarchitectonic Atlas in the MNI Colin 27 and / or the MNI ICBM 152 (2009c Nonlinear Asymmetric) coordinate space. T...

brain brain mapping cytoarchitectonic mapping magnetic resonance imaging probabilistic anatomical parcellation technique silver staining

CATEGORIES

Project

127

Dataset**1086**

Model

256

(Meta)Data Model

4

Software

226

Web service

18

Contributor

2264

CATEGORIES

Project	27
Dataset	520
Model	4
Software	10
Web service	1
Contributor	58

FILTERS

Reset

ACCESSIBILITY

<input type="checkbox"/> free access	489
<input type="checkbox"/> under embargo	25
<input type="checkbox"/> controlled access	5
<input type="checkbox"/> restricted access	1

Viewing 1-20 of 520 results.

Did you mean [main](#), [mann](#) or [map](#)?

Top trending

Julich-Brain Atlas, cytoarchitectonic maps

Released : 2023-07-13

Accessibility : free access

Custodians : Amunts, K.

This dataset contains the Julich-Brain Atlas, Cytoarchitectonic **maps** in different coordinate spaces....

- anatomical parcellation technique
- brain
- brain mapping
- cytoarchitectonic mapping
- magnetic resonance imaging
- maximum probability projection
- silver staining

New

Contrast maps obtained from Individual Brain Charting





Badges

DATASET  



Anterogradely labeled axonal projections from the insular cortex in rat (v1) ← Versioning

Mathiasen, M. L.; Hansen, L.; Monterotti, B.; Laja, A.; Reiten, I.; Leergaard, T. B.; Witter, M. P.

Overview

Data descriptor

How to cite

Get data

Publications

Specimens

Related resources

How to use

DOI:  10.25493/WK4W-ZCQ

Released:  2020-04-02

Accessibility: free access

License: [Creative Commons Attribution 4.0 International](#)

Ethics assessment: EU-compliant

Project:

The efferent connections of the orbitofrontal, posterior parietal, and insular cortex of the rat brain

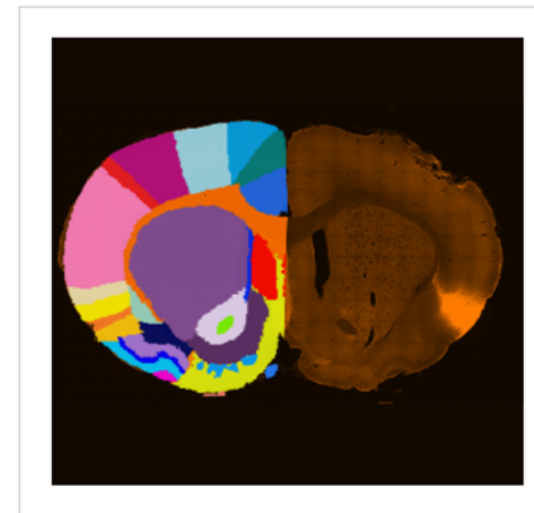
Custodians:  Witter, M. P.

High-resolution fluorescence microscopy images of serial coronal brain sections showing anterogradely labeled axons originating from different parts of the insular cortex in adult female Sprague Dawley rats. The dataset includes image series from 8 brains in which one or both of the anterograde tracers biotinylated dextran amine (BDA) and *Phaseolus vulgaris Leucuagglutinin* (PHA-L) were injected into different subregions of the insular cortex, always in the right hemisphere. Discrete injections were placed in the agranular (AI), dysgranular (DI) or granular (GI) subdivisions of the insular cortex. Brain sections were 50 μm thick and sampled every 300 μm. The data provides an overview of the efferent connections of the rat insular cortex.

Version specification: This is the first version of this dataset.

View data in LocaliZoom:


- [tissue sample collection \(subject 12949_BDA\)](#)
- [tissue sample collection \(subject 13018_PHAL\)](#)



← Preview image

Studied brain region:

insular region (Waxholm Space Rat Brain Atlas)

Anat. location of tissue samples: 

brain (Waxholm Space Rat Brain Atlas)

Preparation:

- [ex vivo](#)
- [in vivo](#)

Experimental approach:

- [anatomy](#)
- [microscopy](#)
- [histology](#)
- [neural connectivity](#)

Anatomical localization of data

Controlled ontology driven annotations

Service links (e.g. atlas viewer)



Anterogradely labeled axonal projections from the insular cortex in rat (v1)

Mathiasen, M. L.; Hansen, L.; Monterotti, B.; Laja, A.; Reiten, I.; Leergaard, T. B.; Witter, M. P.

Overview

Data descriptor

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Related resources

How to use

Programmatic access to metadata :

To make programmatic use of the (meta-)data of EBRAINS, you have different options to interact with the [EBRAINS Knowledge Graph \(KG\)](#):

KG Query Builder

With the [KG Query Builder](#), you can design your own query to retrieve metadata for this instance and those of the same type conveniently via UI without the requirement of learning a graph query language (see the [tutorial](#)). You can also save the query and use it with the REST-API and the KG Core SDKs (see below).

[Build a query for this instance](#)

KG REST-API

You can use the [KG REST-API](#) to access and/or manipulate metadata on the EBRAINS KG as well as to run queries saved previously in the KG Query Builder.

KG Core SDKs

The [KG Core SDKs](#) provide convenient ways to authenticate and make use of the functionality of the KG REST-API with your favorite programming language (currently available for Python and JavaScript/TypeScript).



Programmatic access to metadata in the Knowledge Graph

Can I get more fMRI data of stroke patients in BIDS?

Who else does research on this particular brain region?

Do they have these type of measurements in other species?

What is the typical age range of monkeys performing a specific type of behavioral training?



1. Research question

2.  KG Query Builder *

3. Query from script



KG Core API & SDKs *

4. Review results

5. Download & reuse data

- Build complex queries tailored to your research questions
- Receive easily reusable results in standard format
- Set up fast & reproducible computational workflows
- Automate data analysis using software specific to your analytical needs
- Perform large scale meta-analyses over hundreds of datasets
- Gather training data for your machine learning model
- Find EBRAINS software to visualize your results based on content type

* New in M22-M42



A data journey in EBRAINS

DATASET

Excitability profile of CA1 pyramidal neurons in APPPS1 Alzheimer disease mice and control littermates (v1)

Salgueiro-Pereira, A. R.; Marle, H.

DOI: 10.25493/YJFW-HPY
 License: [CC BY 4.0](#)
 Study target: [Alzheimer's disease](#)
 Species: [Mus musculus](#) (13 subjects)
 Technique:

- [whole cell patch clamp](#)
- [current clamp](#)

WEB SERVICE

NeuroFeatureExtract (v2.1.1)

Bologna, L. L.; Smiriglia, R.; Curreri, D.; Migliore, M.

Accessibility: free access

SOFTWARE

NEURON (7.7.2)

Moore, J. W.; Hines, M.; Carnevale, T.

License: [The 3-Clause BSD License](#)

MODEL

Age-dependent excitability of CA1 pyramidal neurons in APPPS1 Alzheimer's model (v1)

Migliore, R.; Vitale, P.


