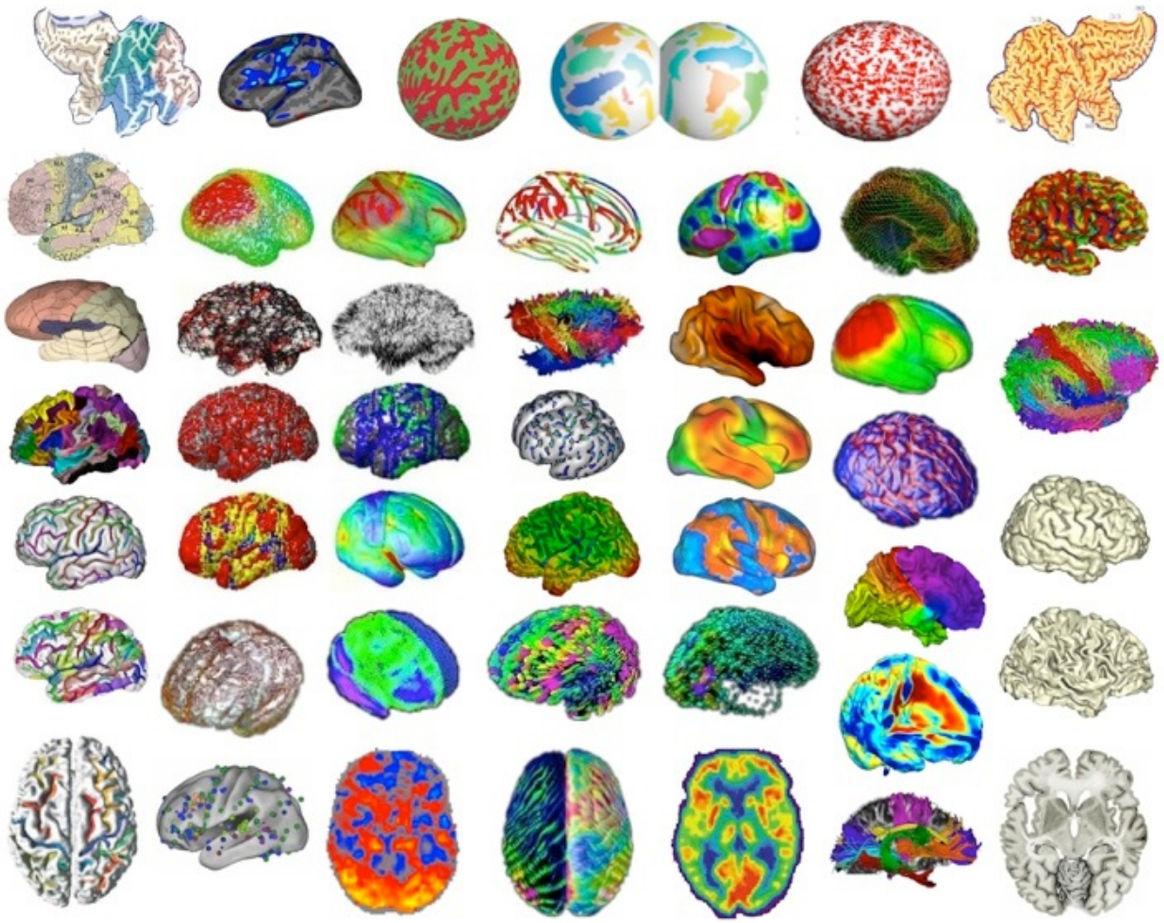
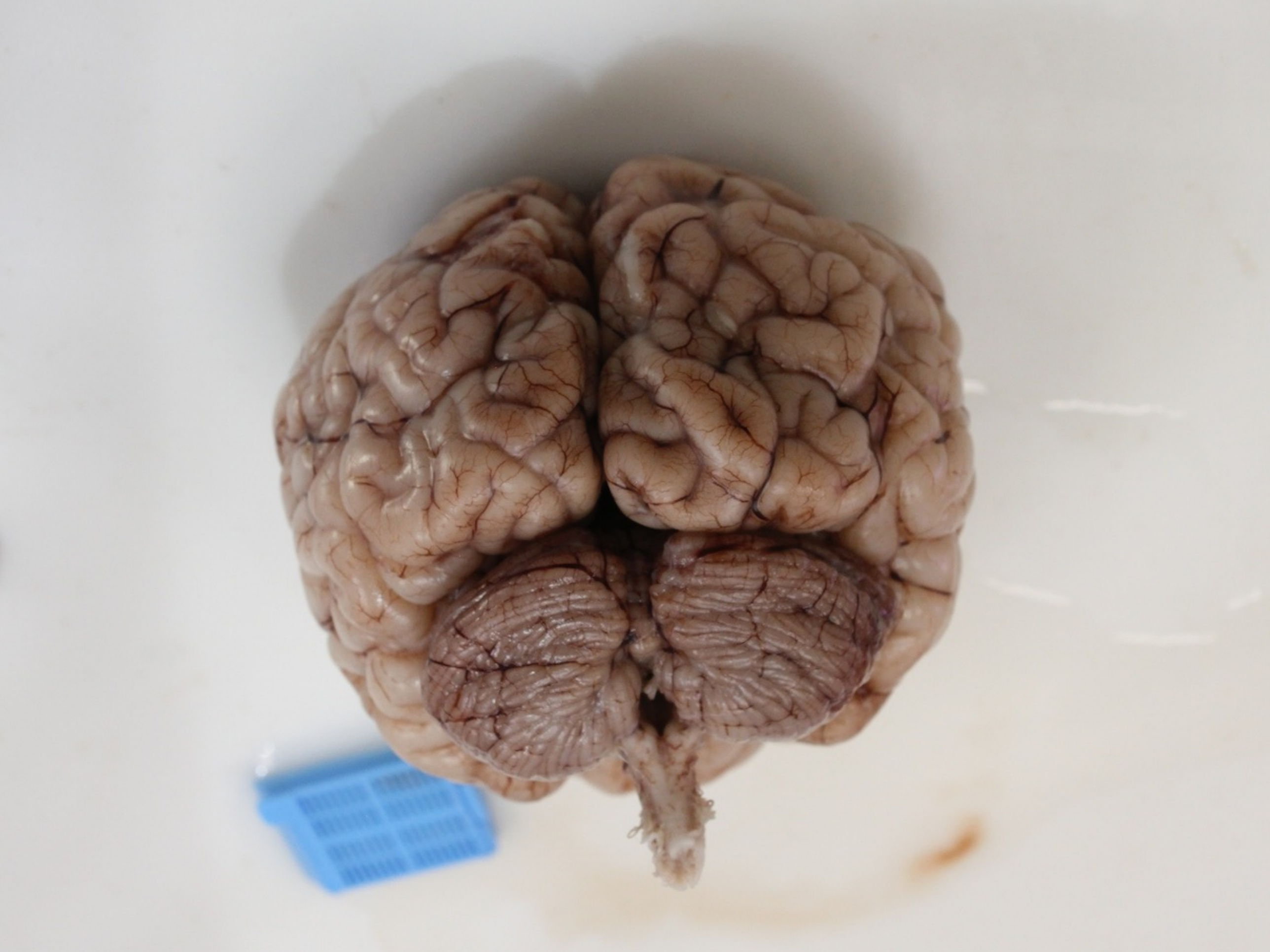
