EBRAINS

Information Webinar: EBRAINS 2.0 Open Calls

July 11th - 10:00 – 11:30

Co-funded by the European Union

EBRAINS 2.0 has received funding from the European Union's Research and Innovation Program Horizon Europe under Grant Agreement No. 101147319.

Agenda

- 10:05 – 10:15: Presentation by Open Call Management about process
- 10:15 – 10:30: OC1 - Integrating Spatial Omics Data into the EBRAINS Human Brain Atlas
- 10:30 – 10:45: OC2 – Clinical Neuroscience
- 10:45 – 11:00: OC3 - Promoting the neuroscientific use of EBRAINS 2.0 digital brain twins and simulation services
- 11:00– 11:15: OC4 - Recruiting large data collections for FAIR data sharing and analysis in EBRAINS
- 11:15 – 11:30: Questions

Open Call Process

Nienke Blom – Project Manager Open Calls
Medical University Innsbruck

https://www.ebrains.eu/page/open-calls

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EBRAINS 2.0 Open Calls

- **EBRAINS**: a collaborative digital European Research Infrastructure that enhances and accelerates progress in neuroscience and brain health.
- **Open Calls**: enabling researchers and consortia outside the project to receive funding and contribute to the project as third parties by integrating data and workflows into EBRAINS.

EBRAINS 2.0 Open Calls

1) Who can apply?
    a) Researchers, institutions, or companies (or consortia) with a solid record of accomplishment in the open call's respective topics.
    b) Applicants must be established in the EU Member States or Horizon Europe-Associated Countries
    c) Beneficiary institutions in the EBRAINS 2.0 project will not be eligible to apply.
2) 4 calls, 8 proposals selected for funding
3) Amount of funding per proposal: 60.000,- EUR.
4) Project duration: 12 or 18 months

Financial Support to Third Parties (FSTP)

1) FSTP
    a) Contractual agreement between selected parties and WP
    b) Selected parties will not become a part of the EBRAINS 2.0 Consortium
2) Only direct costs
    a) Personnel costs
    b) Purchase costs (travel and subsistence, equipment, other goods, works and services)

Timeline

Opening of calls:	**Thursday June 20th, 10:00 CEST**
Closing of calls:	**Monday September 2nd, 14:00 CEST**
Proposal evaluation:	September - October
Panel consensus meeting:	First half of November
Endorsement of decision by leadership board/EC:	November
Communication of decision:	Second half of November
Start of projects:	January 2025

Submission Process

1) Submission via EBRAINS Open Calls Grant Platform
2) Be aware that you may have to submit many forms → start on time!
3) All communication will go via Grants Platform

opencalls@ebrains.eu

My applications → Application form EBRAINS Open Calls → Start application

All questions must be answered, unless marked optional.

Start here | Organisation information | Project Information | Ethical and Data Protection Documentation | Data Sharing agreement | Eligibility check | Declaration

Proposal upload

Welcome to the application form of EBRAINS Open Calls. In this form, you can upload your proposal for one of the four open calls. After uploading your proposal, you need to go through this form to upload a number of documents. Please be aware that your proposal will only be taken into consideration if you submit the entire application form.

Material may be supplied as follows:

1. Upload PDF files. Maximum file size is 5MB per piece. A maximum of two files can be uploaded with your application. You are allowed to upload your budget table as a seperate file.
2. Please do not upload more documents than asked for, these will not be taken into consideration.

Please choose the Call you want to apply for in the drop-down field.

Available Call

EBRAINS 2.0 Open Calls round 1

OC4: Recruiting large data collections for FAIR data sharing and analysis in EBRAINS (inactive for applicants)

- **Information about the Call:** This call aims to make large neuroscience data collections findable, accessible, interoperable, re-usable and interpretable through the EBRAINS Research Infrastructure.
  We invite institutions or research consortia that have collected research data from one or more projects to share their data and related metadata through the EBRAINS Data and Knowledge services, thereby actively contributing to the open science movement.
  The anticipated data modalities encompass those currently incorporated in the existing version of the EBRAINS Knowledge Graph. Priority will be given to large data collections from experimental rodent brain research or human brain (healthy or with brain disorders), including data derived from structural and functional microscopy (e.g., voltage-sensitive dye imaging, intrinsic signal optical imaging, two-photon/multi-photon imaging), MRI, PET, EEG, and electrophysiology, spanning from cellular to system levels.
- **Call Documents:** Please use this link to access call documents. In the folder, you can access the Guideline for Applicants and the Proposal Template. Please download the proposal template to your personal PC and edit it offline.
- Proposals submitted in a format other than the proposal template will **not be considered.**

Download blank application PDF for reference

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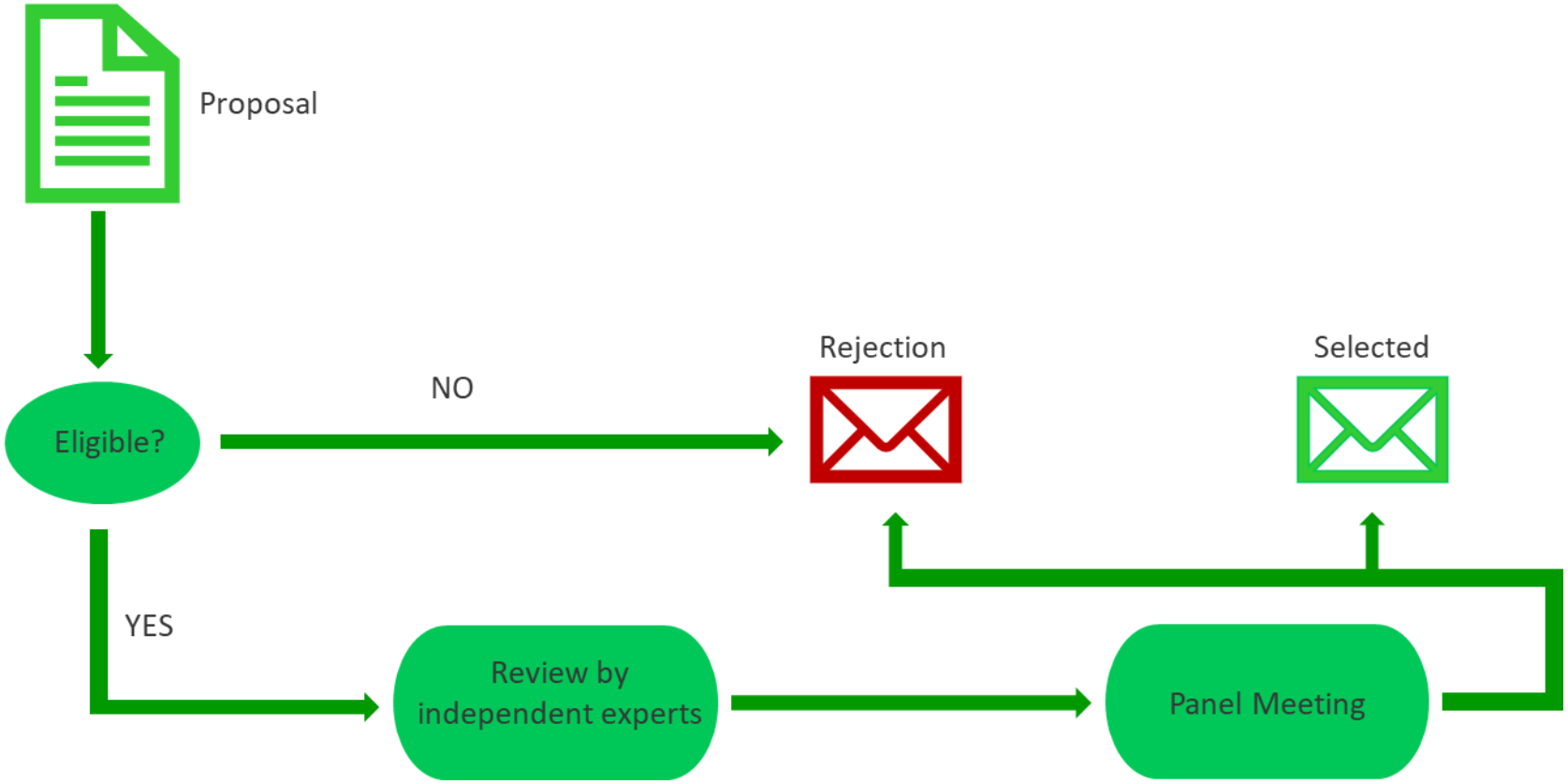
Evaluation process



Help during application process

- Technical questions related to Open Calls platform
  - ‘Need Help?’ button on Platform
  - opencalls@ebrains.eu
- Website for more information: https://www.ebrains.eu/page/open-calls

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Thank you

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B-1170 Brussels - Belgium

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OC1: Integrating Spatial Omics Data into the EBRAINS Human Brain Atlas.

Timo Dikscheid

Forschungszentrum Jülich
Heinrich-Heine University Düsseldorf

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An open research infrastructure that gathers data, tools and computing facilities for brain-related research, built with interoperability at the core.

Get started

Data

Brain atlases

3D maps of the brain to navigate and analyse complex neuroscientific data.

Explore

Modelling, simulation & computing

Validation & inference

Health research platforms

EBRAINS reference brain atlases

Human multilevel atlas

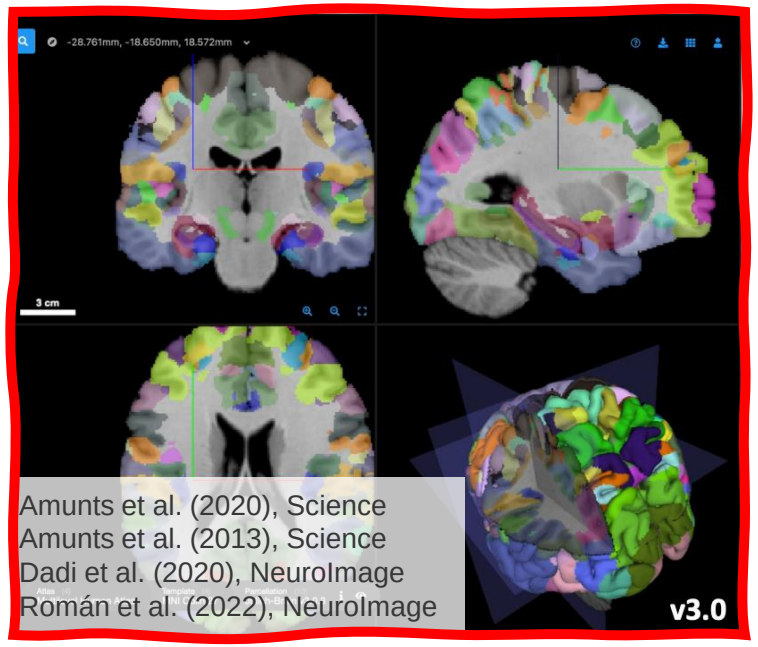
- Volumetric, surface & microscopic templates
- >200 cytoarchitectonic structures
- Deep & superficial fibre bundles
- Functional maps

Waxholm space rat atlas

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

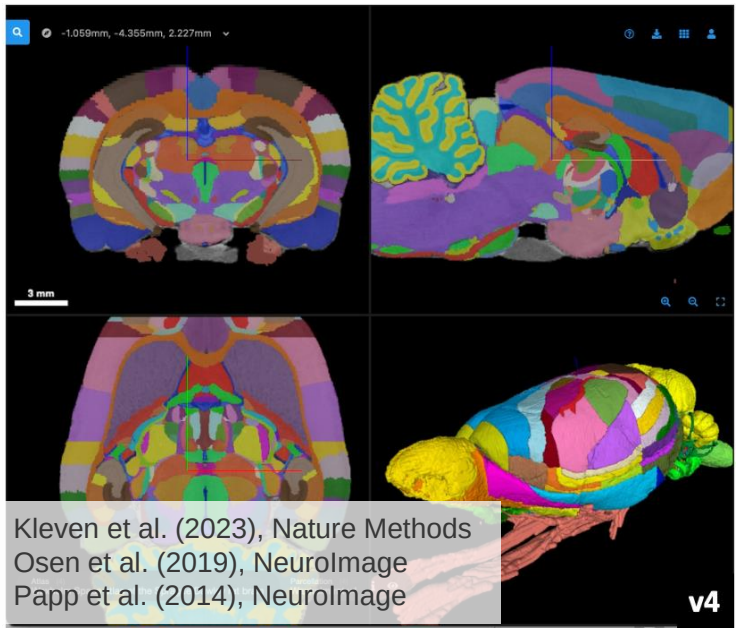
Macaque atlas

- New development in SGA3
- High-resolution template
- Cytoarchitectonic maps



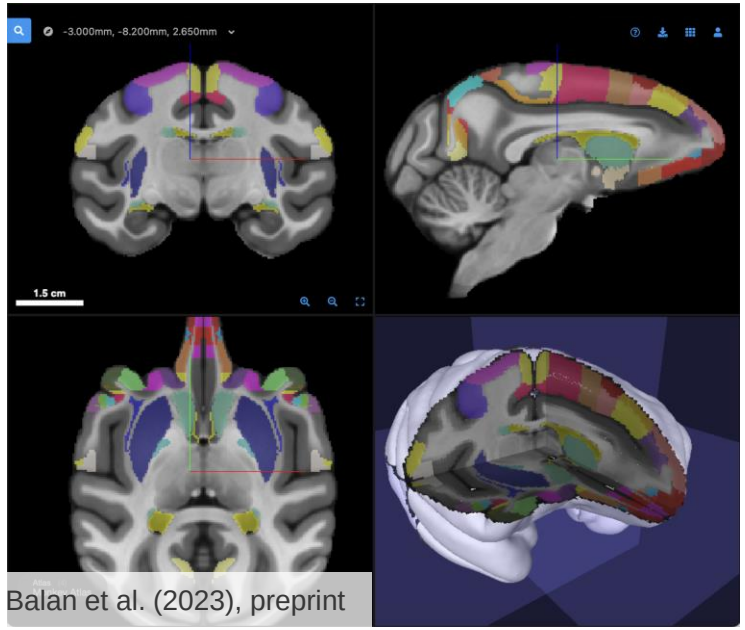
Amunts et al. (2020), Science
Amunts et al. (2013), Science
Dadi et al. (2020), NeuroImage
Román et al. (2022), NeuroImage

atlases.ebrains.eu/viewer/go/human



Kleven et al. (2023), Nature Methods
Osen et al. (2019), NeuroImage
Papp et al. (2014), NeuroImage