Published in: <https://modeldb.science/266848>
License: [CC BY-NC 4.0](#)
Model scope: [single cell](#)
Abstraction level: [spiking neurons: biophysical](#)
Study target:

- [Mus musculus](#)
- [hippocampus CA1 pyramidal neuron](#)
- [Alzheimer's disease](#)

 **Analysis of Age-Dependent Alterations in Excitability Properties of CA1 Pyramidal Neurons in an APPPS1 Model of Alzheimer's Disease**

Vitale et al. (2021) [Article] DOI: 10.3389/fnagi.2021.668948

STATIC PUBLICATION

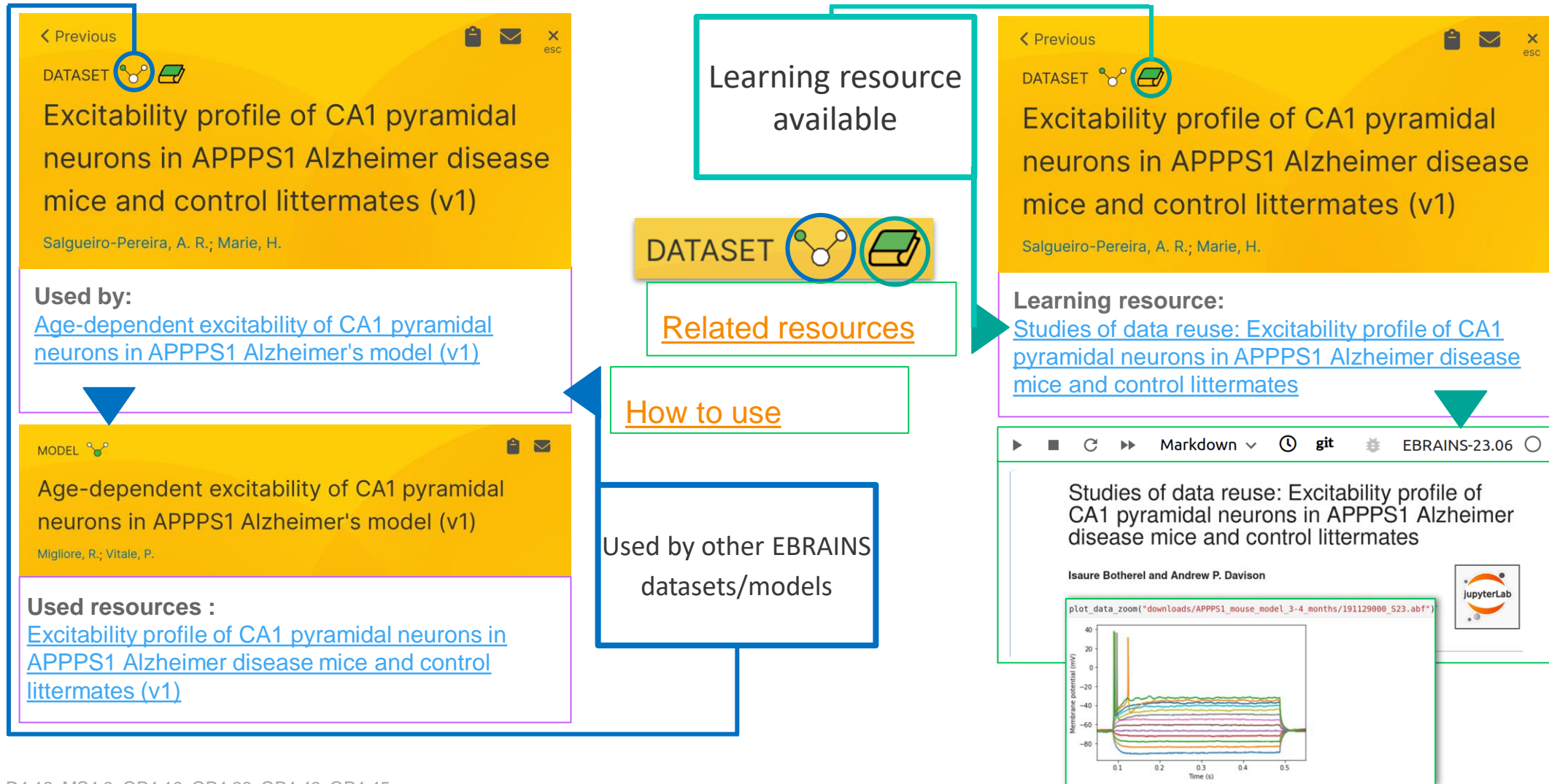
 **Analysis of Age-Dependent Alterations in Excitability Properties of CA1 Pyramidal Neurons in an APPPS1 Model of Alzheimer's Disease**

Vitale et al. (2021) [Live Paper] DOI: 10.25493/D4PT-QNB

INTERACTIVE PUBLICATION



KG-enabled integration across EBRAINS services





Semantic data integration within and beyond EBRAINS through tags with ontology-driven controlled terminology

Dataset cards are annotated with controlled terms

DATASET

The Swedish National Facility for Magnetoencephalography Parkinson's Disease Dataset (v1.0)

DOI: 10.25493/NMD2-2FW

Study targets: [Parkinson's disease](#) **1**

Controlled terms linked to external resources openMINDS service

DISEASE

Parkinson's disease

[Interlex](#) **2** [Knowledge Space](#) **3**

Controlled terms are linked to detailed ontologies

InterLeX **FDI Lab** FAIR Data Informatics **2**

Parkinson disease

A progressive degenerative disorder of ...

Synonym(s)	Ontology identifiers
paralysis agitans; Parkinson's disease	MONDO:0005180 ILX:0764151 DOID:14330

Ontology terms create linkages across databases

Knowledge Space **incf** **3**

[EBRAINS](#) 16 results [OpenNEURO](#) 29 results

[SPARC](#) 3 results [CONP Portal](#) 12 results

T4.1, T4.2, T4.3, T4.4, D4.12, MS4.3, OP4.19, OP4.28, OP4.29, OP4.43, OP4.45

Slide courtesy of L. Zehl

EBRAINS metadata standard developed in partnership with representatives from EBRAINS, NIF and INCF





EBRAINS Data and Knowledge solutions developed by teams across Europe



UiO
Norway



FZ Jülich
Germany



CNRS
France



KI
Sweden



CSCS
Switzerland



DMU
UK



EBRAINS AISBL
Belgium



The SHARE
data service

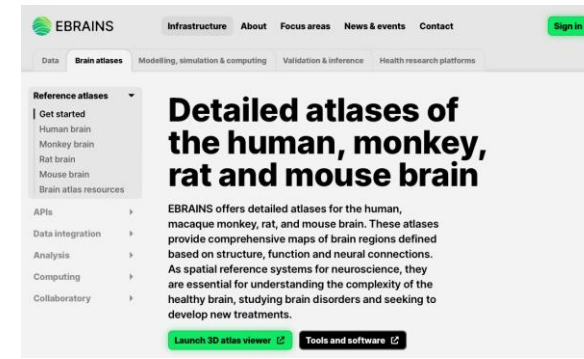
The FIND
data service

Multiple services for USING
data and analysing new
combinations of data

Example: Atlas services, in close
interaction with the Knowledge
Graph



Overview: EBRAINS atlas services



Three 3D brain models are shown, each with different colored regions representing different brain areas. The top model is a lateral view of a human brain, the middle is a macaque brain, and the bottom is a mouse brain. The text below reads: 'Atlases of the human, macaque, rat & mouse brain at unmatched detail'.