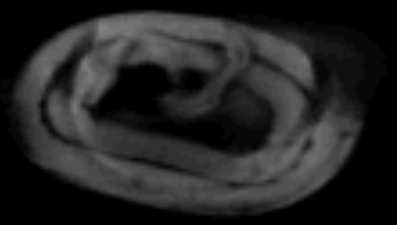
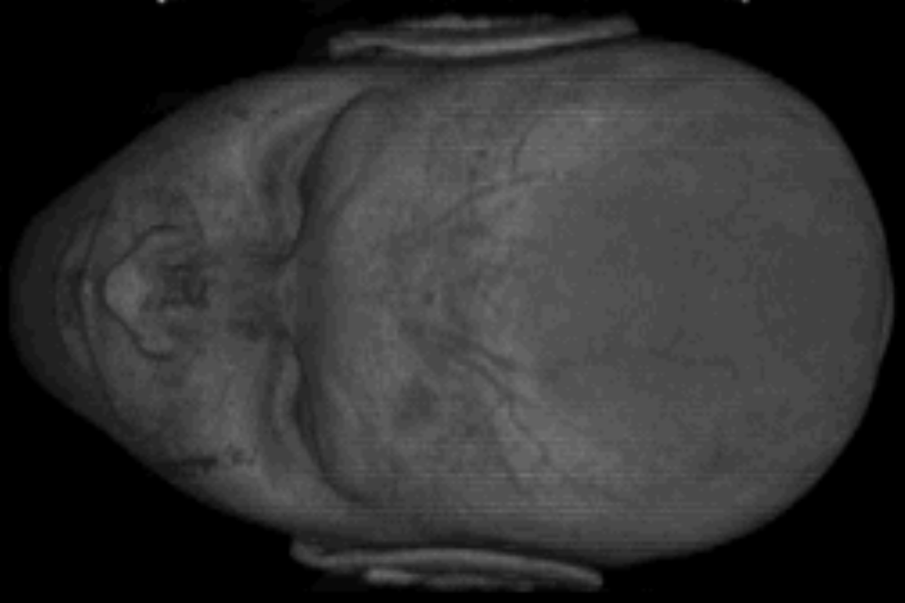
Brain imaging & open science!