atlases.ebrains.eu/viewer/go/rat



Balan et al. (2023), preprint

atlases.ebrains.eu/viewer/go/monkey

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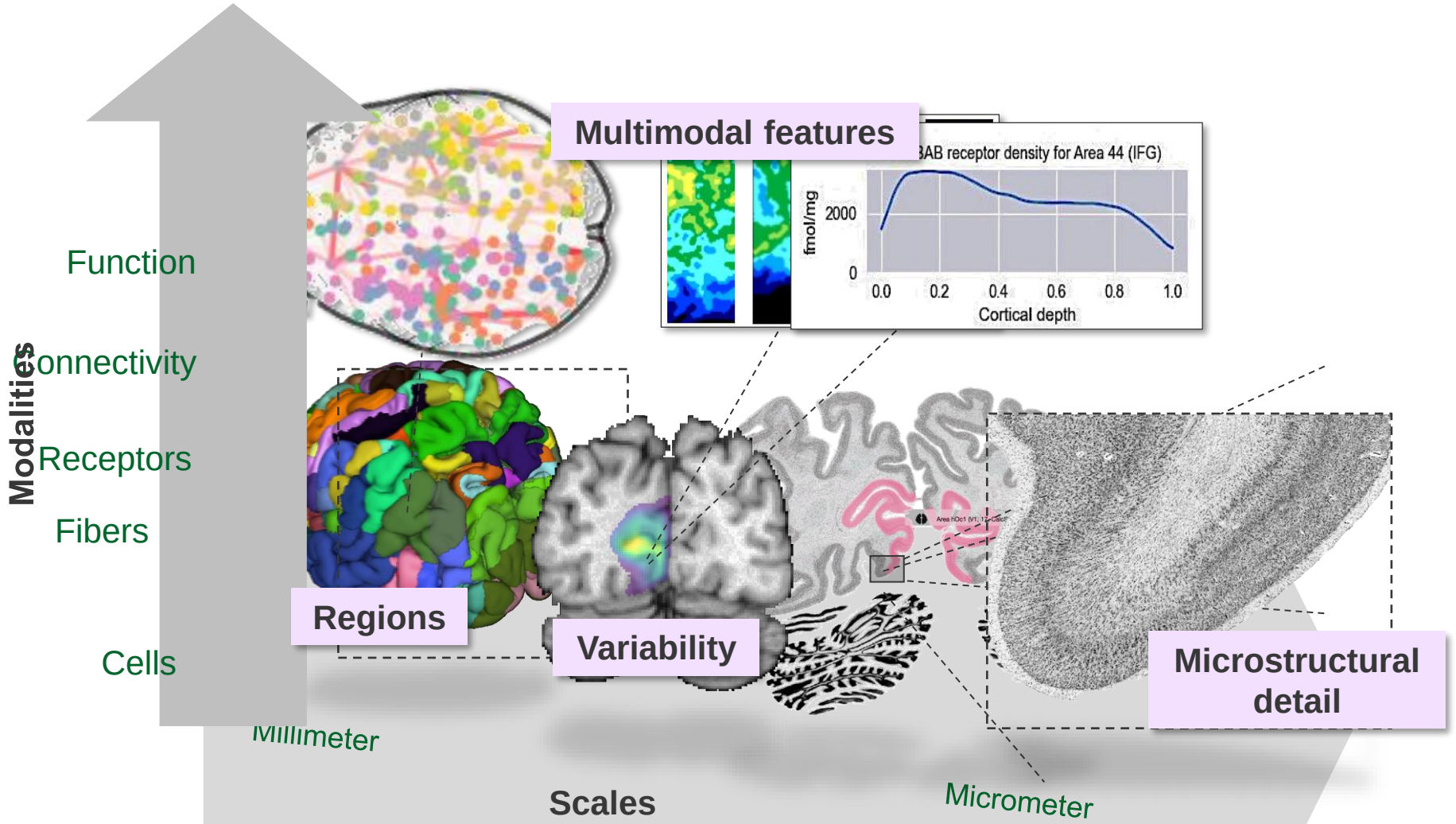
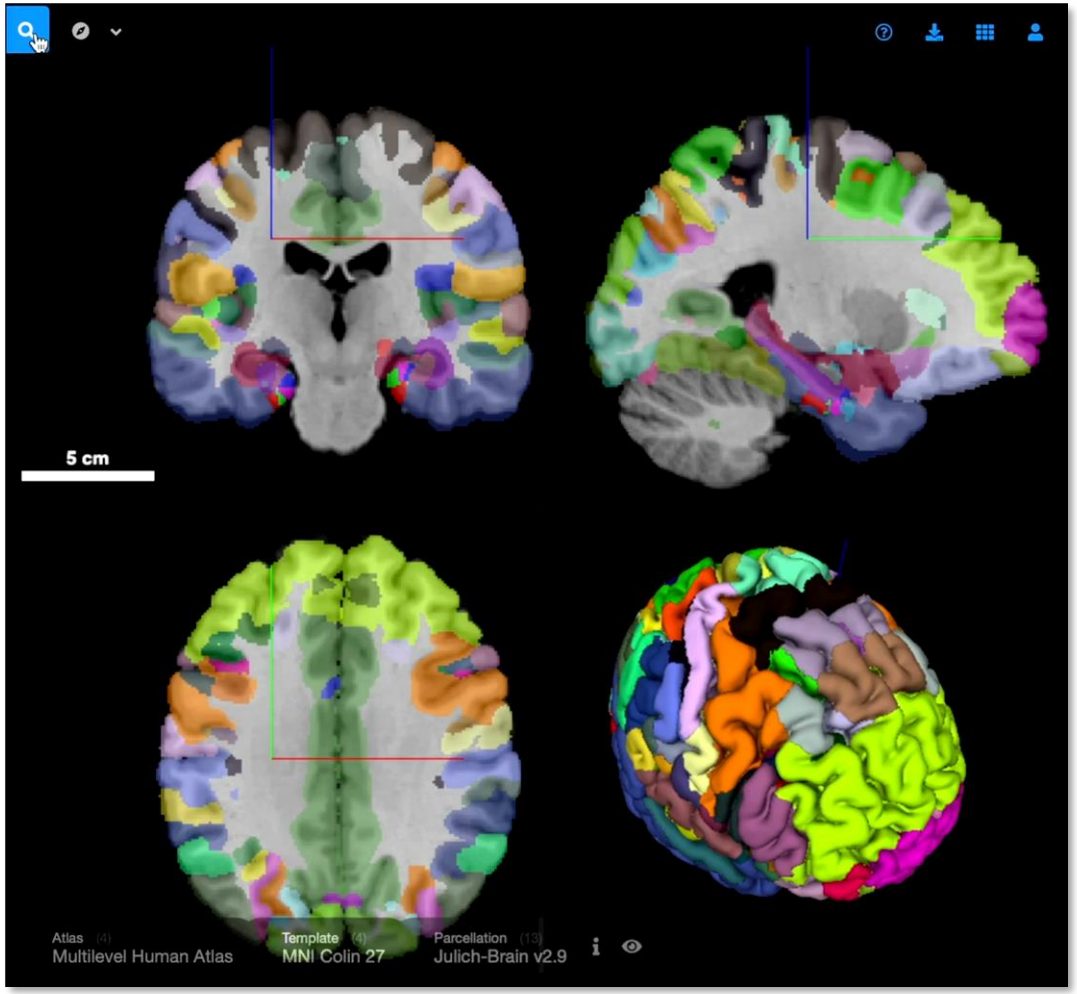
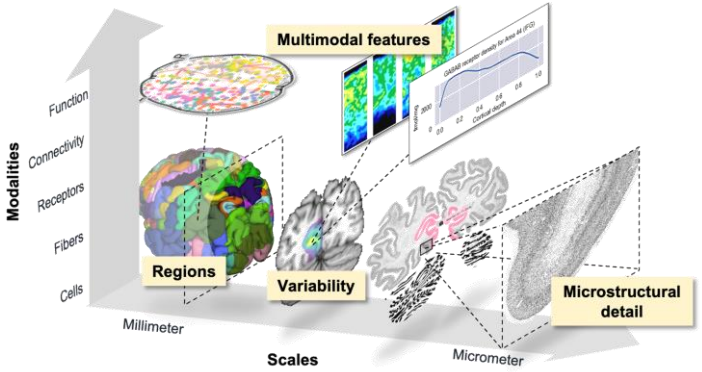
Connecting scales and modalities of the human brain



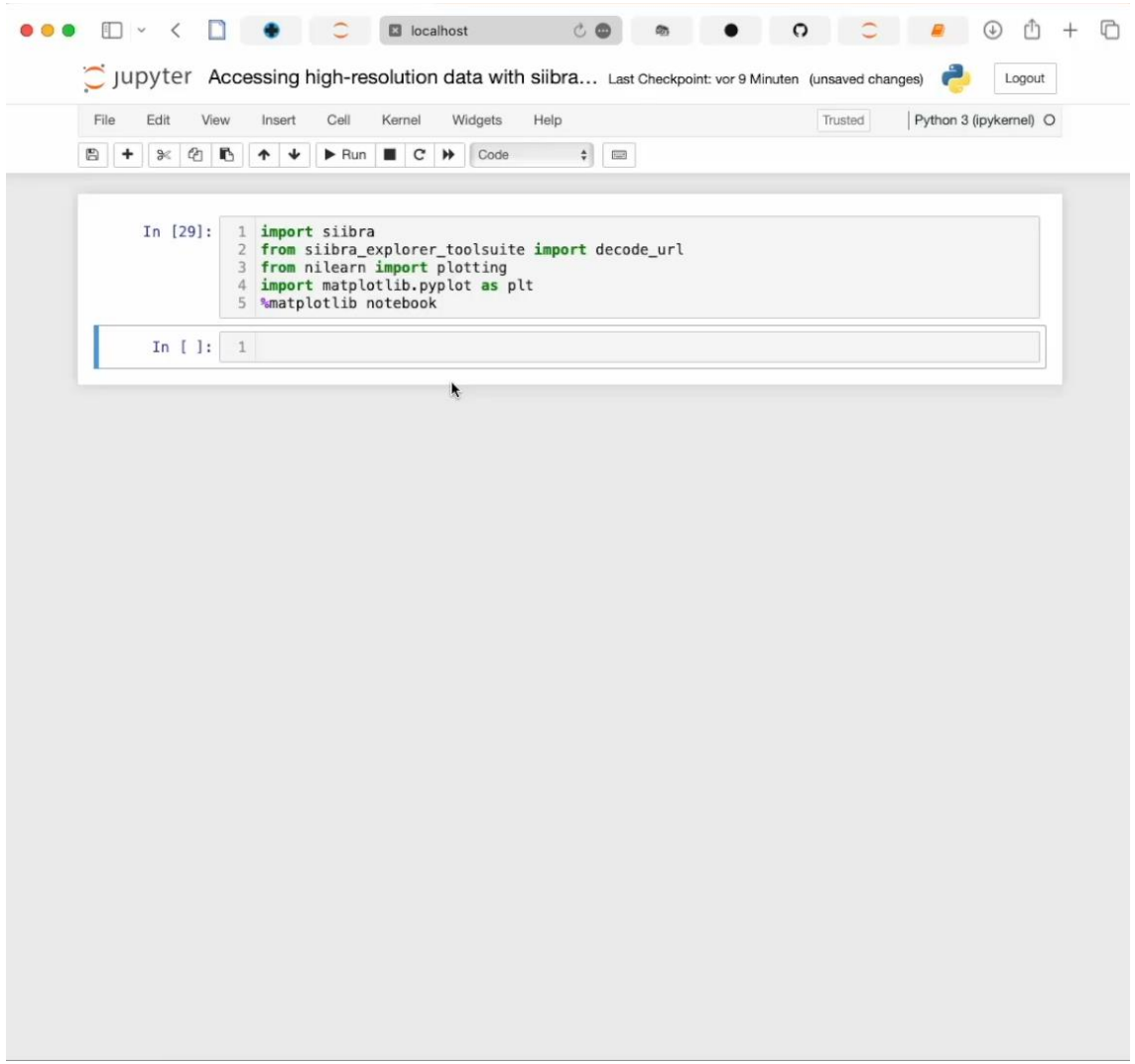
siibra-explorer – interactive exploration



atlases.ebrains.eu/viewer/go/human



siibra-python – reproducible computational workflows



Fully functional Python client
siibra-python.readthedocs.io

Interoperable with community libraries!

NumPy pandas NiBabel THEVIRTUALBRAIN. nilearn

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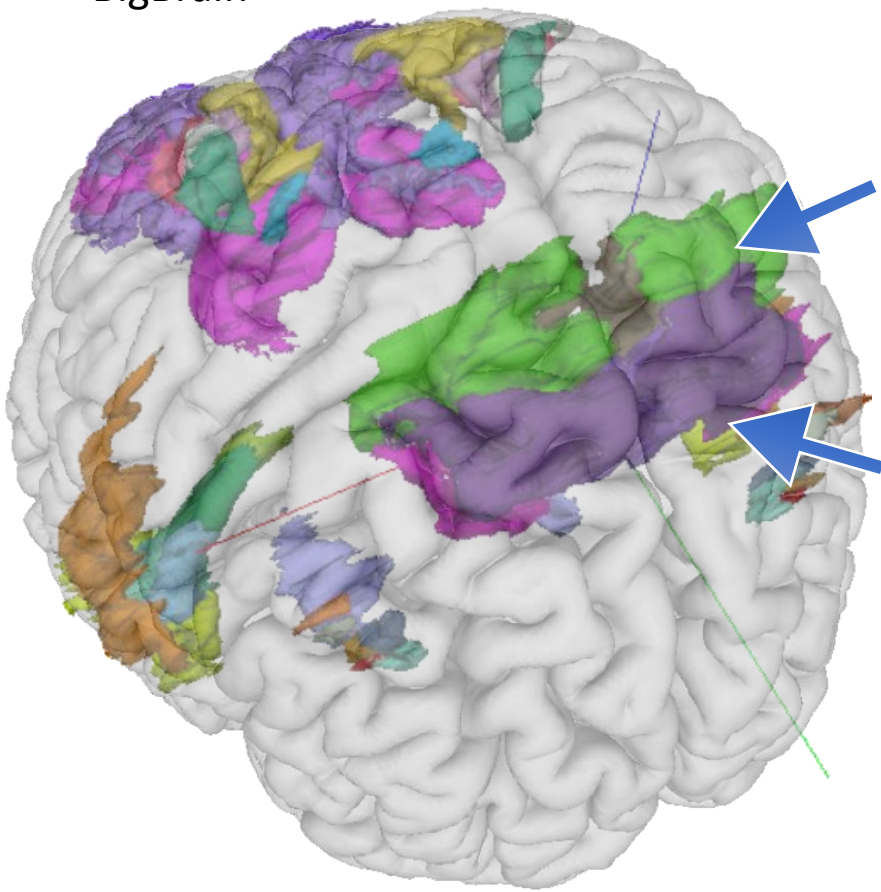
Bridging scales