A screenshot of a software interface showing a detailed view of a brain section with various colored regions. The text below reads: 'A software toolsuite that makes atlases accessible and interoperable'.

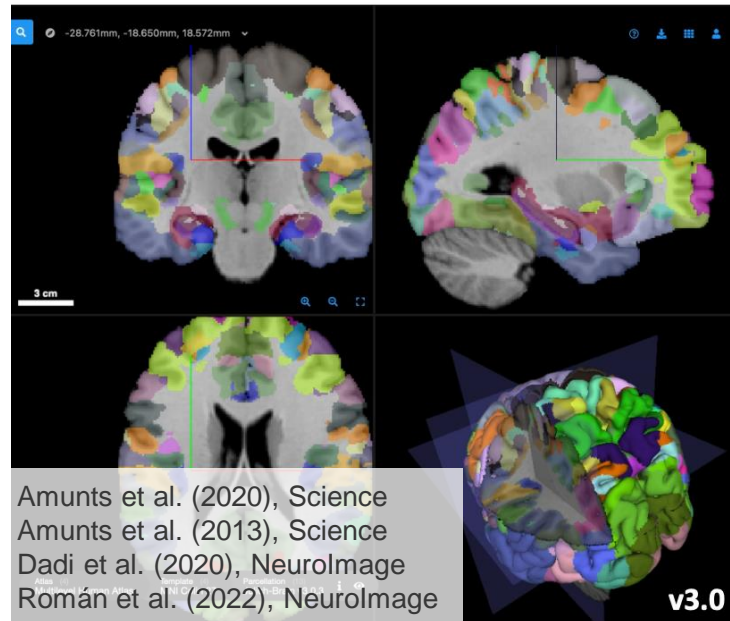
A screenshot of a software interface showing a 3D brain model with various colored regions. The text below reads: 'A set of tools for spatial anchoring to atlases that facilitate extensibility'.

A screenshot of a software interface showing a 3D brain model with various colored regions. The text below reads: 'Atlas-guided analysis tools that demonstrate usefulness'.

Highly detailed reference atlases

Human multilevel atlas

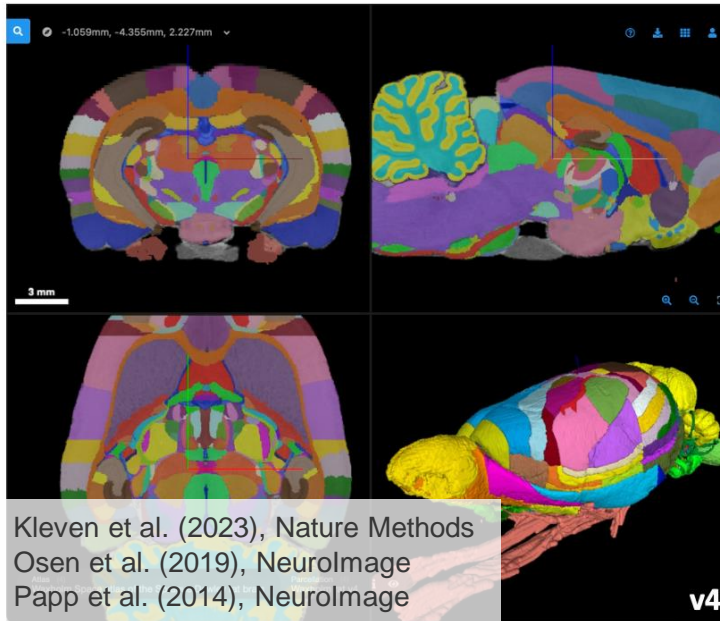
- Volumetric, surface & microscopic templates
- >200 cytoarchitectonic structures
- Deep & superficial fibre bundles
- Functional maps



atlases.ebrains.eu/viewer/go/human

Waxholm Space rat atlas

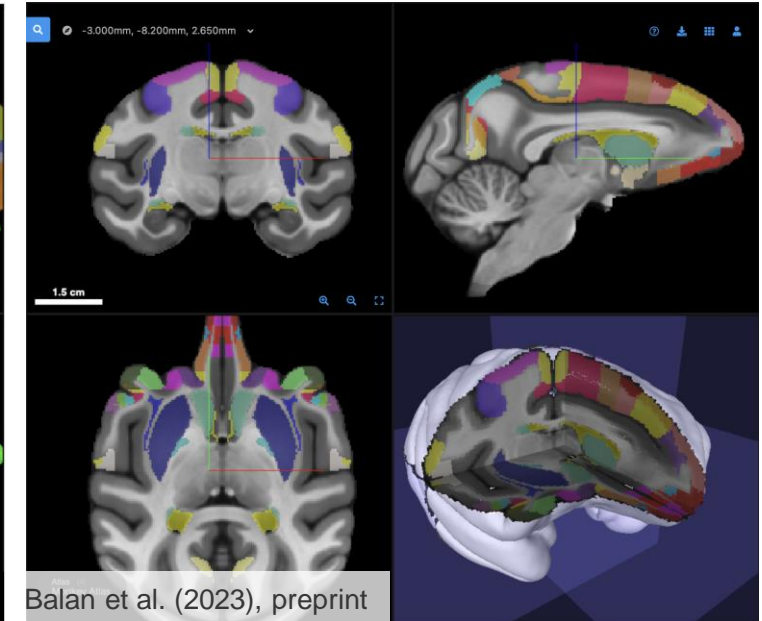
- 222 regions delineated in V4
- Commercial uptake by Mbf Bioscience and Gubra A/S