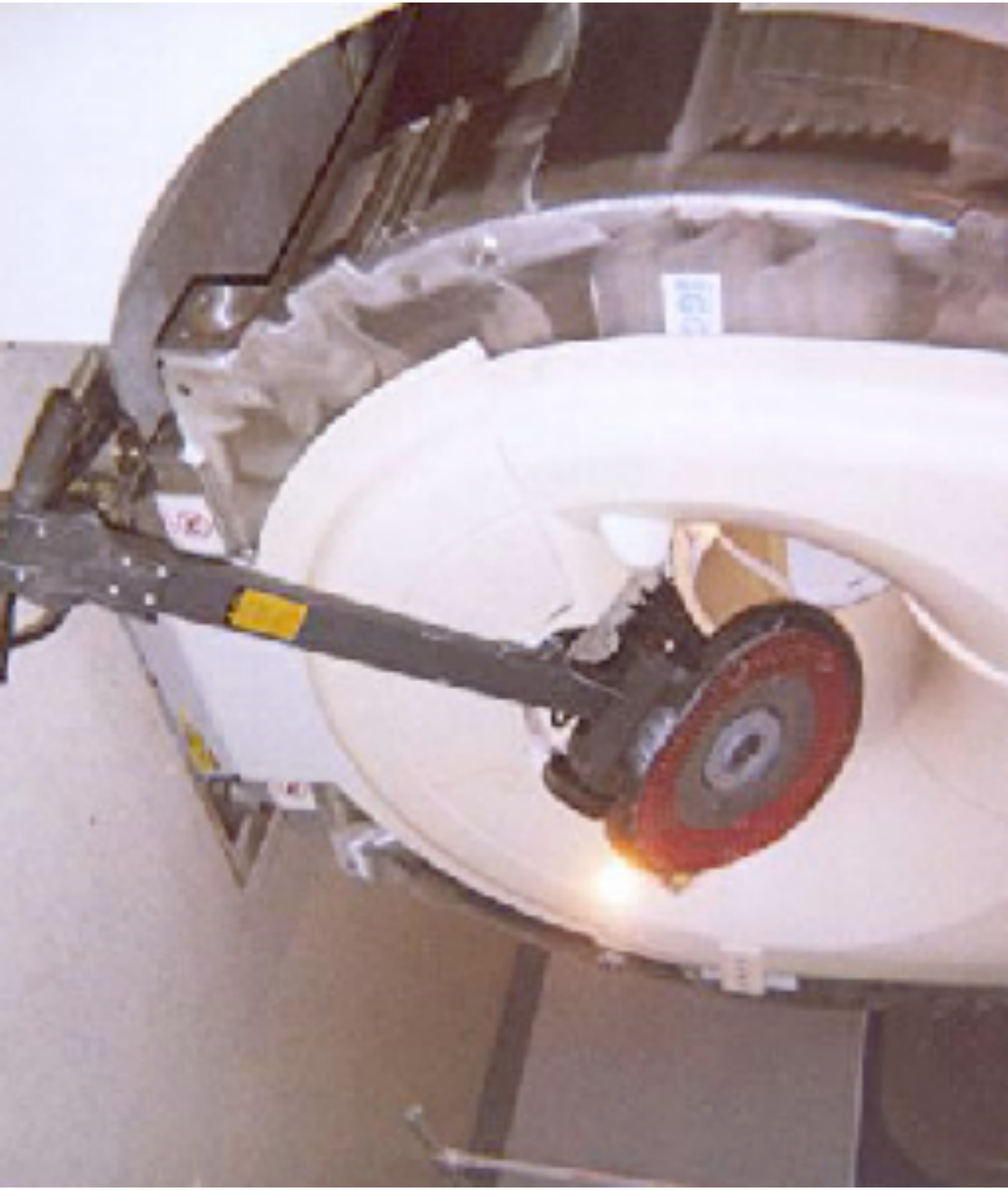


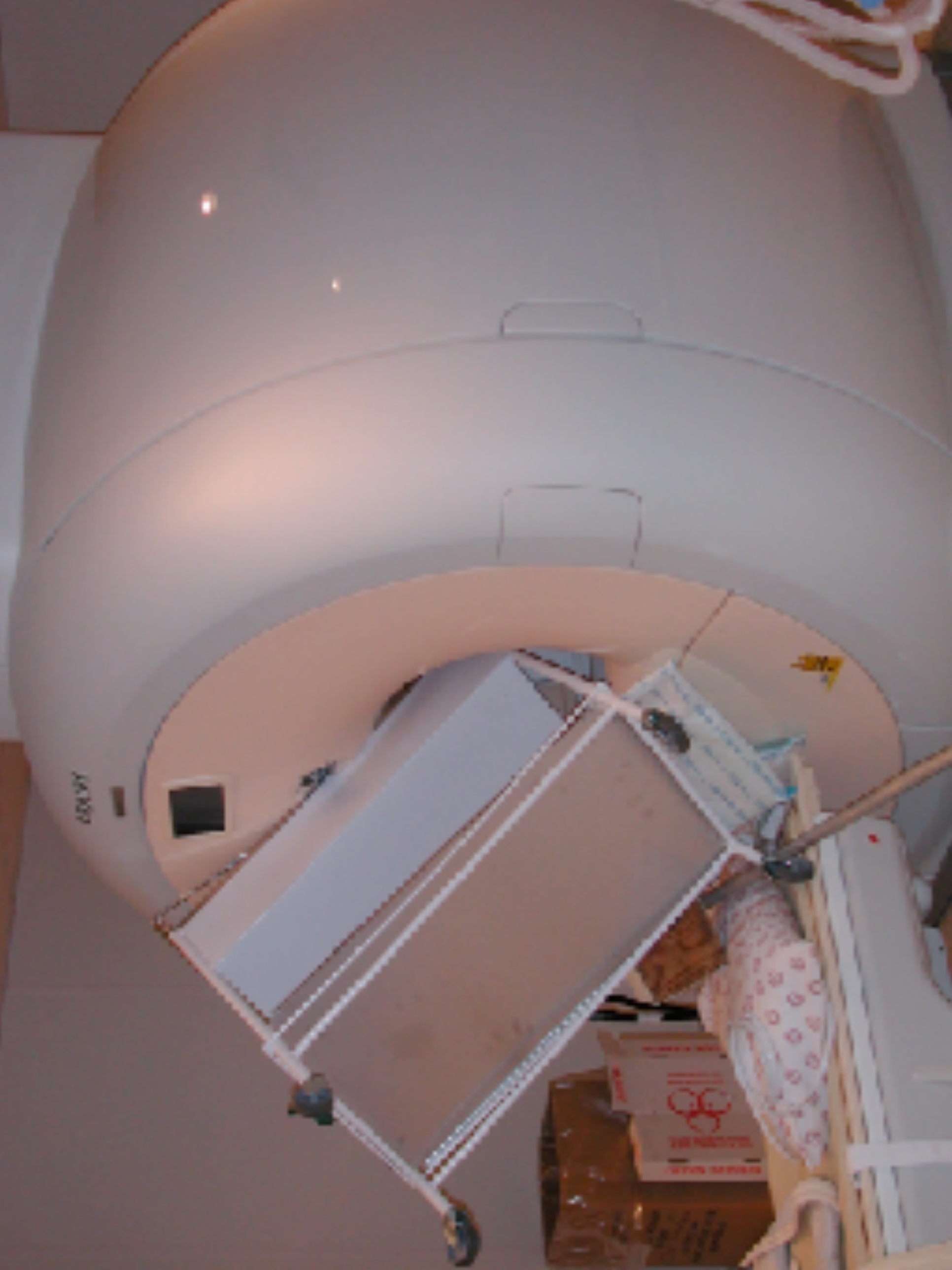