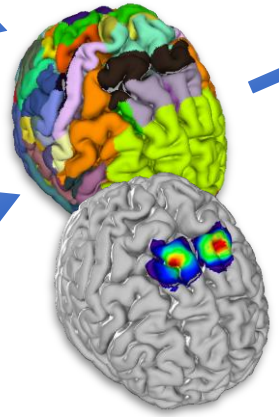
BigBrain



Corres-ponding regions

Spatial trans-formatio ns

MNI Space



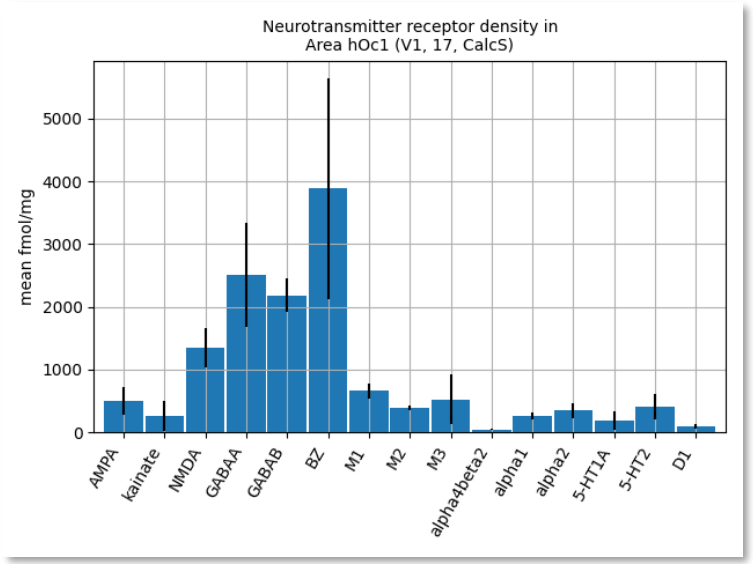
Inflated surface Space

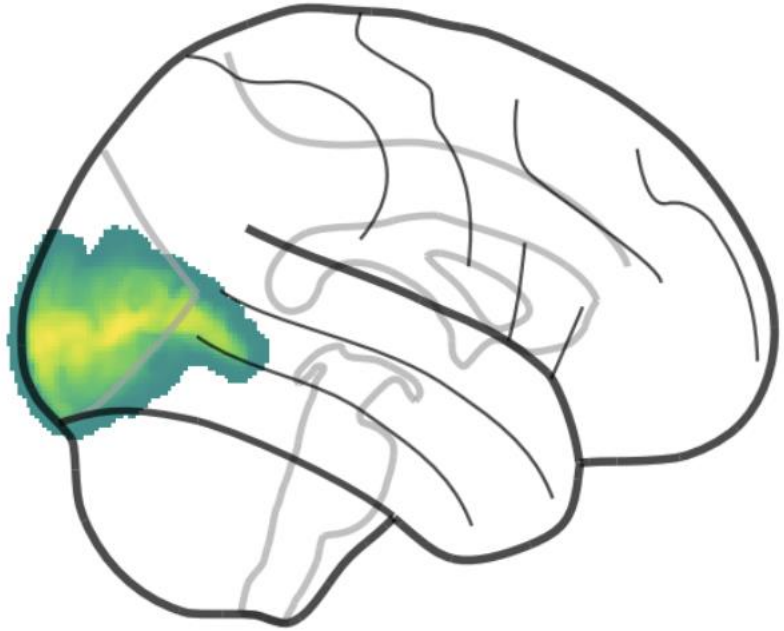
A framework based on sulcal constraints to align preterm, infant and adult human brain images acquired in vivo and post mortem

J. Lebenberg, M. Labit, G. Auzias, H. Mohlberg, C. Fischer, D. Rivière, E. Duchesnay, C. Kabdebon, F. Leroy, N. Labra, F. Poupon, T. Dickscheid, L. Hertz-Pannier, C. Poupon, G. Dehaene-Lambertz, P. Hüppi, K. Amunts, J. Dubois & J.-F. Mangin

Brain Structure and Function **223**, 4153–4168 (2018) | Cite this article

How features are linked to brain structures





Semantic tagging:
name of brain region

„hOc1 left“

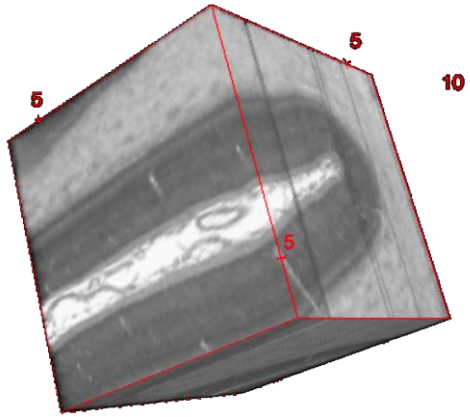
Use parcellation
map to localize

How features are linked to brain structures

Spatial primitives: coordinates, bounding boxes, polylines, …

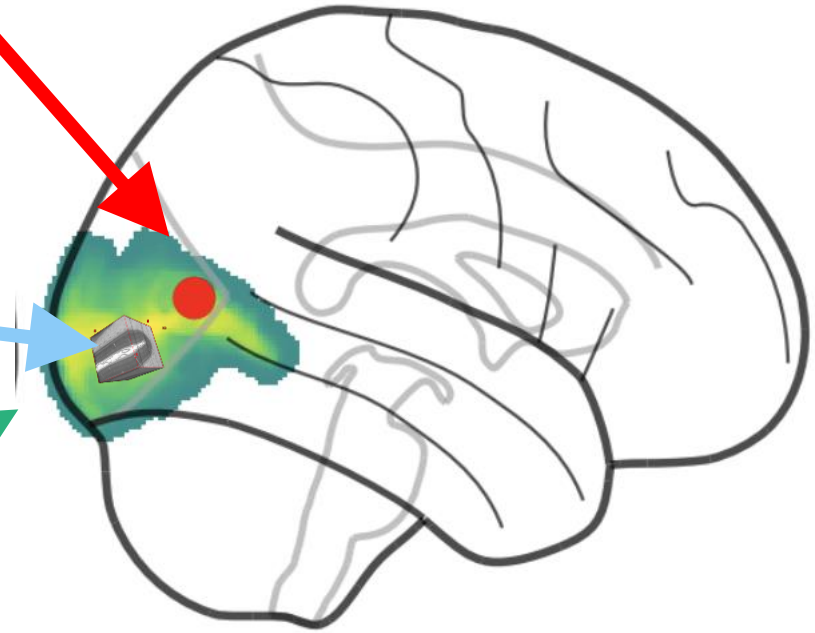
(-9.54, -72.35, 11.02)

Use coordinates in a reference space to localize



Images: 2D sections, 3D volumes of interest

Use image registration to localize

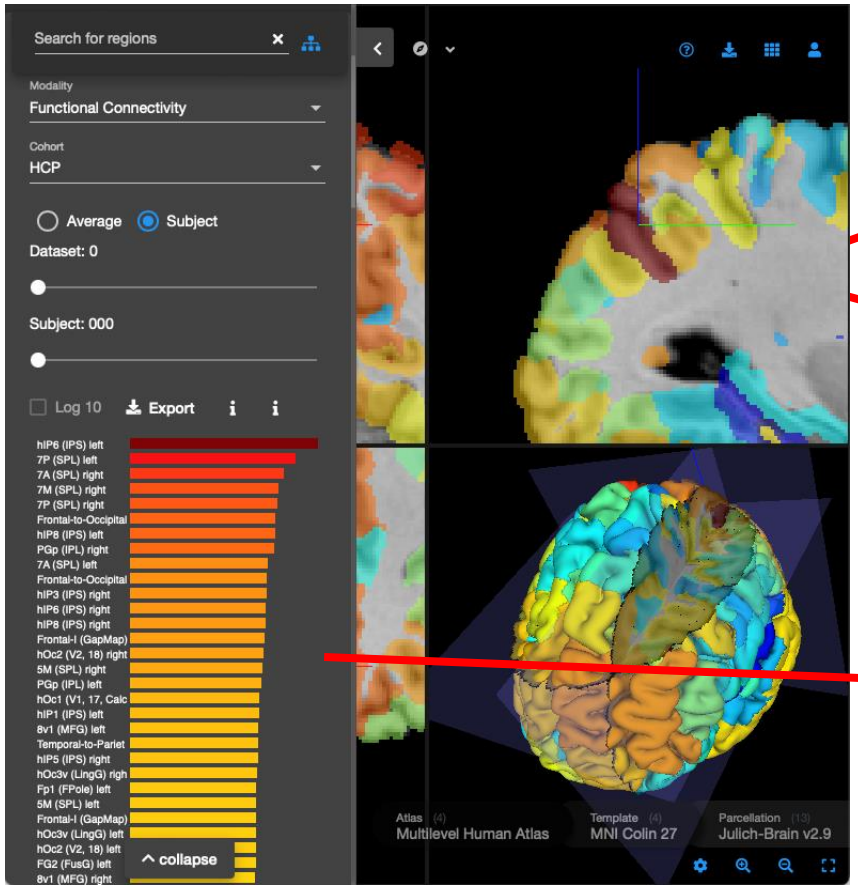


Semantic tagging: name of brain region

„hOc1 left“

Use parcellation map to localize

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)

Aim & scope of the call

- Link spatial omics resources to the human atlas in order to
  - increase the comprehensiveness and utility of the atlas
  - increase accessibility of the data
  - facilitate more precise anatomical localization of the data
  - compare omics data to other multimodal resources
- Data may cover expressions of genes, proteins, or lipids; preferably with single-cell detail
- Not intended for data acquisition - data should have been already collected
- The data may be shared directly on EBRAINS, but implementation of a software interface is expressively welcome
- 18 months foreseen for preparation and integration

Expectations

- Data has already been aquired
- Sufficient availability of provenance information and image material for the underlying tissue samples to realise adequate spatial anchoring
  - Please explain in the application, we suggest to show examples as figures
- A convincing strategy for spatial anchoring (we are happy to discuss some possibilities)
- Please include:
  - Overview of the available data
  - Plan for the methodology of integrating the data
  - Projected timeline
- Submission deadline: September 2, 2024 – 14:00 CEST

What we offer

- Support in curating metadata for your data
- Support in implementing a software interface to the atlas (if your data repository is suitable) – this could incude automatic metadata conversion
- Budget: 60K € of direct costs for data preparation, standardisation efforts as well as necessary software developments on the applicant’s side

Tools for integrating data to the atlas framework

2D sections –
QuickNII

https://ebrains.eu/service/quicknii-and-visualign/

3D volumes of interest –
VoluBA

https://ebrains.eu/service/voluba

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Thank you

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Chaussée de la Hulpe 166
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OC2: Clinical Neuroscience

Volkmar Glauche & Lorenzo Pini

Uniklinik Freiburg & University of Padova

Co-funded by the European Union

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WP2 - CORE ACTIVITIES

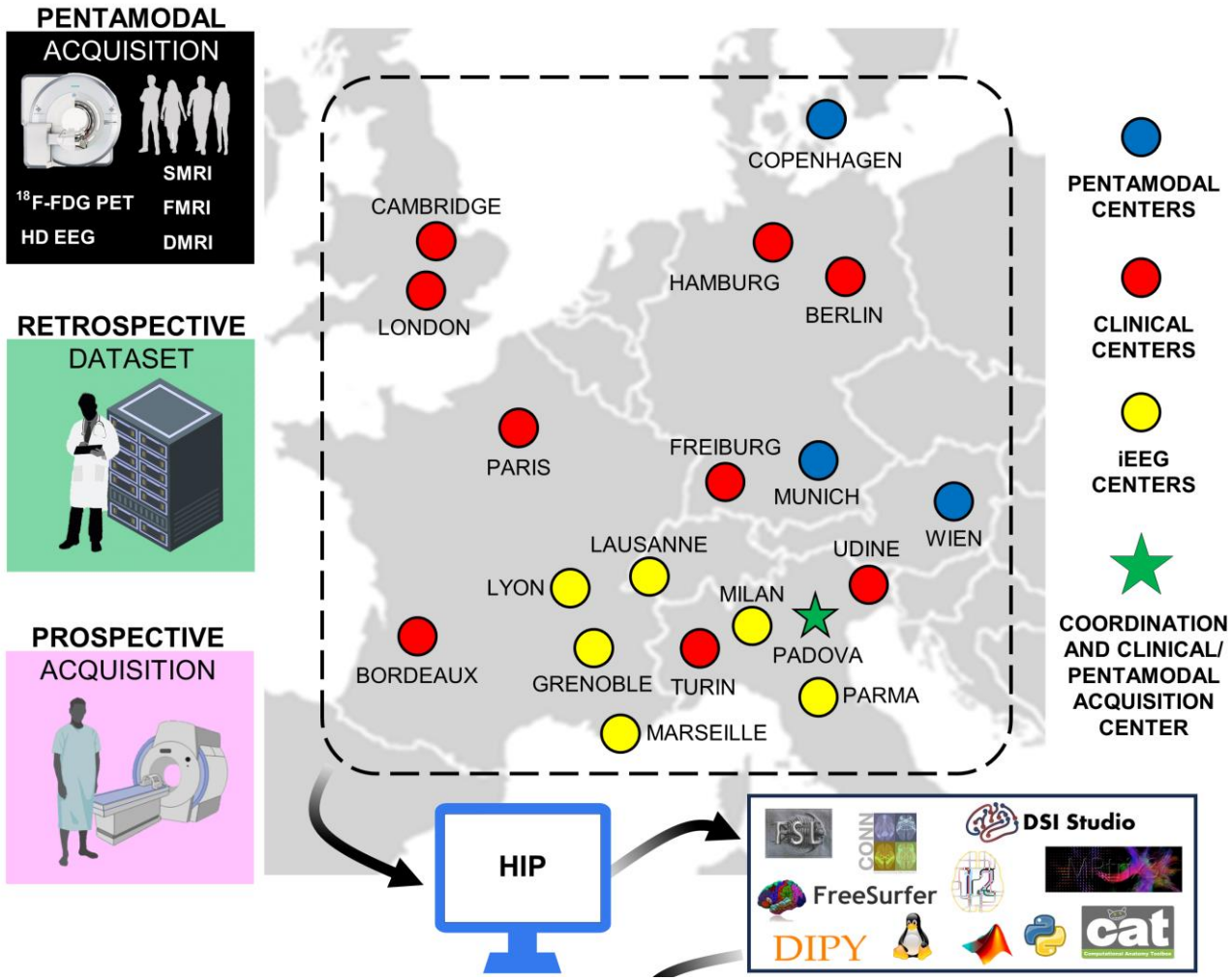
EXTENSION of an existing platform (the HIP) for MRI, PET, cognitive and clinical data