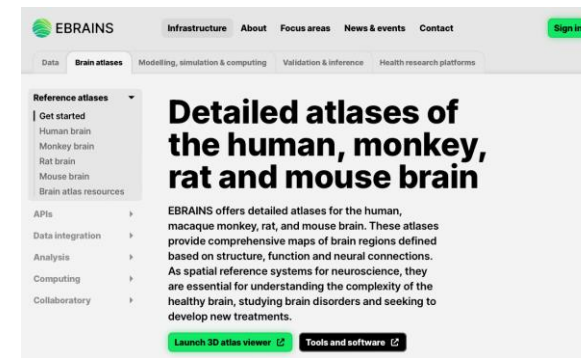
atlases.ebrains.eu/viewer/go/rat

Macaque atlas

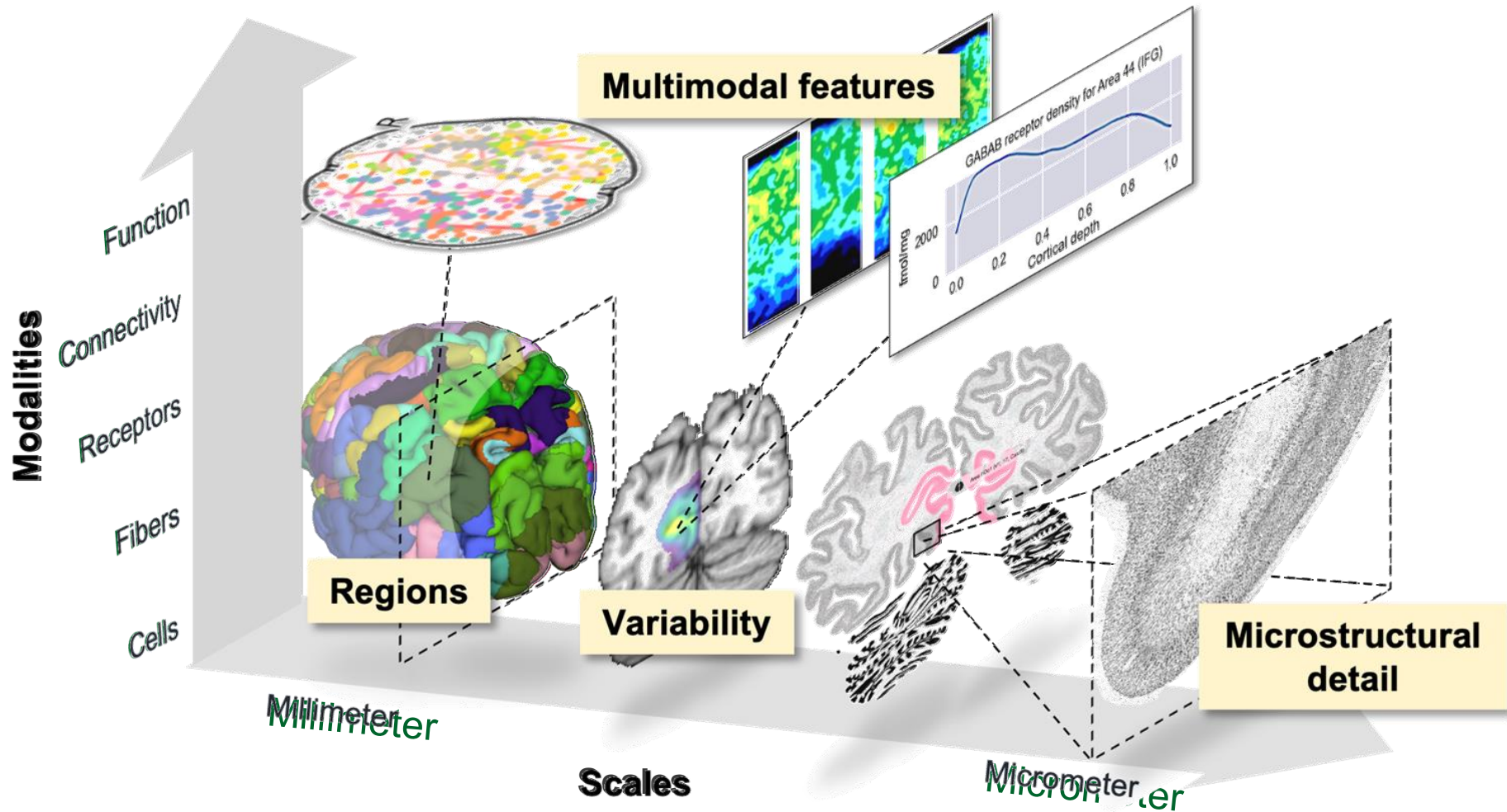
- High-resolution template
- Cytoarchitectonic maps