Prospective **ACQUISITION** of a multimodal dataset in healthy (the 5M foundational dataset: sMRI, fMRI, dMRI, hdEEG, PET)

Retrospective/prospective **CENTRALIZATION** of multicenter MRI, iEEG, clinical, and cognitive data in stroke, epilepsy, glioma, Parkinson

Co-funded by the European Union

THE WP2 PARTNERS



Centre Hospitalier Universitaire Vaudois, Swiss (CHUV)

Medizinische Universitaet Wien, Germany (MUW)

Technische Universitaet Muenchen, Germany (TUM)

Region Hovedstaden, Danmark (REGIONH)

Universitaetsklinikum Freiburg, Germania (UKLFR)

Azienda Sanitaria Universitaria Friuli Centrale, Italy (ASUFC)

Universitaetsklinikum hamburg-eppendorf, Germany (UKE)

Universite de bordeaux, France (Ubx)

Charite - universitaetsmedizin berlin, Germany (CHARITE)

Universita degli studi di torino, Italy (UNITO)

Assistance publique hopitaux de paris, France (APHP)

university of cambridge, UK, (UCAM)

University college london, UK (UCL)

Consiglio nazionale delle ricerche, Italy (CNR)

Università Degli Studi di Milano, Italy (UMIL)

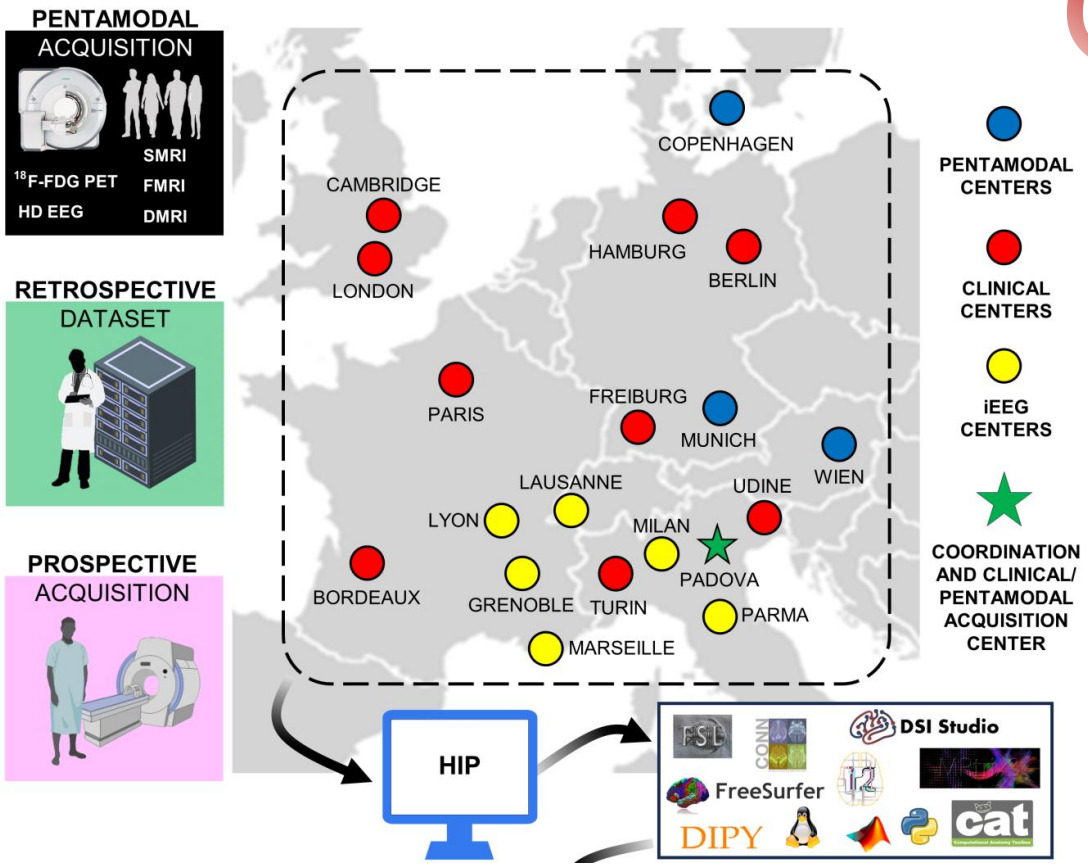
Universite Grenoble Alpes, France (UGA)

Universite Lyon 1 Claude Bernard (UCBL)

THE WP2 PARTNERS

Open calls

Open Clinical neuroscience



Number	Description
Task 2.1	INTEGRATION of imaging data within the HIP
Task 2.2	ACQUISITION of a comprehensive multicentre 5M connectome in healthy controls
Task 2.3	5M connectome imaging features EXTRACTION
Task 2.4	COLLECTION, CURATION, HARMONIZATION, and relative feature EXTRACTION of retrospective multicentric clinical data for focal and degenerative conditions
Task 2.5	COLLECTION, CURATION and HARMONIZATION of iEEG data
Task 2.6	Expanding health data federation to national registries: a stroke Medical Information Platform (MIP) use-case (MIP FERES)
Task 2.7	PUBLIC release
Task 2.8	Open calls, Open access clinical neuroscience
Task 2.9	Dissemination and community engagement

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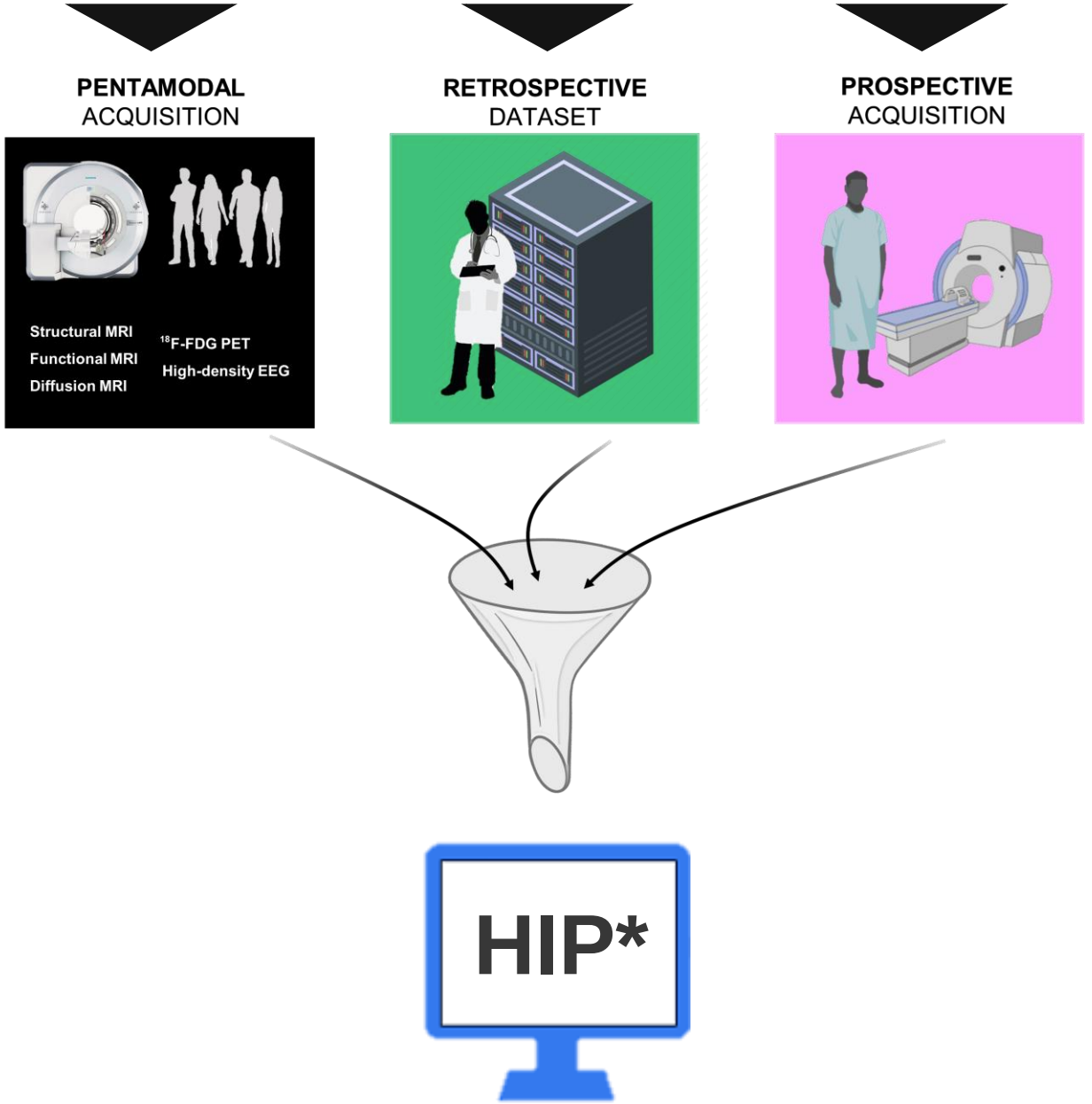
TASK 2.1

INTEGRATION of imaging data within the HIP

The HIP platform

MRI PET
hdEEG iEEG



*Platform name to be discussed**

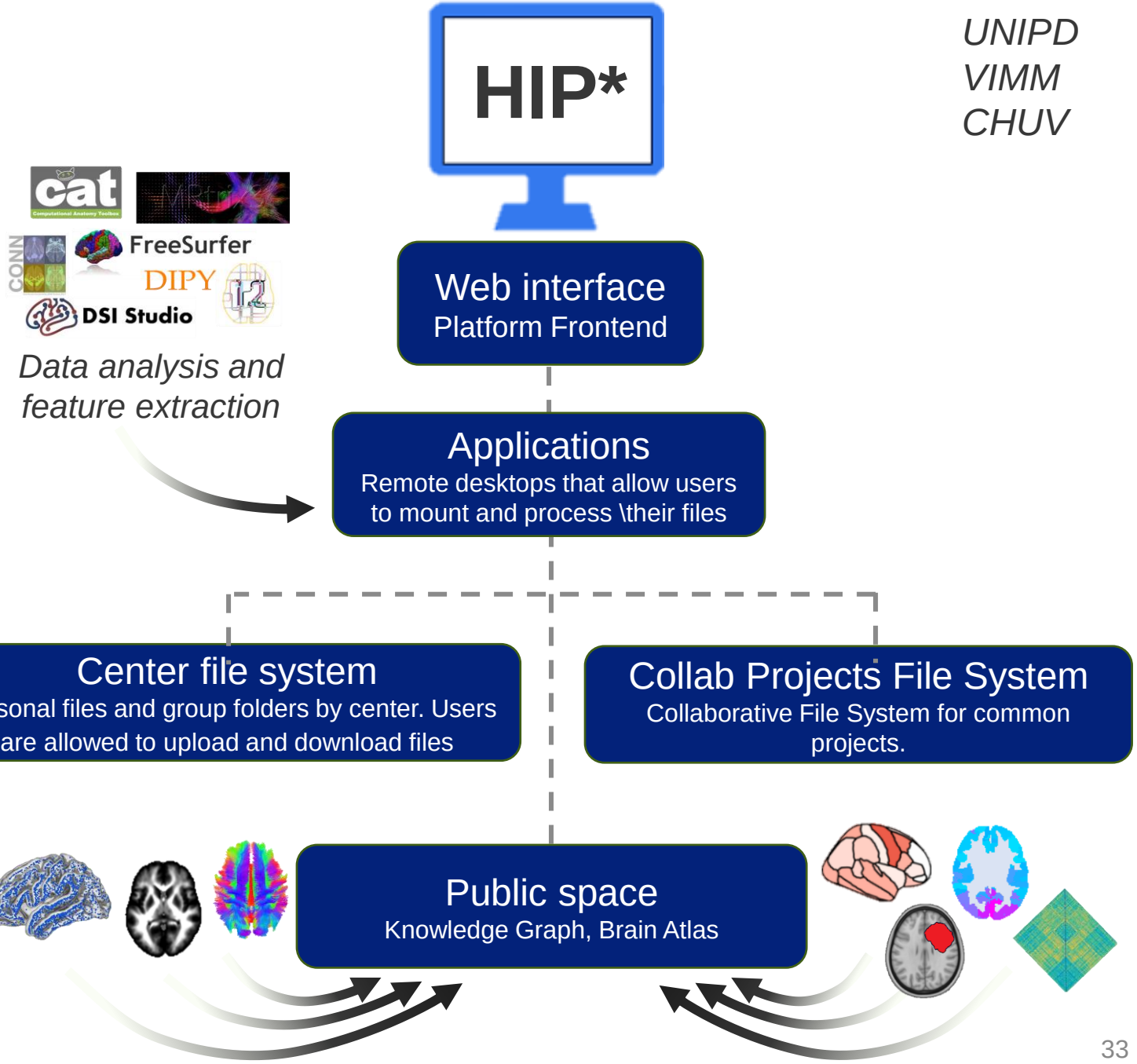
TASK 2.1

UNIPD
VIMM
CHUV

INTEGRATION of imaging data within the HIP

The HIP
platform

MRI PET
hdEEG iEEG



*Platform name to be discussed**

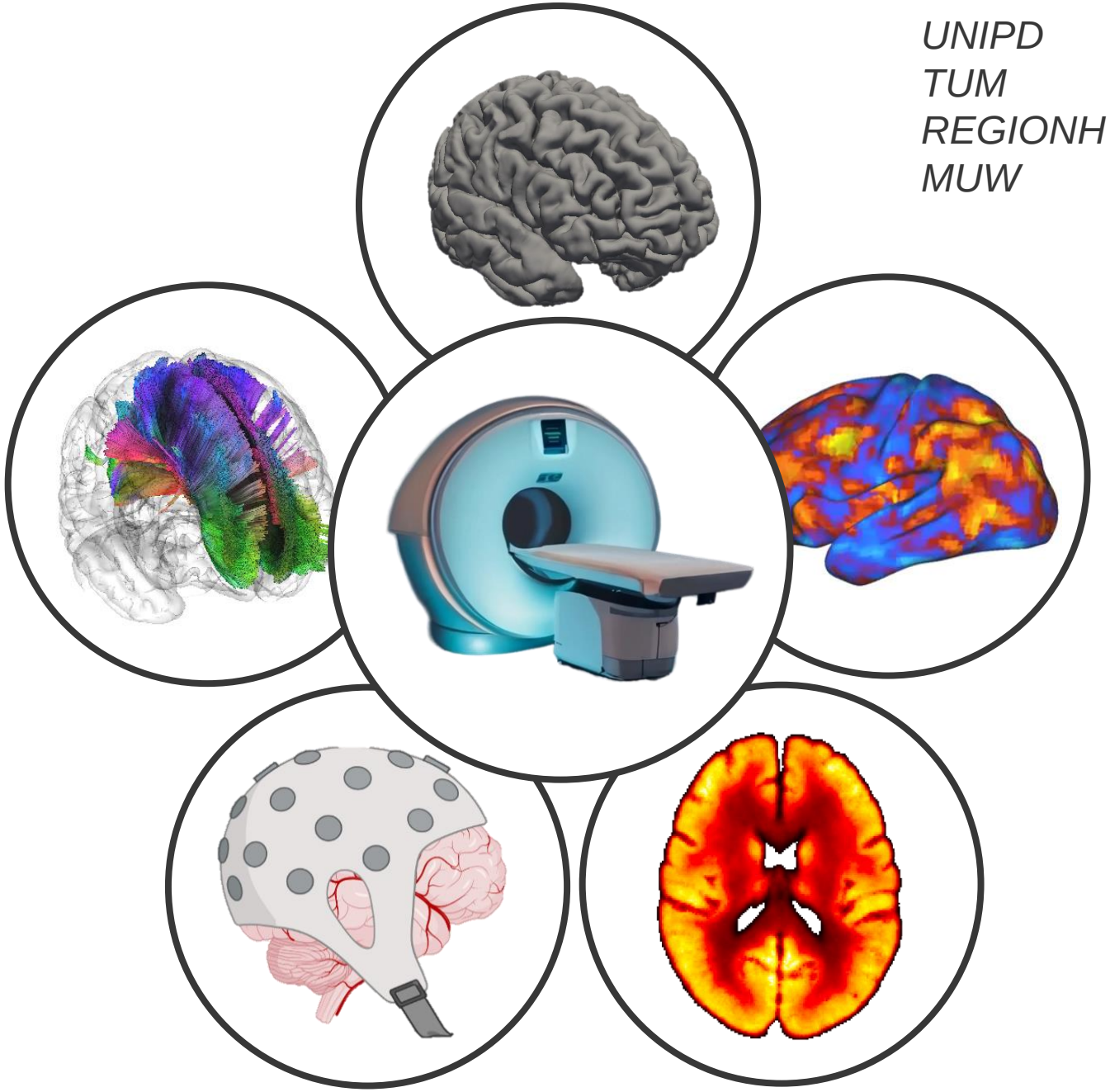
TASK 2.2 – 2.3

UNIPD
TUM
REGIONH
MUW

ACQUISITION and PROCESSING of the 5M connectome

The 5M
connectome

Structural MRI
Functional MRI
Diffusion MRI
hdEEG
Metabolism



COGNITIVELY HEALTHY CONTROLS

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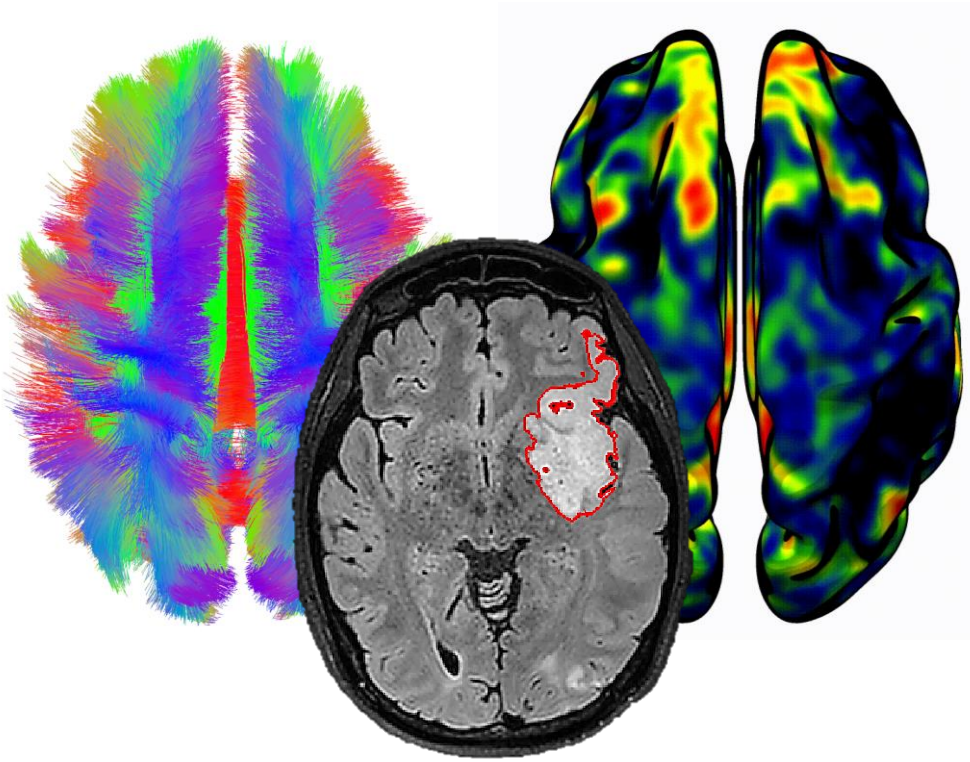
TASK 2.4

collection, curation, harmonization, and feature extraction of ***RETROSPECTIVE*** *data**

The clinical
connectome

Stroke
Glioma
Parkinson



UNIPD
UKLFR
ASUFC
UKE
UBx
CHARITE
UNITO
APHP
UCAM
UCL

+ 2 NEW PARTNERS

*clinical and cognitive scores, structural MRI (T1w, T2w, Flair), diffusion imaging, functional imaging, lesion masks

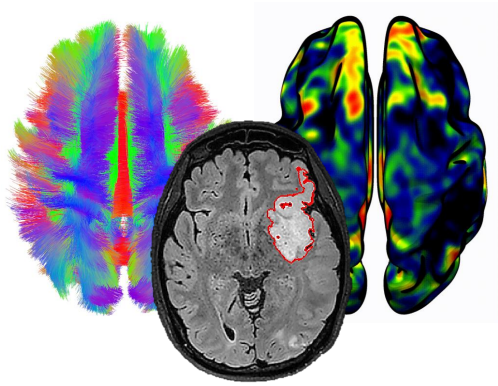
The more data is available (and of good quality), the better.

TASK 2.4

collection, curation, harmonization, and feature extraction of ***RETROSPECTIVE*** *data**

The clinical
connectome

Stroke
Glioma
Parkinson



- Centralization of large retrospective clinical datasets across EU clinical/research centers
- Harmonization of brain features extraction from highly heterogeneous clinical datasets

UNIPD
UKLFR
ASUFC
UKE
UBx
CHARITE
UNITO
APHP
UCAM
UCL

+ 2 NEW PARTNERS

*clinical and cognitive scores, structural MRI (T1w, T2w, Flair), diffusion imaging, functional imaging, lesion masks

The more data is available (and of good quality), the better.

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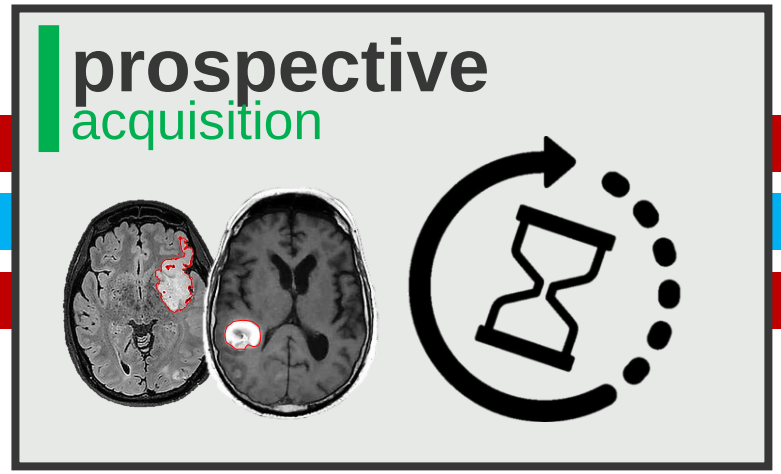
TASK 2.4 - 2.5

PROSPECTIVE collection of clinical, cognitive and neuroimaging data based on **HARMONIZED PROTOCOL**



01

02

03

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UKLFR
ASUFC
UKE
UBx
CHARITE
UNITO
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UCAM
UCL

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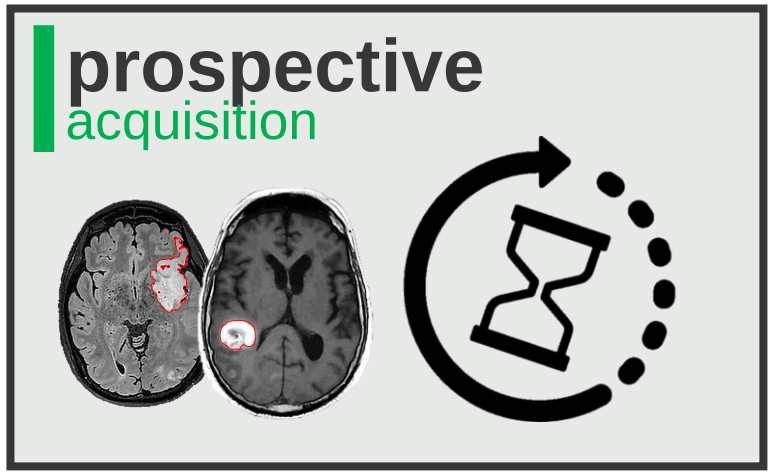
TASK 2.4 - 2.5

PROSPECTIVE collection of clinical, cognitive and neuroimaging data based on **HARMONIZED PROTOCOL**

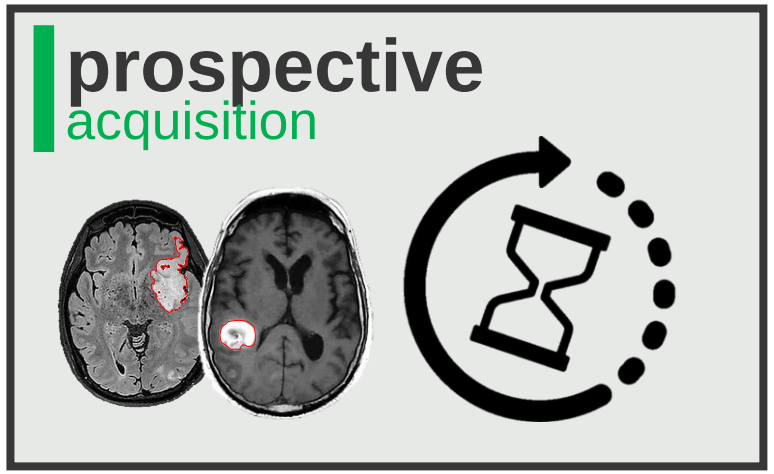


Clinical and MRI acquisition protocol PROPOSAL from WP2 consortium

Co-funded by the European Union

TASK 2.4 - 2.5

PROSPECTIVE collection of clinical, cognitive and neuroimaging data based on **HARMONIZED PROTOCOL**



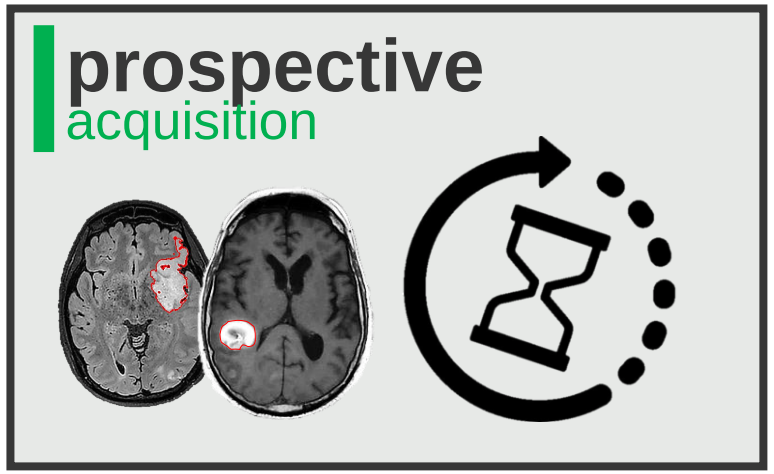
Clinical and MRI acquisition protocol PROPOSAL from WP2 consortium

ean
european academy of neurology

Protocol shared with EAN for a Delphi panel

TASK 2.4 - 2.5

PROSPECTIVE collection of clinical, cognitive and neuroimaging data based on **HARMONIZED PROTOCOL**