atlases.ebrains.eu/viewer/go/monkey

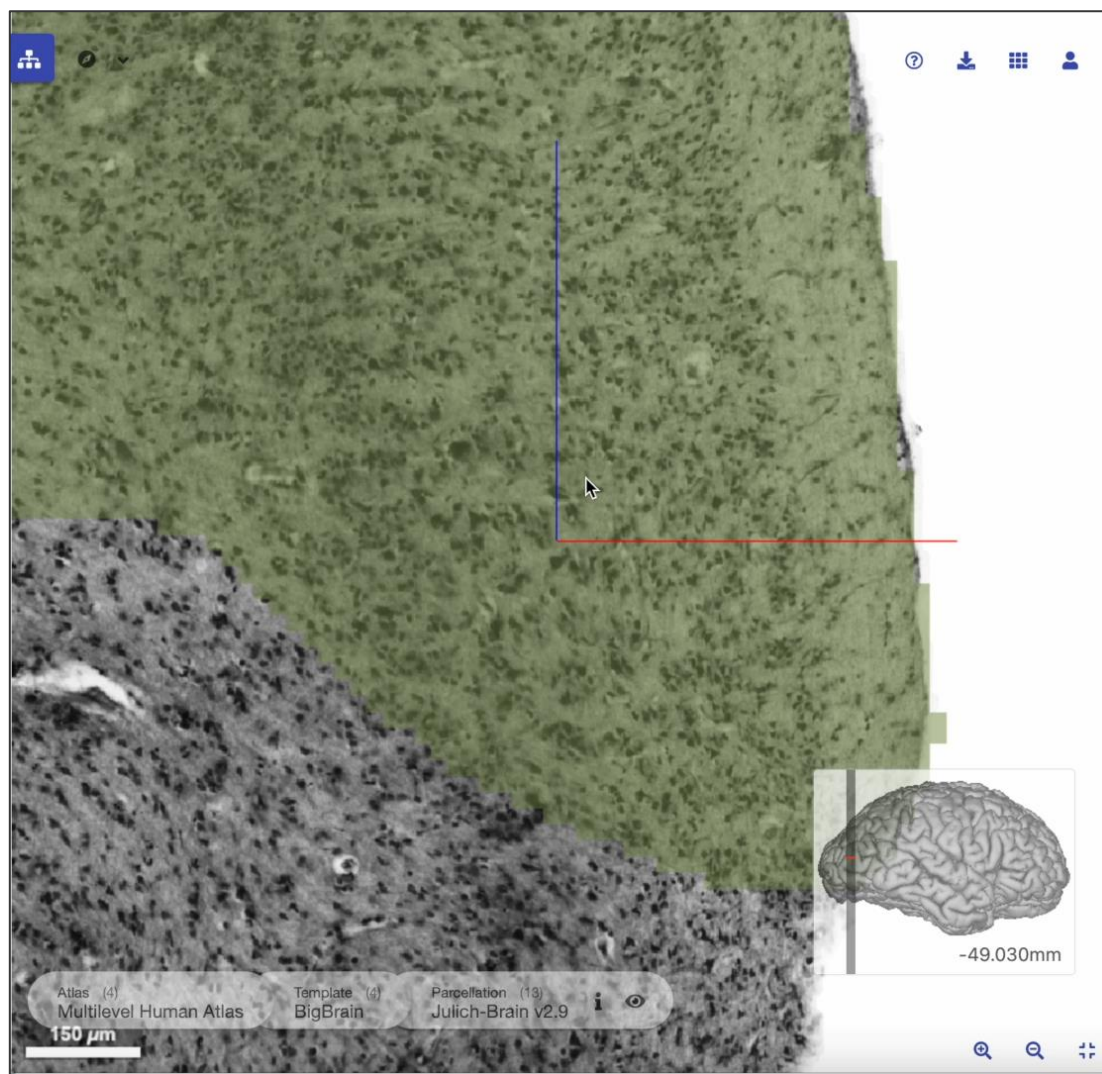


A unique concept of connecting scales and modalities

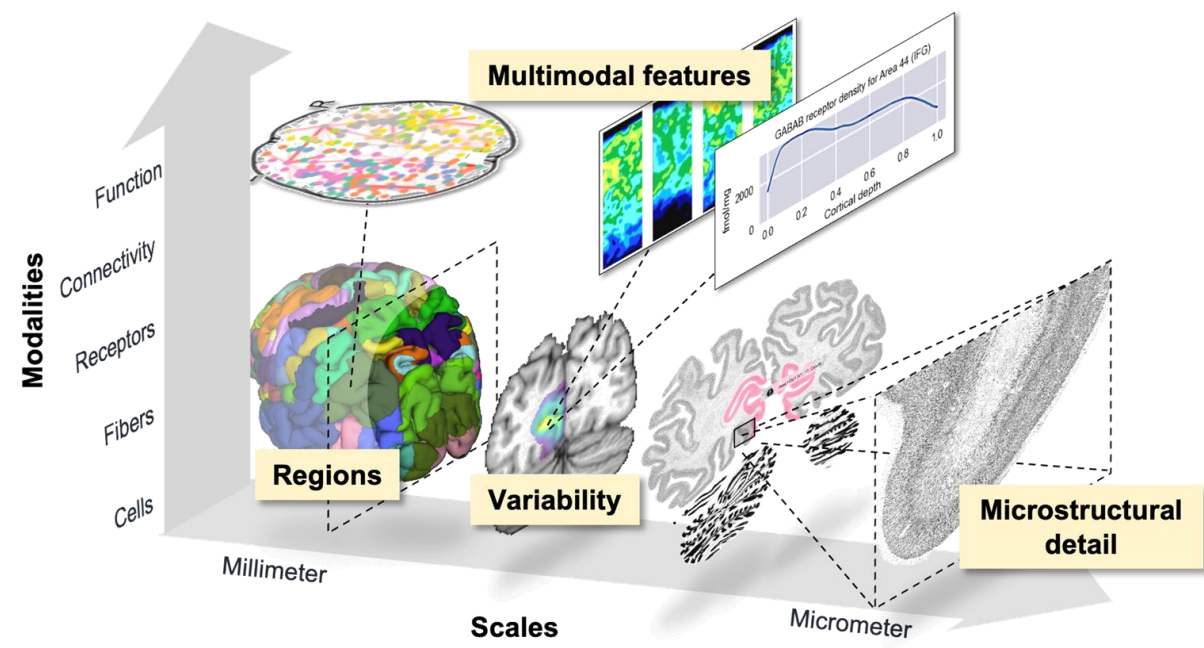




The atlas framework is well accessible



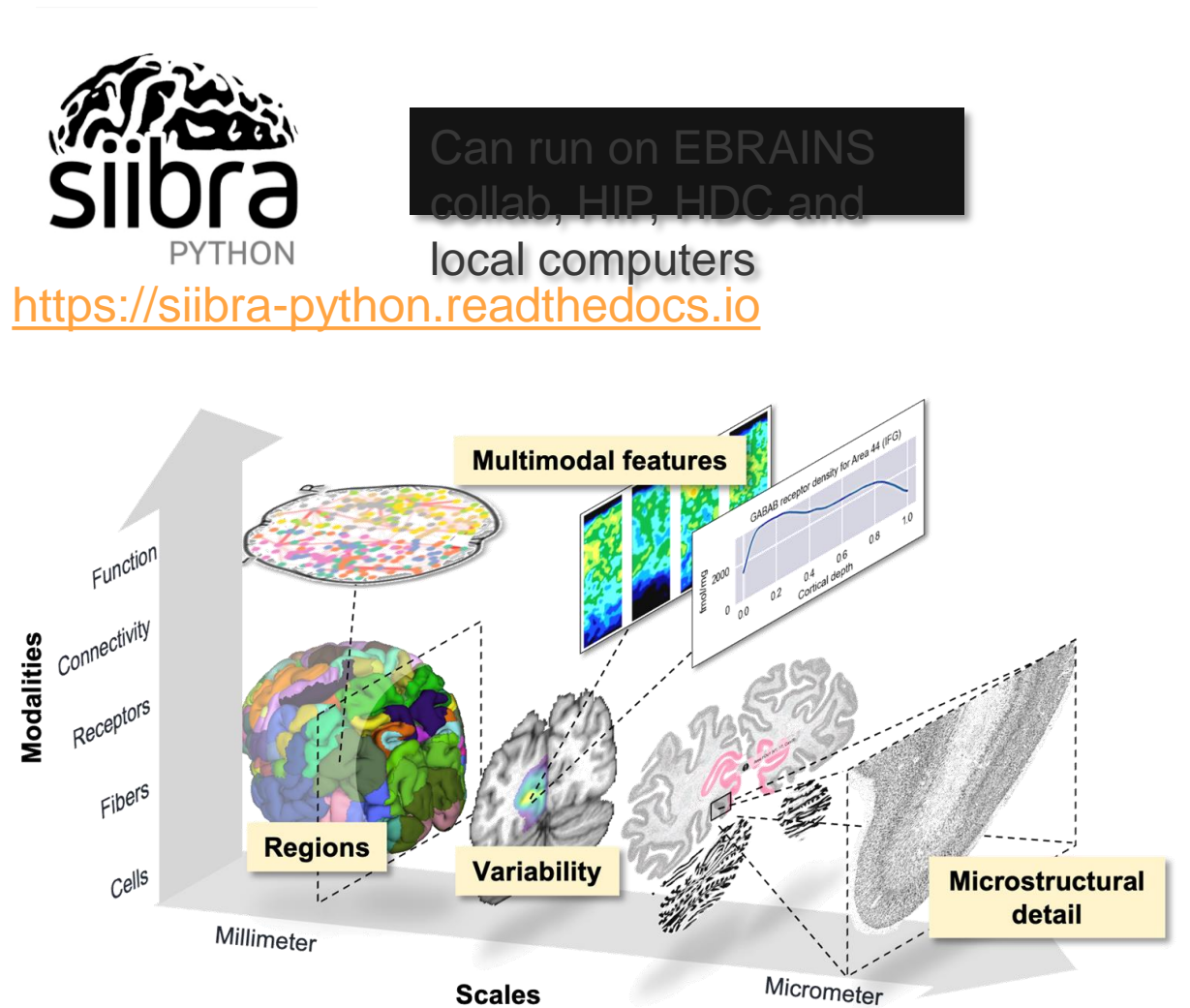
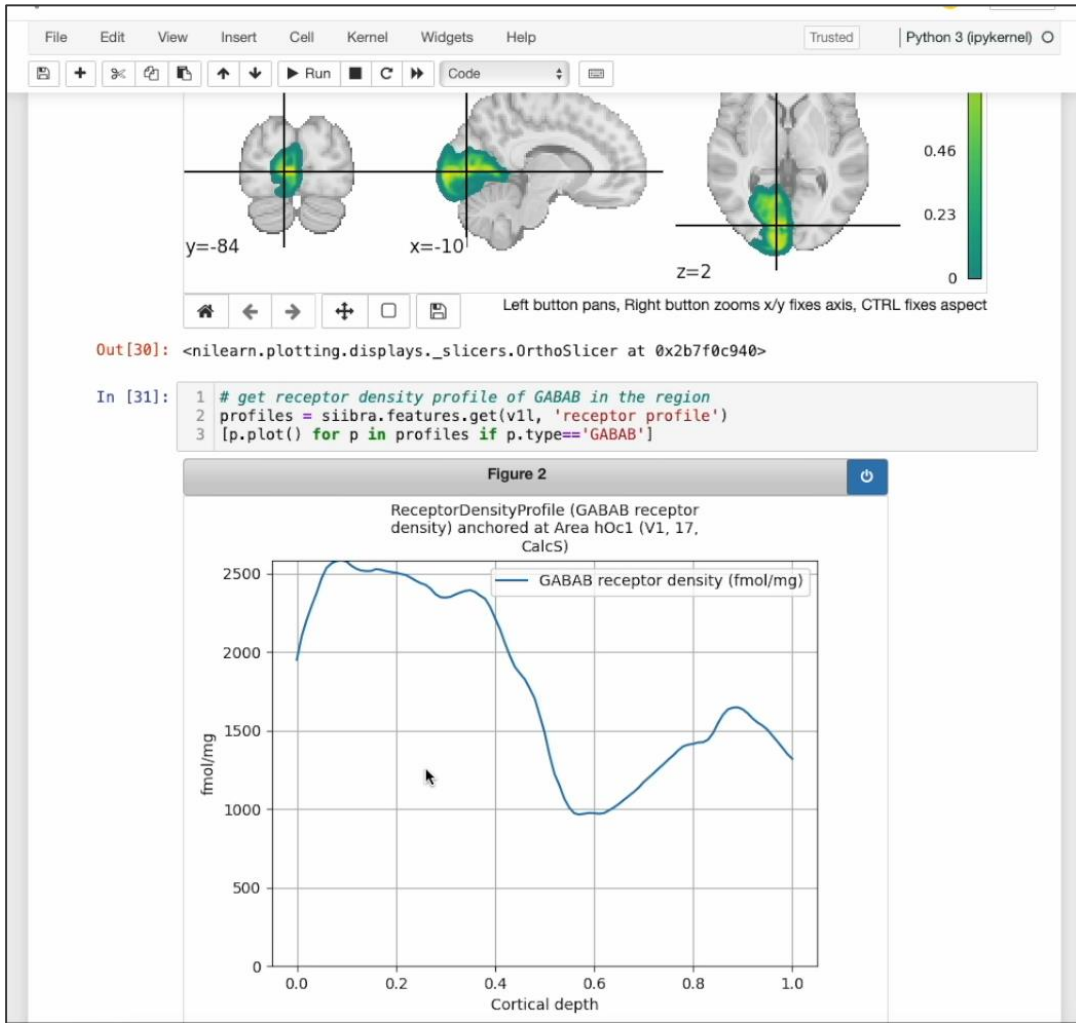
<https://atlases.ebrains.eu/viewer/go/human>