Clinical and MRI acquisition protocol PROPOSAL from WP2 consortium

ean european academy of neurology

Protocol shared with EAN for a Delphi panel

Protocol DECISION and SHARING with clinical centres for data acquisition

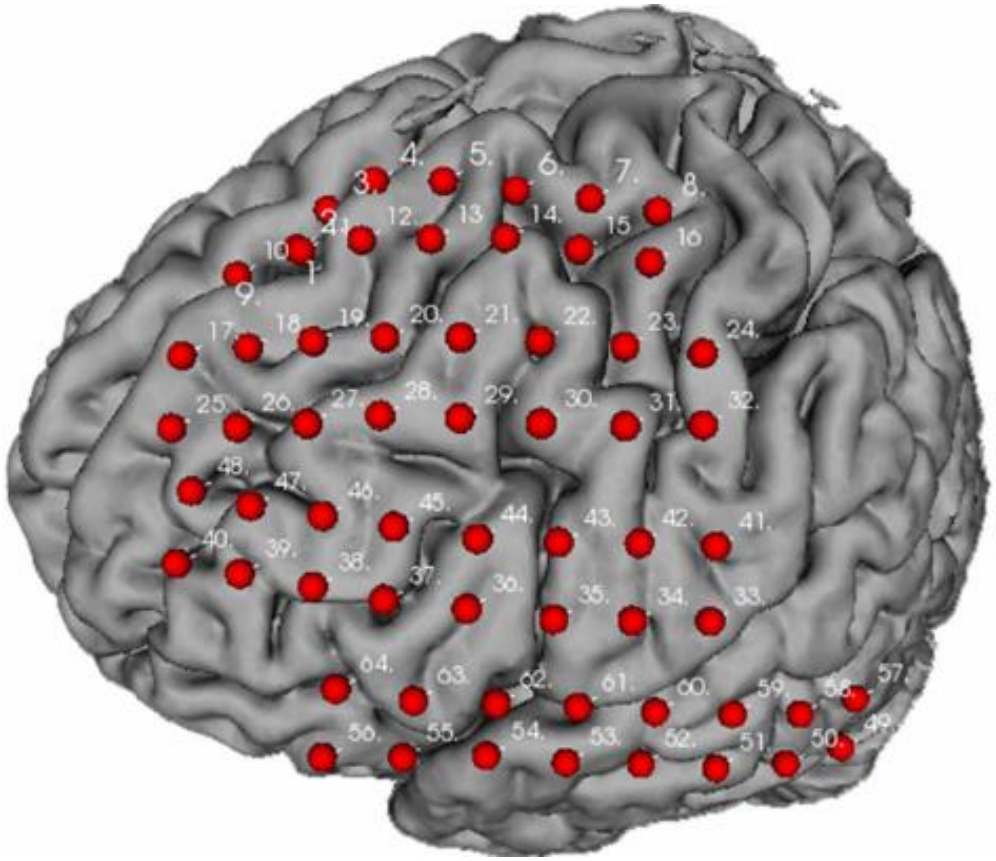
TASK 2.5

CHUV
CNR
UMIL
UGA
UCBL

COLLECTION, CURATION and HARMONIZATION of iEEG data

iEEG
data

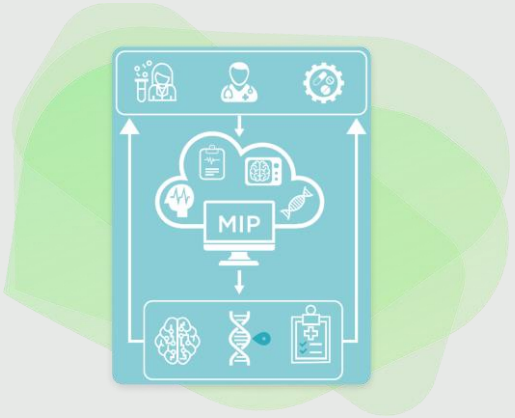
Epilepsy



TASK 2.6 – 2.7 – 2.8 – 2.9

CHUV
EAN
UBx
UNIPD
UKLFR

MIP
data



Expanding health data federation to national registries: a stroke Medical Information Platform (MIP) use-case (MIP FERES)

Public
release

Open
calls

Open access clinical neuroscience

Dissemination

Dissemination and community engagement

Co-funded by the European Union
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OC3: Promoting the neuroscientific use of EBRAINS 2.0 digital brain twins and simulation services

Dr. Pierpaolo Sorrentino & Dr. Spase Petkoski

The Institut de Neurosciences des Systèmes, Aix-Marseille Université, Marseille, France

Co-funded by the European Union

EBRAINS 2.0 has received funding from the European Union's Research and Innovation Program Horizon Europe under Grant Agreement No. 101147319.

WP3 Open Calls

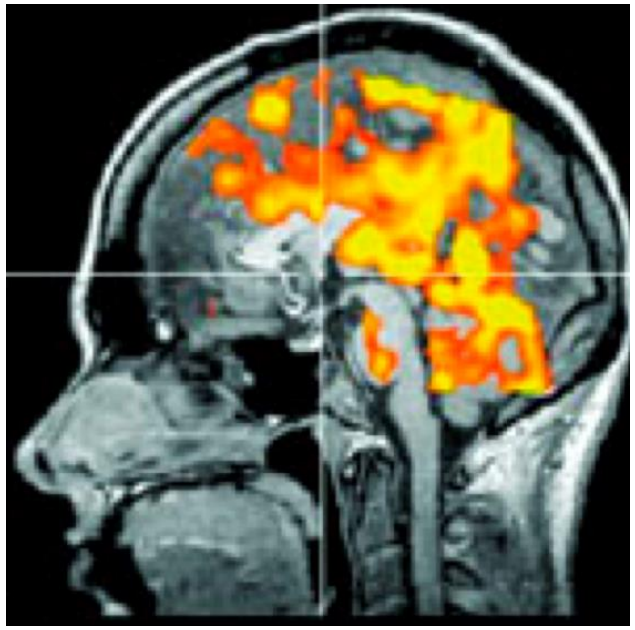
- **Promoting the neuroscientific use of EBRAINS 2.0 digital brain twins and simulation services**

- WP3 Creating digital twins through modelling and simulation

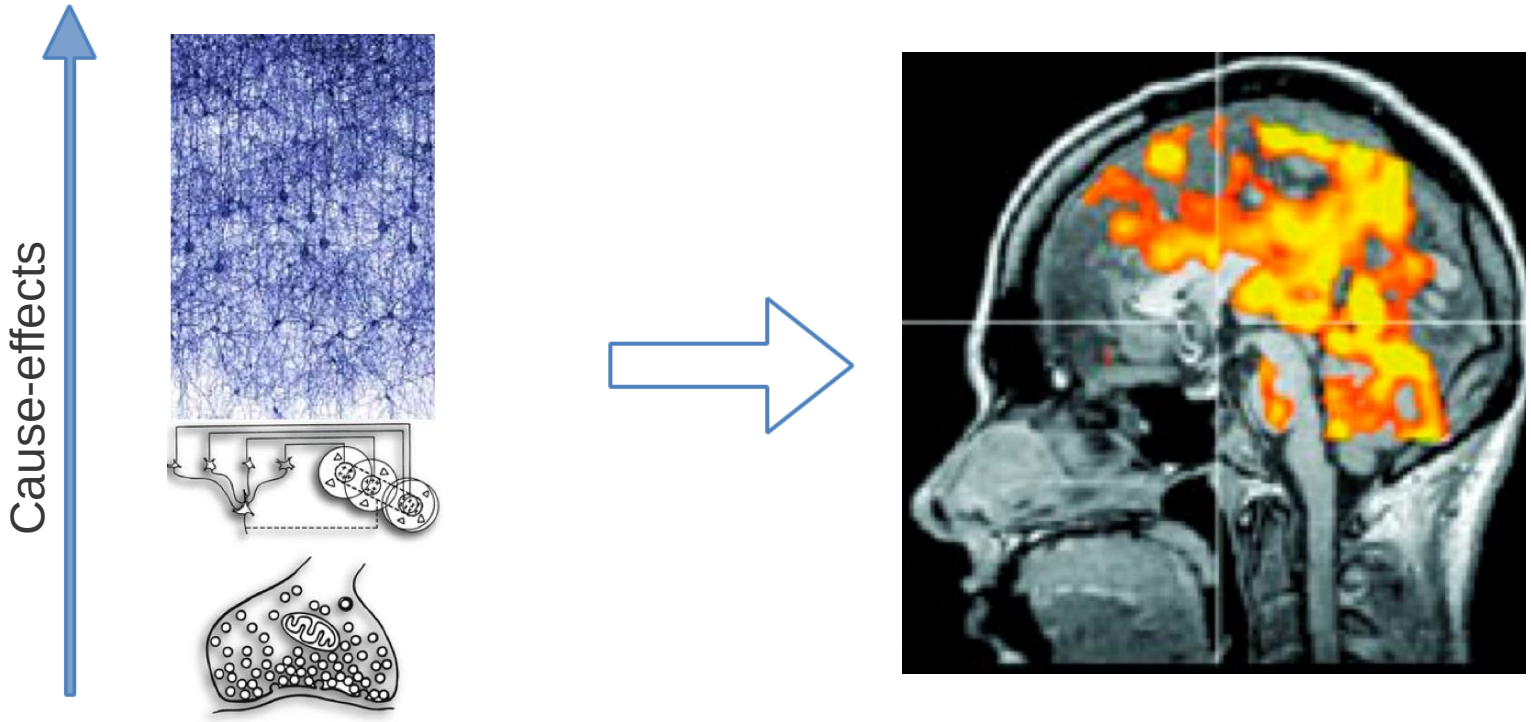
- Aim of the WP3 Open Calls:
  - to promote the use of EBRAINS through the development of a convincing neuroscientific use case of the **digital twin** modeling framework.

Co-funded by the European Union

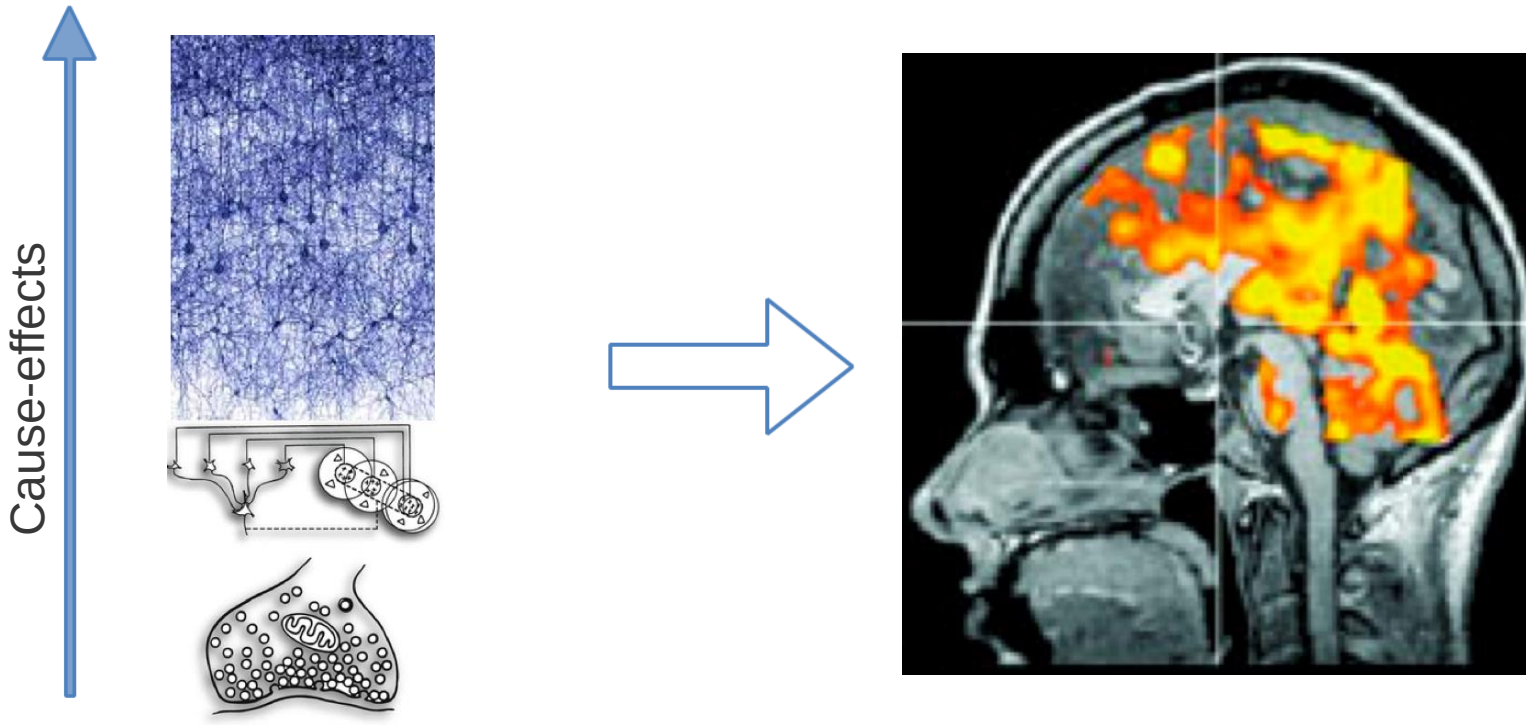
Scope of the Call: Use the standard brain models and EBRAINS workflows to respond to a challenge in brain medicine and/or brain understanding



Scope of the Call: Use the standard brain models and EBRAINS workflows to respond to a challenge in brain medicine and/or brain understanding



Scope of the Call: Use the standard brain models and EBRAINS workflows to respond to a challenge in brain medicine and/or brain understanding

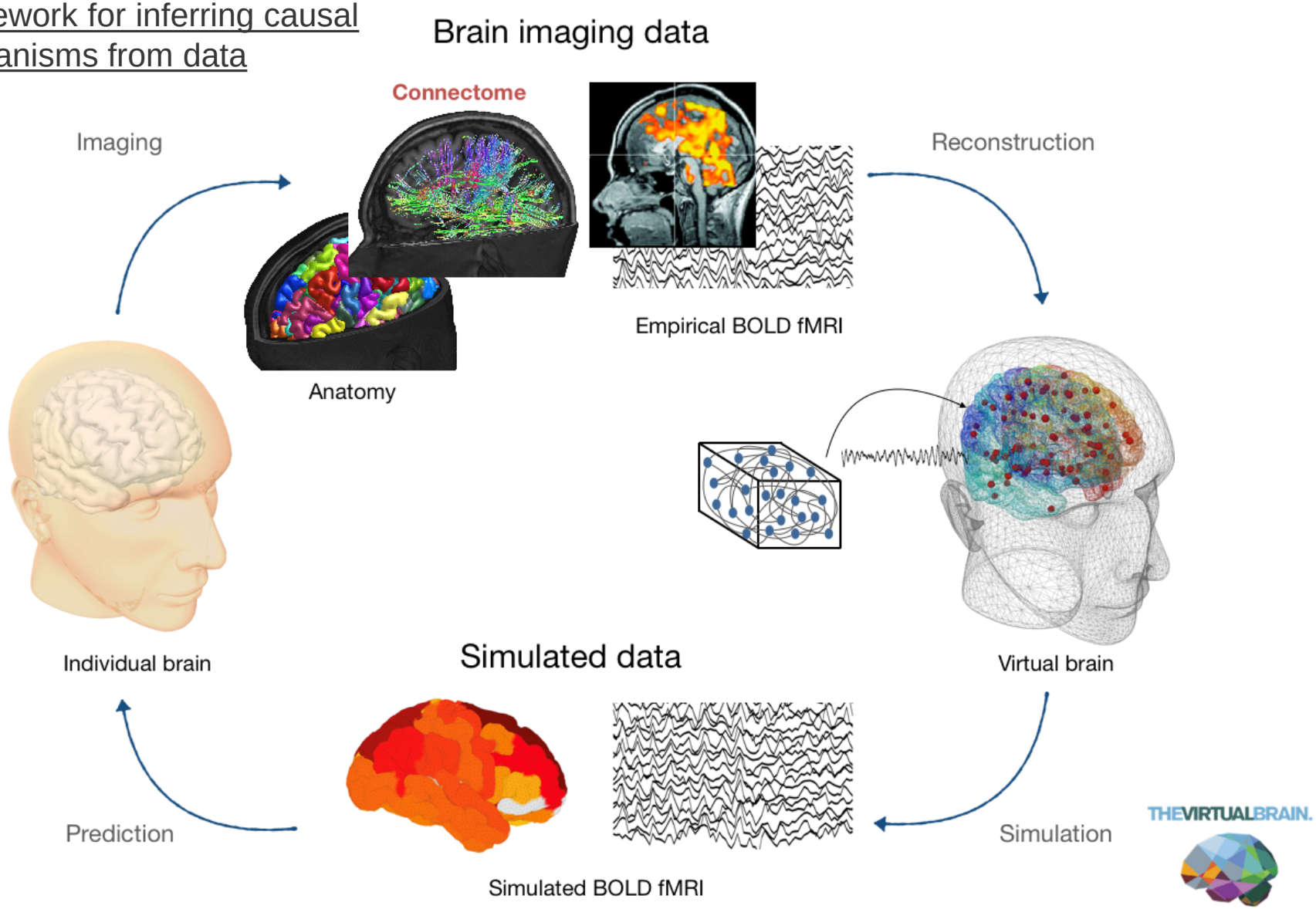


- Development of more effective treatments, new drugs, diagnostics, or preventive measures for neuro-psychiatric disorders;
- Innovative approaches in simulation of brain activity, simulation-based inference and support for clinicians wishing to integrate digital twin approaches in their practice.