Slide courtesy of T. Dickscheid

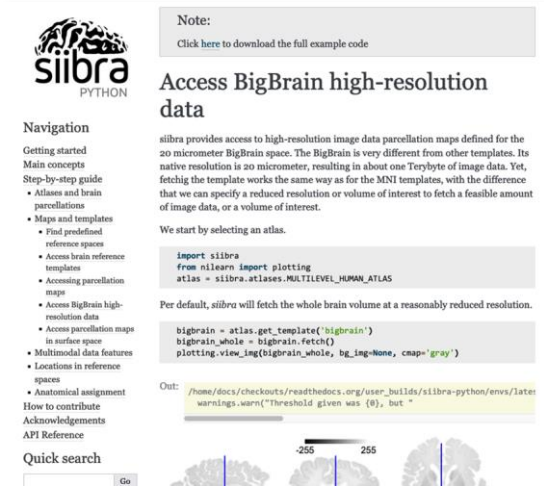


The atlas framework is well accessible





The atlas is computable and interoperable



Note:
Click here to download the full example code

Access BigBrain high-resolution data

siibra provides access to high-resolution image data parcellation maps defined for the 20 micrometer BigBrain space. The BigBrain is very different from other templates. Its native resolution is 20 micrometer, resulting in about one Terebyte of image data. Yet, fetching the template works the same way as for the MNI templates, with the difference that we can specify a reduced resolution or volume of interest to fetch a feasible amount of image data, or a volume of interest.

We start by selecting an atlas.

```
import siibra
from nibabel import plotting
atlas = siibra.atlases.MULTILEVEL_HUMAN_ATLAS
```

Per default, siibra will fetch the whole brain volume at a reasonably reduced resolution.

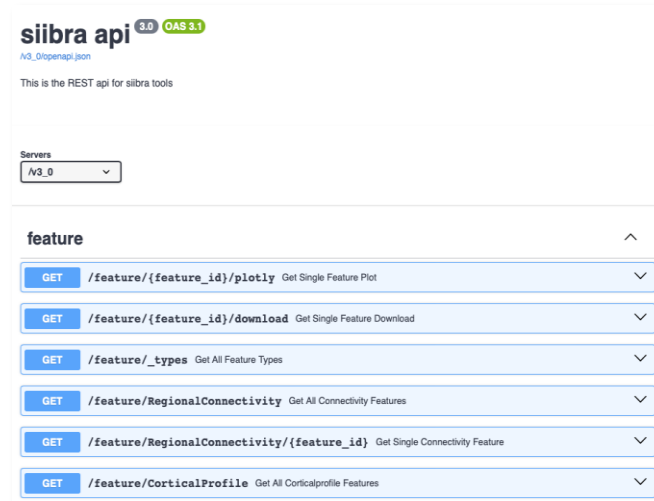
```
bigbrain = atlas.get_template('bigbrain')
bigbrain_whole = bigbrain.fetch()
plotting.view_img(bigbrain_whole, bg_img=None, cmap='gray')
```

Out: /home/docs/checkouts/readthedocs.org/user_builds/siibra-python/envs/latest
warnings.warn("threshold given was {0}, but "

siibra-python

Fully functional Python client

siibra-python.readthedocs.io



siibra api 3.0 OAS 3.1
v3_0penapi.json

This is the REST api for siibra tools

Servers
v3_0

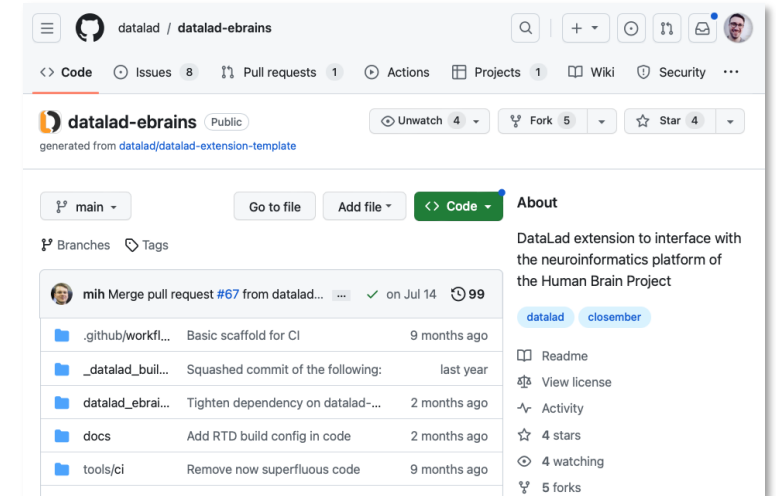
feature

- GET /feature/{feature_id}/plotly Get Single Feature Plot
- GET /feature/{feature_id}/download Get Single Feature Download
- GET /feature/_types Get All Feature Types
- GET /feature/RegionalConnectivity Get All Connectivity Features
- GET /feature/RegionalConnectivity/{feature_id} Get Single Connectivity Feature
- GET /feature/CorticalProfile Get All Corticalprofile Features

siibra-api

HTTP interface for external apps

siibra-api-stable.apps.hbp.eu/v3_0



datalad / datalad-ebbrains

<> Code Issues 8 Pull requests 1 Actions Projects 1 Wiki Security

datalad-ebbrains Public
generated from datalad/datalad-extension-template

main - Go to file Add file <> Code About

Branches Tags

mih Merge pull request #67 from datalad... on Jul 14 99

- .github/workfl... Basic scaffold for CI 9 months ago
- _datalad_buil... Squashed commit of the following: last year
- datalad_ebrai... Tighten dependency on datalad... 2 months ago
- docs Add RTD build config in code 2 months ago
- tools/ci Remove now superfluous code 9 months ago