- **Providing feedback** on the quality of tools and make suggestions for their improvement;
- **Integration of the own tools** into the modelling and simulation workflows of WP3.

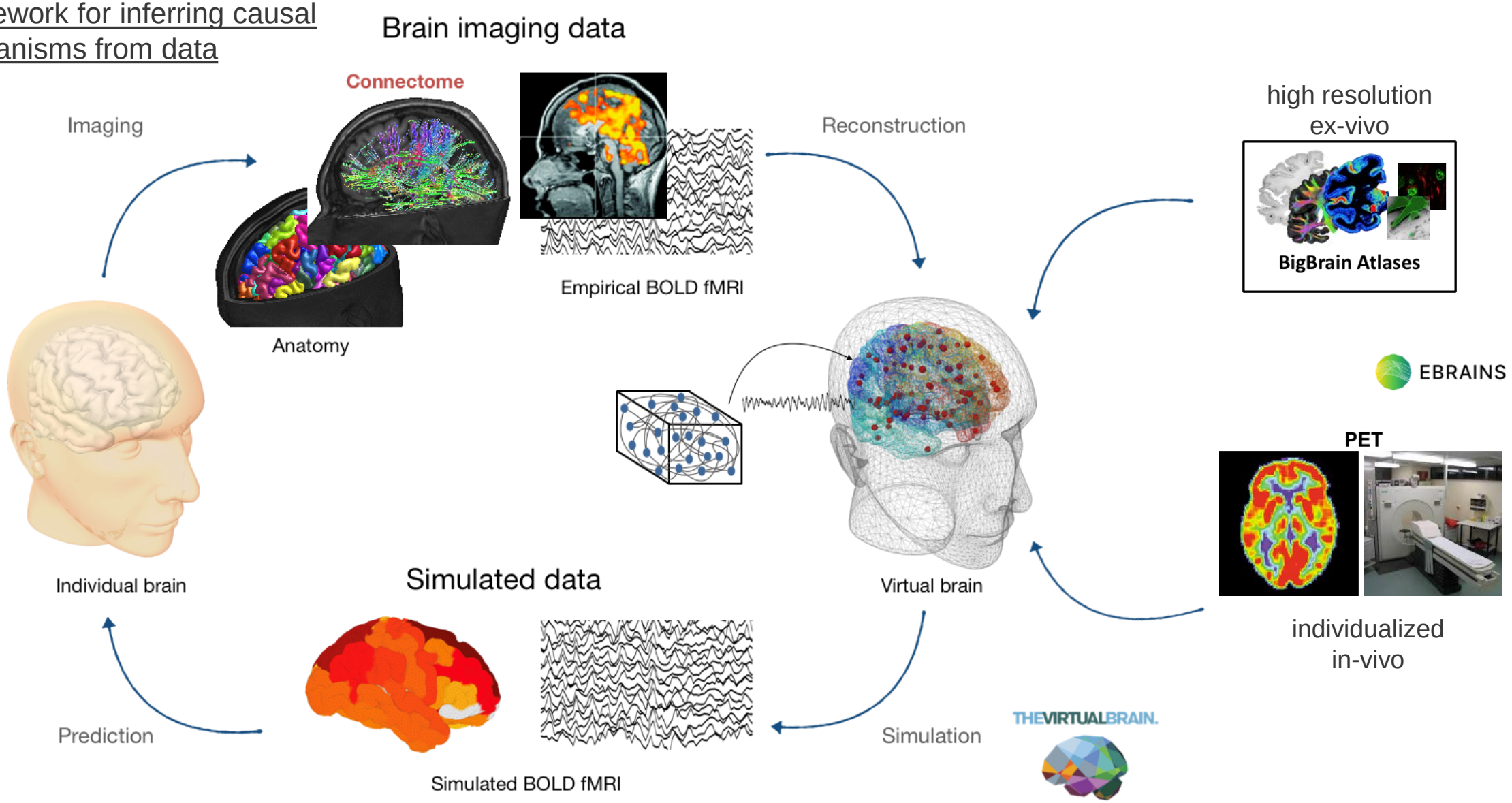
Example: Brain Network Models with The Virtual Brain (TVB)

Framework for inferring causal mechanisms from data

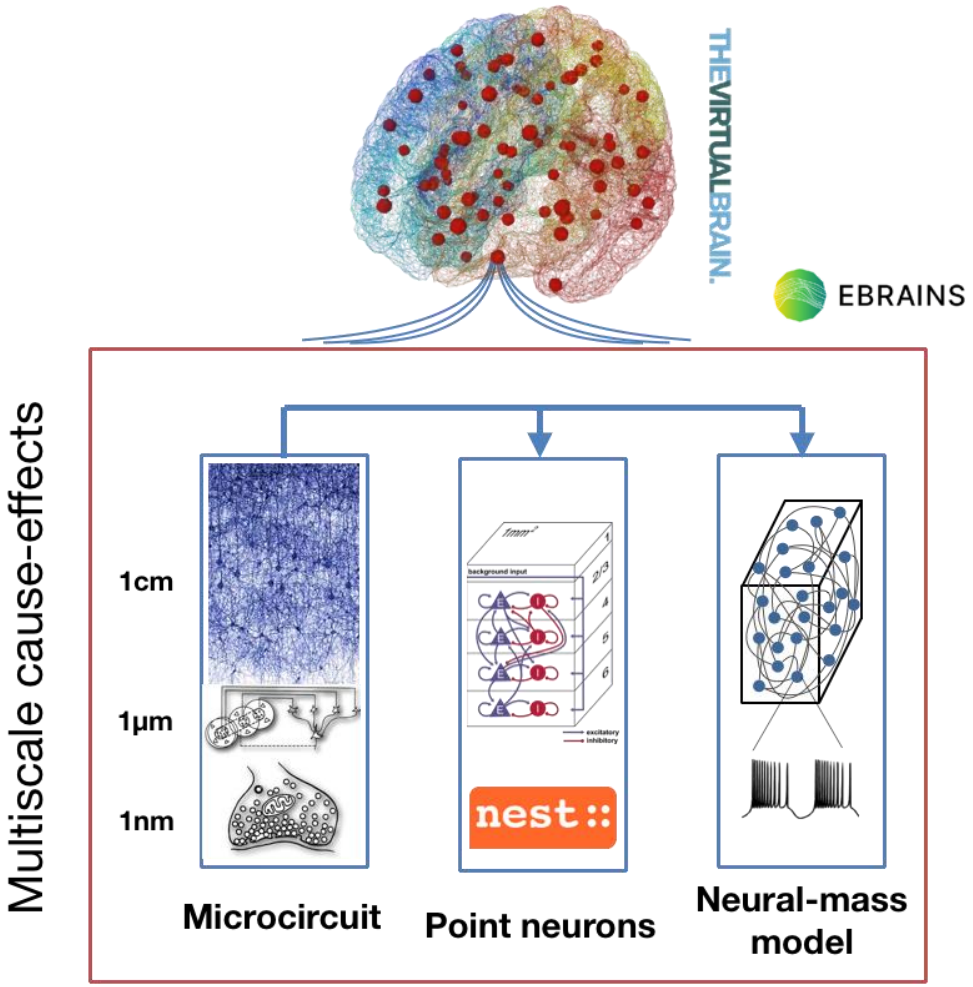


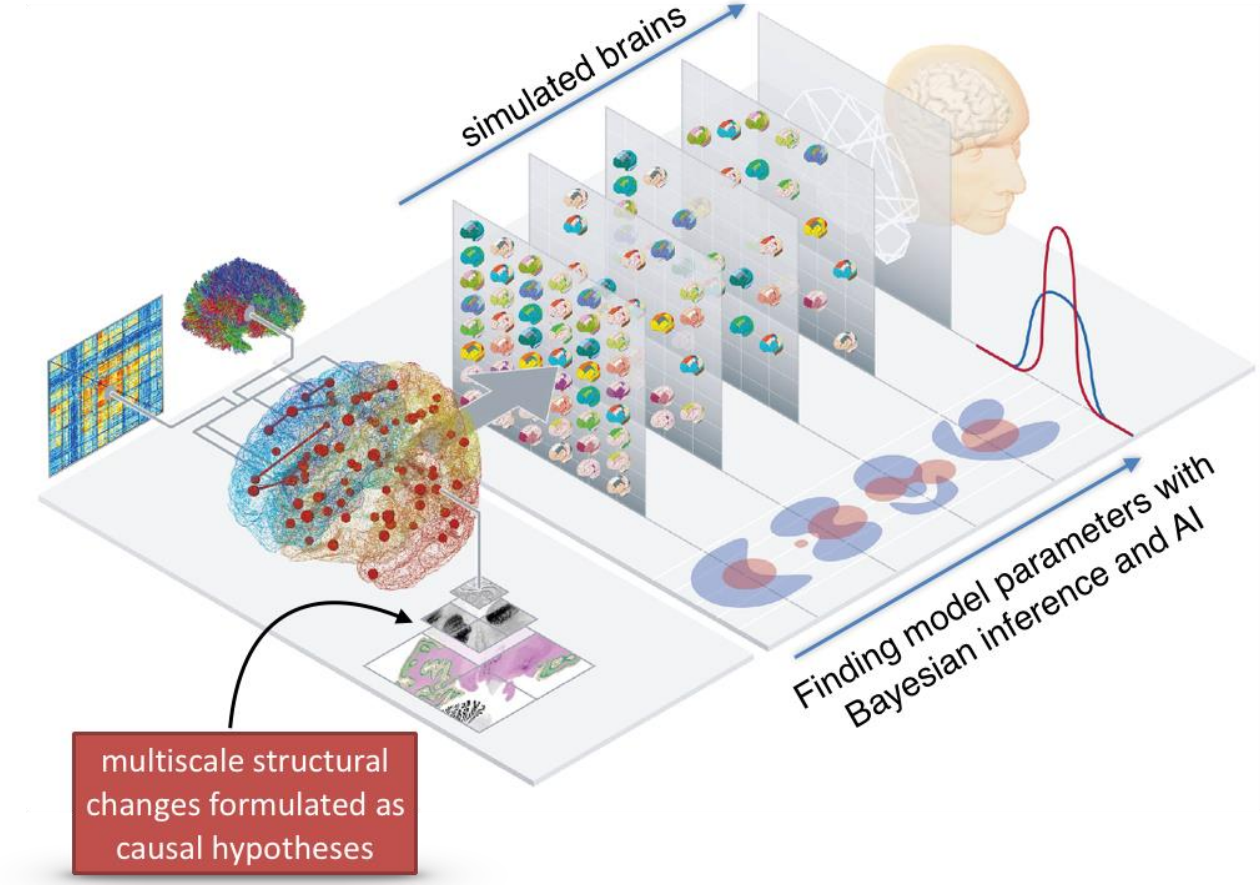
Example: Brain Network Models with The Virtual Brain (TVB)

Framework for inferring causal mechanisms from data



Linking biomarkers with underlying multiscale causes





Expected Contributions include

- Theory and tools to extract **data features** to be modelled
- **Workflows** to transfer multimodal **features into digital twin models**
- Strategies for **model validation and inference**
- **Data processing** pipelines
- Workflows to be used by **clinicians**

- **Integration** of existing data with EBRAINS
- **No support for new data** acquisitions

Co-funded by the European Union

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OC4: Recruiting large data collections for FAIR data sharing and analysis in EBRAINS

Sophia Pieschnik
Maja Puchades

University of Oslo

Co-funded by
the European Union

Topic

Increase the FAIRness of large neuroscience data collection through the EBRAINS RI

- already acquired data with related metadata
- all modalities, priority to experimental rodent brain research and human data (from healthy subjects or subjects with brain disorders), including derived data from structural and functional microscopy, MRI, PET, EEG, and electrophysiology
- compatible for analysis using EBRAINS tools and services, and/or external widely used analysis pipelines that are not yet integrated into EBRAINS
- four proposals will be selected, estimated timeline of one year starting in January 2025

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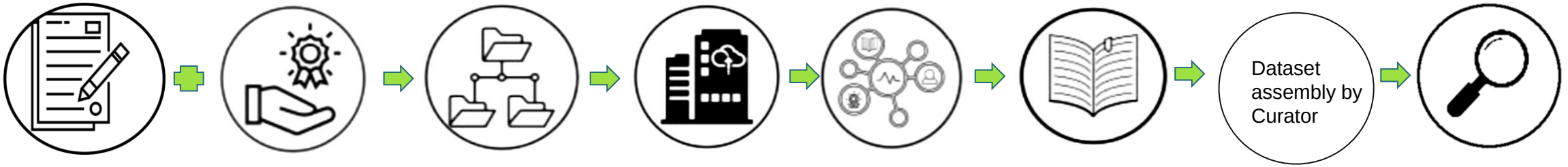
Data publication process



Request curation

Submit Ethics and law compliance check

Ensure data is structured consistently

Upload data

Provide openMINDS metadata

Write a data descriptor

Preview data for publication

Provide information

Check your data

Deliver data, metadata and data descriptor

https://nettskjema.no/a/386195

curation-support@ebrains.eu

The openMINDS metadata framework

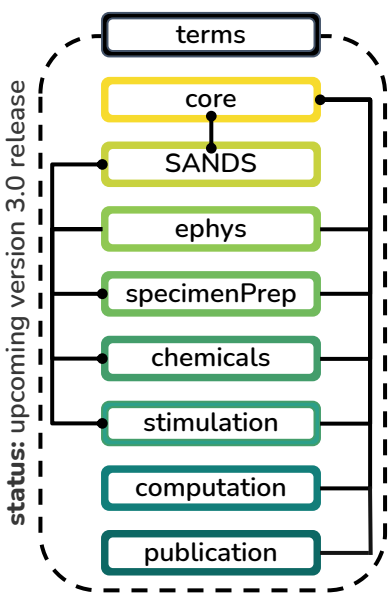
Upcoming extension:

- neuroimaging
- microscopy

Major updates planned:

- ephys
- specimenPrep
- stimulation

metadata models



controlled instances

InterLeX

Knowledge Space

supportive tooling

Format pipeline

MATLAB package

Python package

Mappings/ Converters

support@om-i.org

https://openminds.om-i.org

Dataset shared on EBRAINS

EBRAINS

Share data About

Search (e.g. mouse hippocampus or calbindin)

SEARCH

CATEGORIES

Project	127
Dataset	**1067**
Model	256
(Meta)Data Model	4
Software	226
Web service	18
Contributor	2206

FILTERS Reset

ACCESSIBILITY

☐ free access	933
☐ under embargo	92
☐ controlled access	39
☐ restricted access	3

Viewing **1-20** of **1067** results.