Readme View license Activity 4 stars 4 watching 5 forks

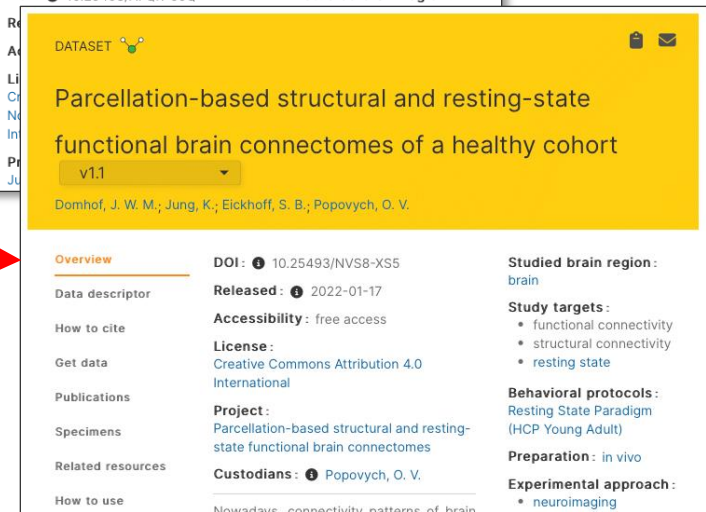
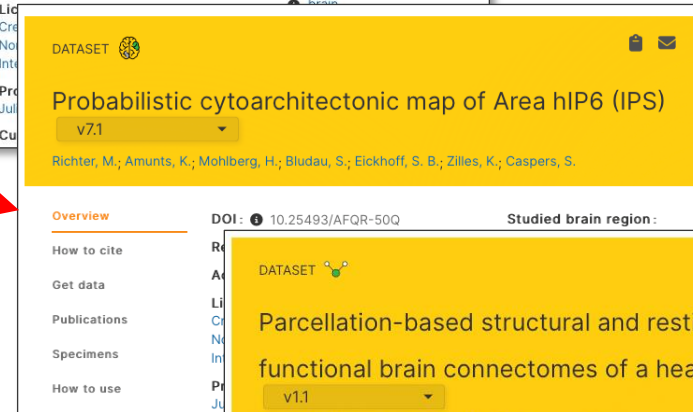
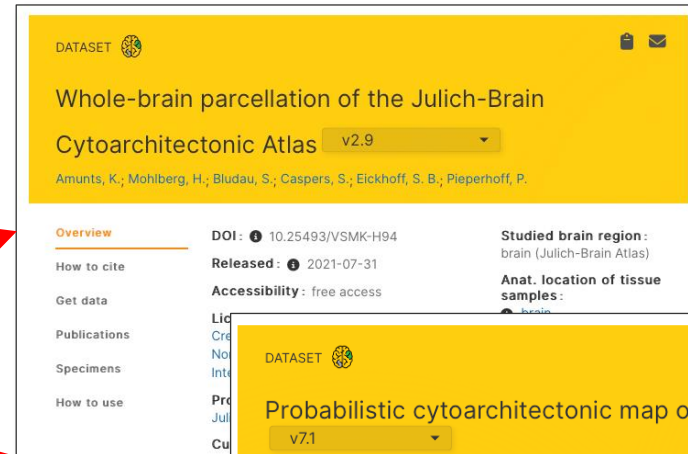
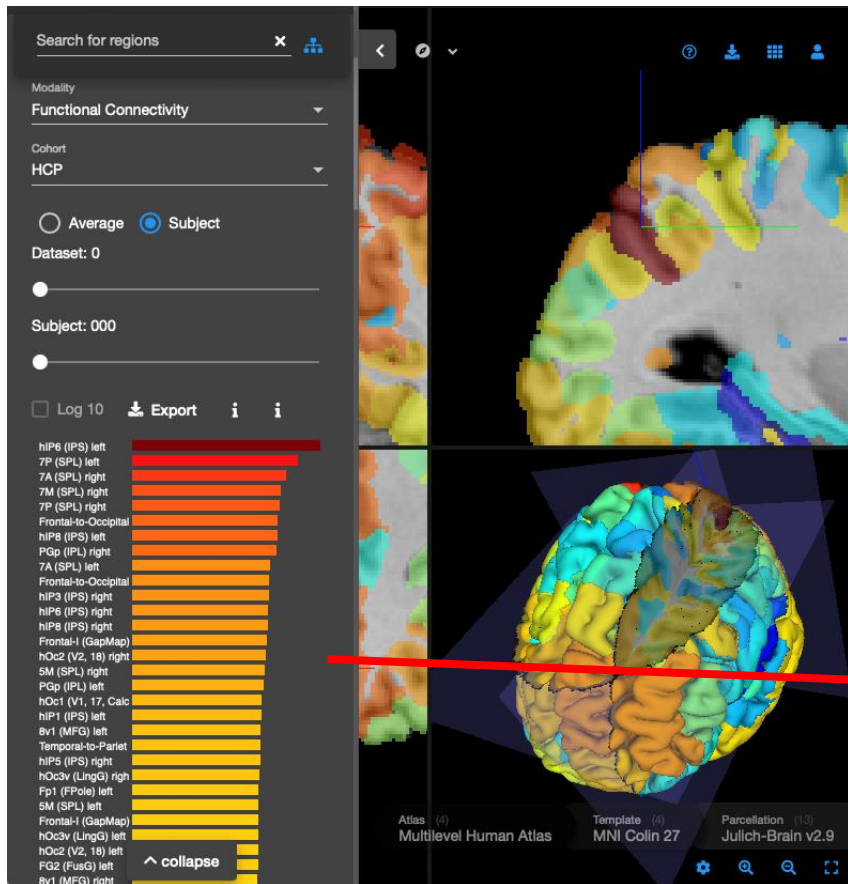
datalad-ebbrains

„git for EBRAINS datasets“
facilitates off-site processing

<https://github.com/datalad/datalad-ebbrains>



All atlas content is modeled as FAIR datasets



AtOM: Atlas Ontology Model
(Kleven et al., Scientific Data;
<https://doi.org/10.1038/s41597-023-02389-4>)

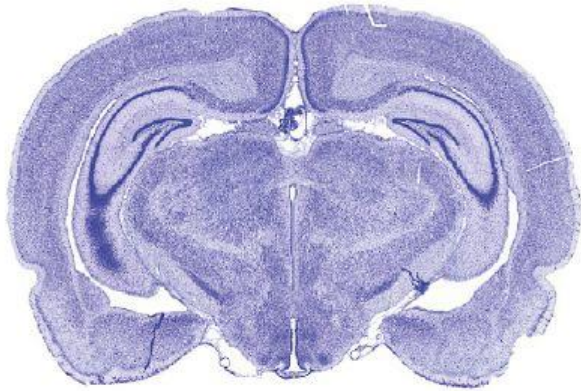
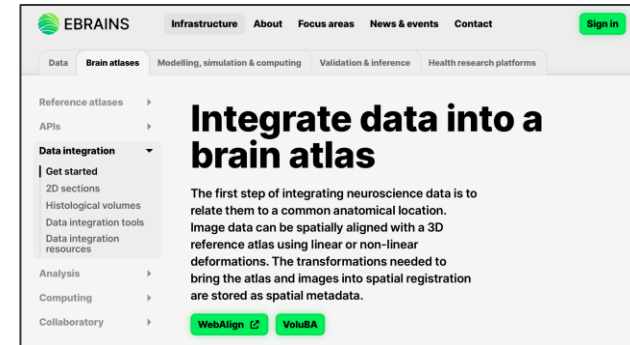
Tools are in place to integrate more data into atlases

2D sections in rodent brains

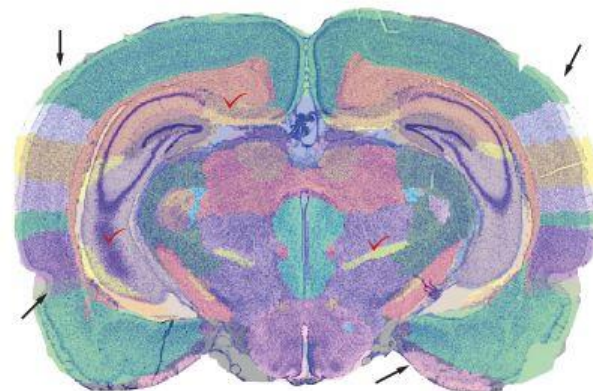
QuickNII & VisuAlign

<https://www.ebrains.eu/tools/visualign>

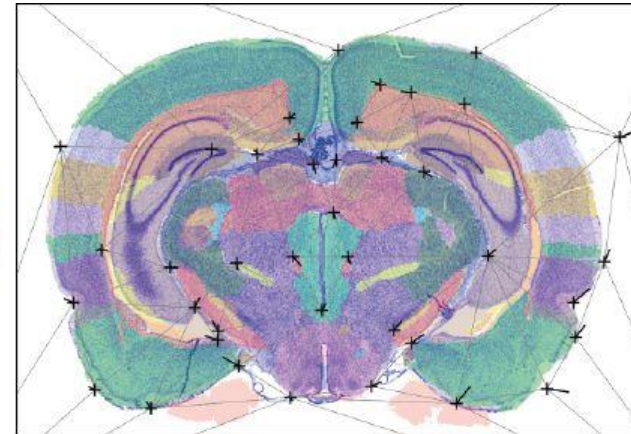
<https://www.ebrains.eu/tools/quicknii>



Section image



QuickNII registration:
find deviation angles



VisuAlign registration:
non-linear adjustment

[ebrains.eu/brain-atlases/data-integration](https://www.ebrains.eu/brain-atlases/data-integration)

Tools are in place to integrate more data into atlases

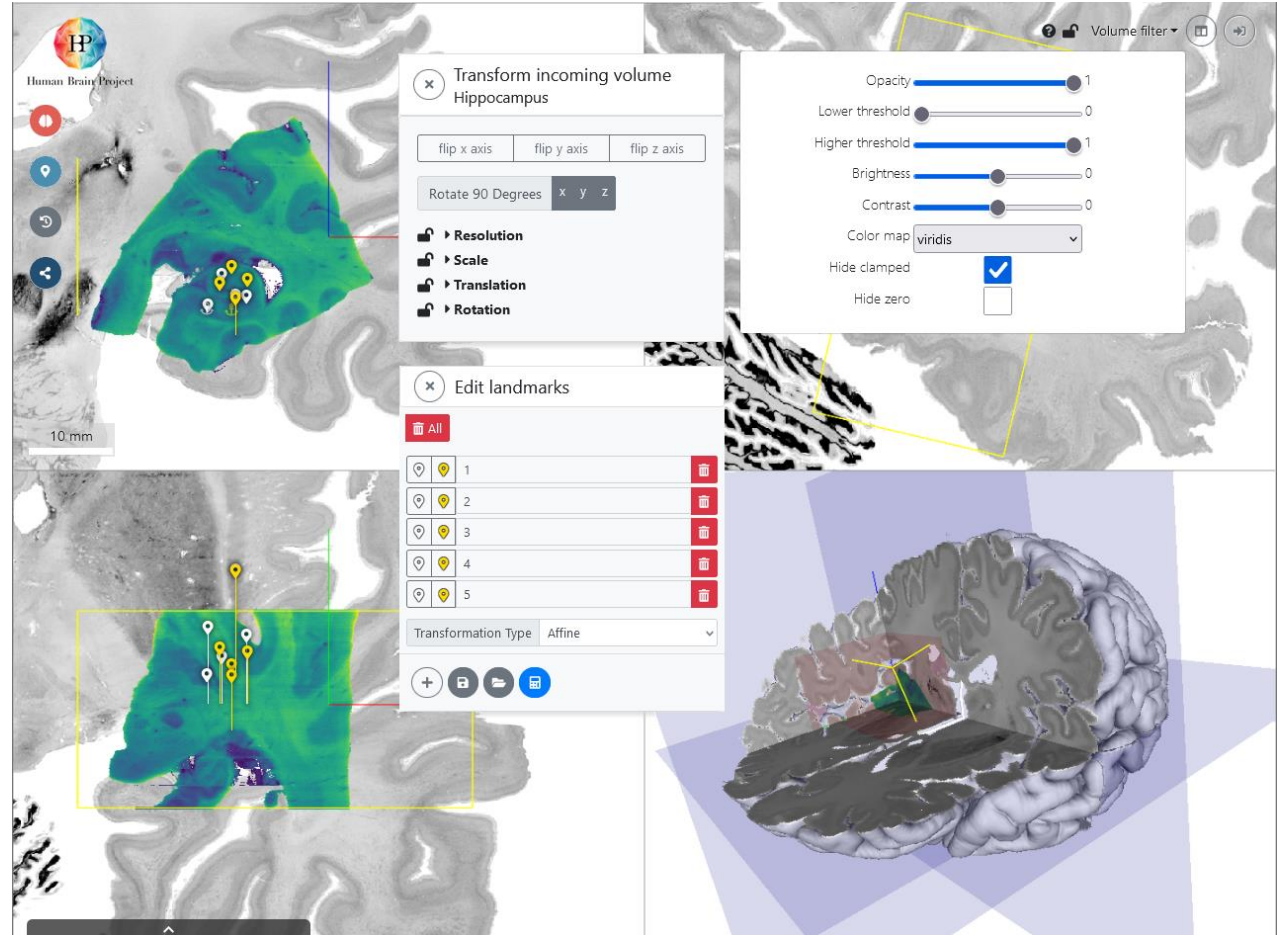
2D sections in rodent brains QuickNII & VisuAlign

<https://www.ebrains.eu/tools/visualign>

<https://www.ebrains.eu/tools/quicknii>

Histological volumes of interest voluba

<https://ebrains.eu/tools/voluba>



ebrains.eu/brain-atlases/data-integration



EBRAINS

EBRAINS 2.0

Thank you



Co-funded by
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