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

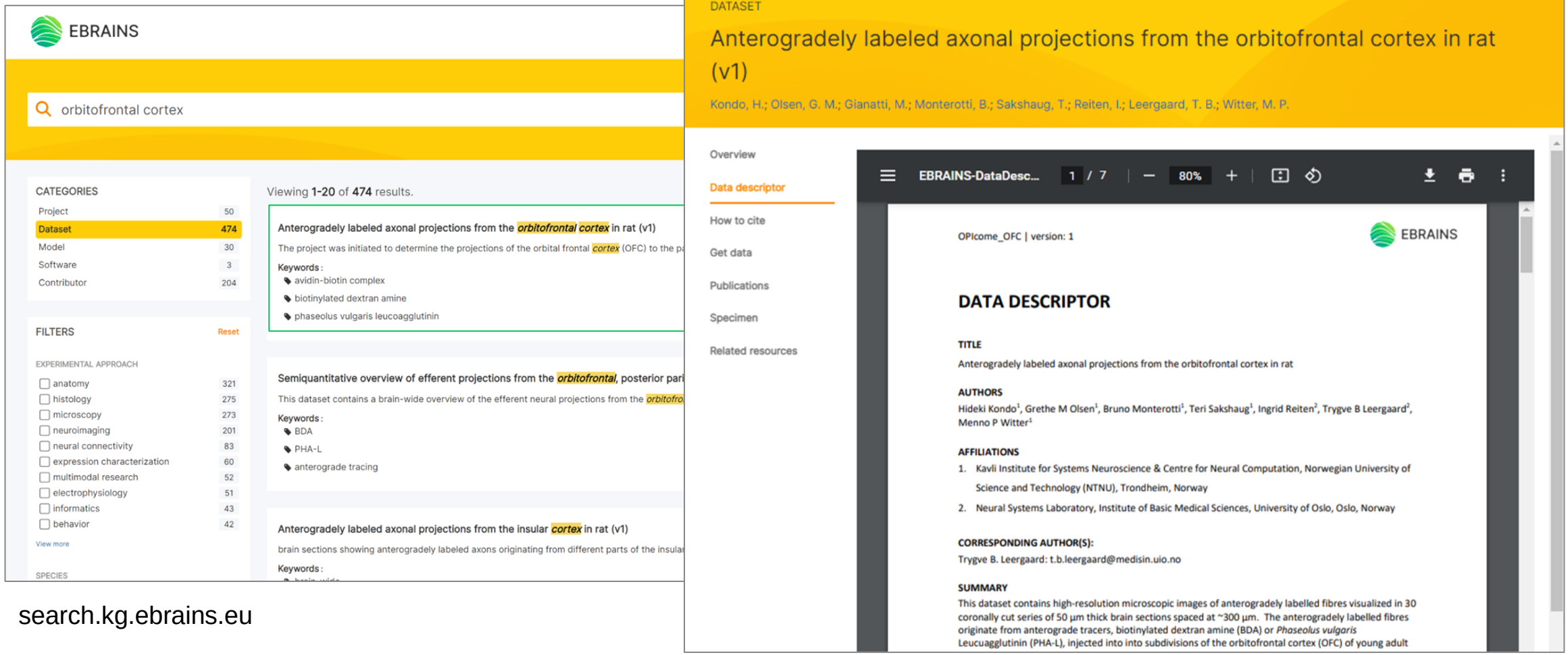
The Swedish National Facility for Magnetoencephalography Parkinson's Disease Dataset

Released: 2023-11-17

Accessibility: controlled access

Custodians: Lundqvist, D.

The Data Descriptor



search.kg.ebrains.eu

Datafiles directly downloadable and viewer links

DATASET

Multiplane microscopic atlas of rat brain z

containing glia stained with Timm's sulphic

Blixhavn, C. H.; Haug, F.-M. S.; Kleven, H.; Puchades, M. A.; Bjaalie, J. G.; Leerg

Overview

Data descriptor

How to cite

Get data

Publications

Specimens

Related resources

How to use

Filter by none

Group by none

754 files

Search the files...

d-0bf058d2-6bf7-4e0f-8067-345e07109bf8

H108

H200

H201

H441

EBRAINS_DataDescriptor_TimmNisslAtlas.pd

Licence-CC-BY.pdf

TimmNissl_previewImage.png

DATASET

Multiplane microscopic atlas of rat brain zincergic terminal fields and metal-containing glia stained with Timm's sulphide silver method (v1)

Blixhavn, C. H.; Haug, F.-M. S.; Kleven, H.; Puchades, M. A.; Bjaalie, J. G.; Leergaard, T. B.

Overview

Data descriptor

How to cite

Get data

Publications

Specimens

Related resources

How to use

fields of zincergic fibre systems

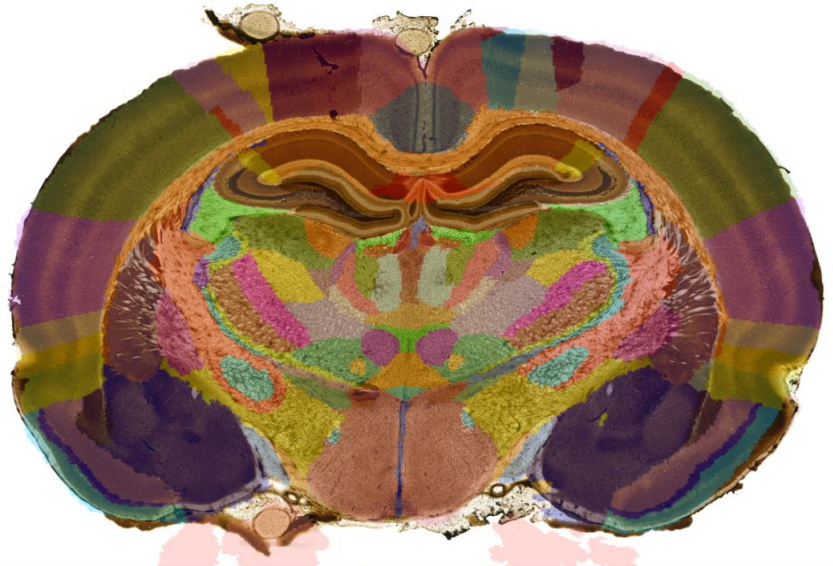
perikarya and glial cells, and as

researchers interested in normal

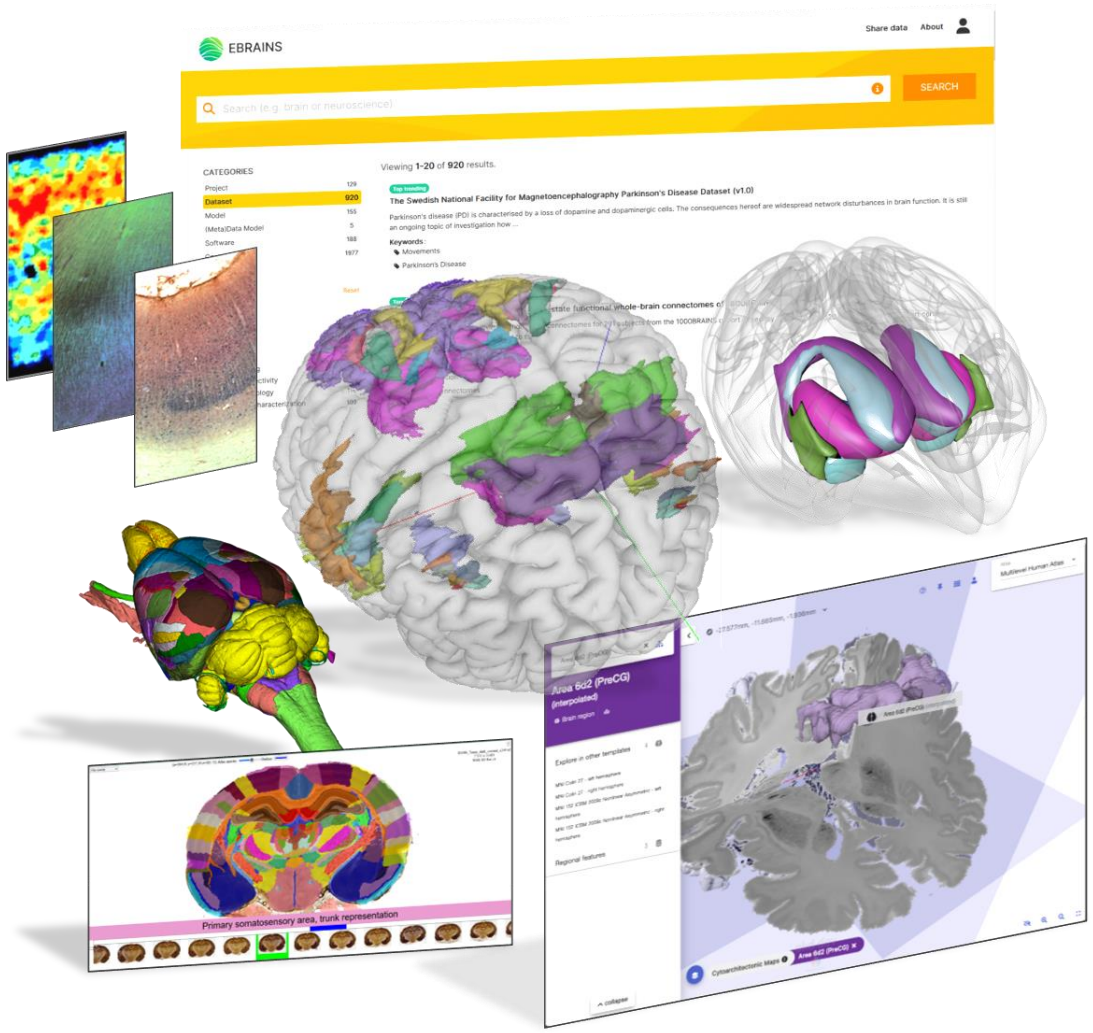
Version specification: This is tl

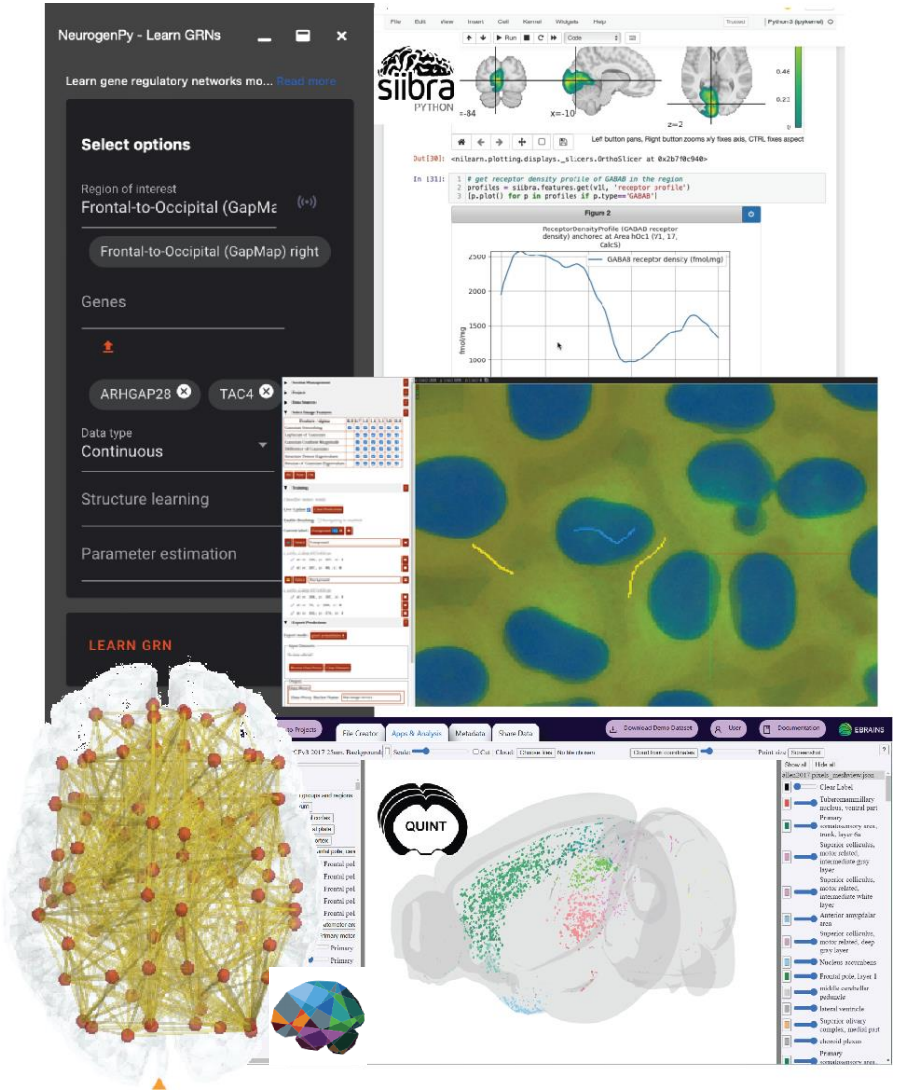
View data in LocaliZoom:

- subject H108
- subject H108a_Timm_light
- subject H108b_Timm_dark
- subject H108c_Nissl
- subject H200
- subject H200a_Nissl
- subject H200b_Timm_dark
- subject H201
- subject H201a_Timm_dark
- subject H201b_Nissl
- subject H201c_Timm_light
- subject H441
- subject H441a_Timm_dark
- subject H441b_Nissl



Data integration and analysis





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