Arno Klein at the **Cor36 Hacker House** . arno@binarybottle.com . Sage Bionetworks

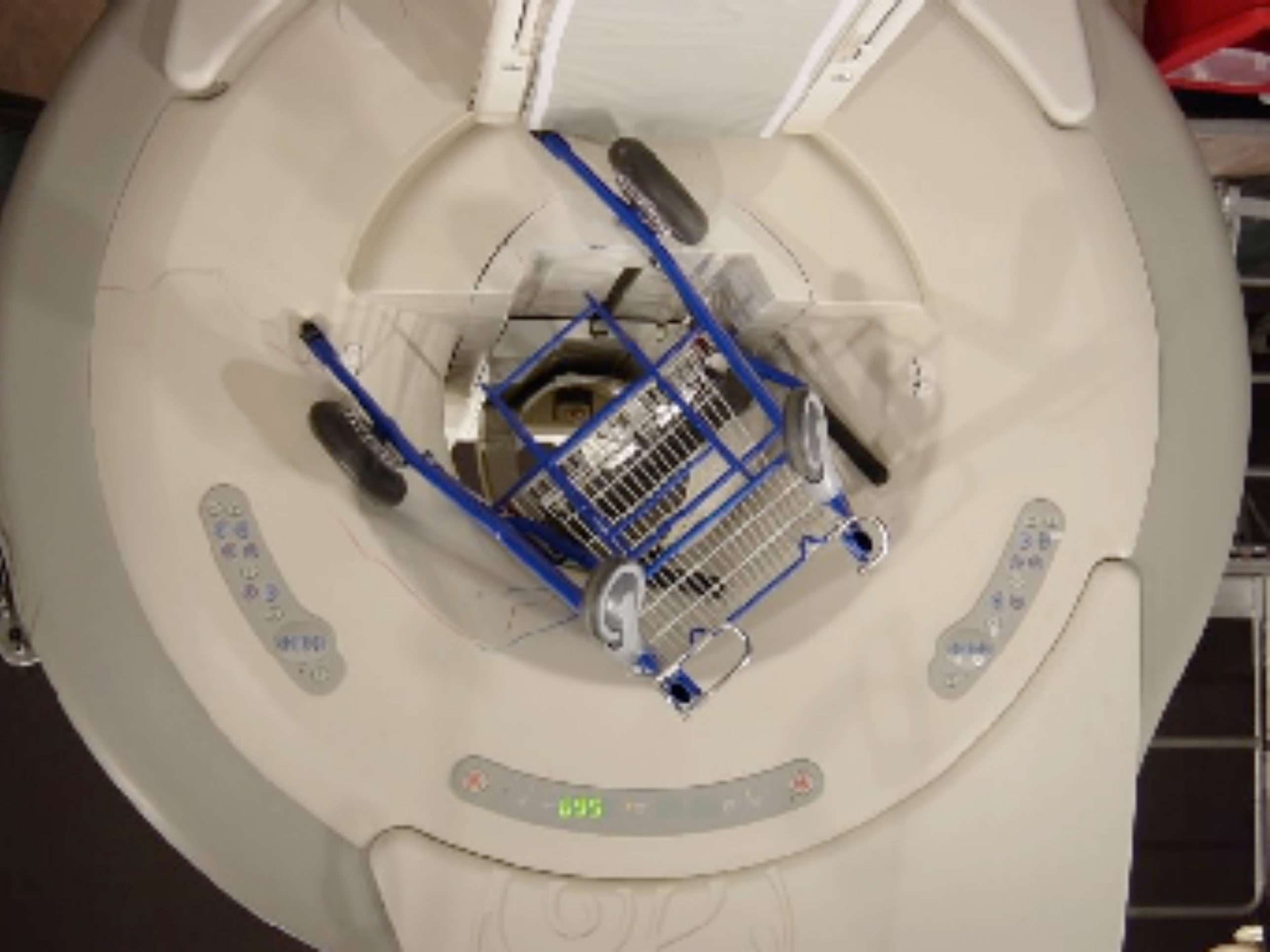




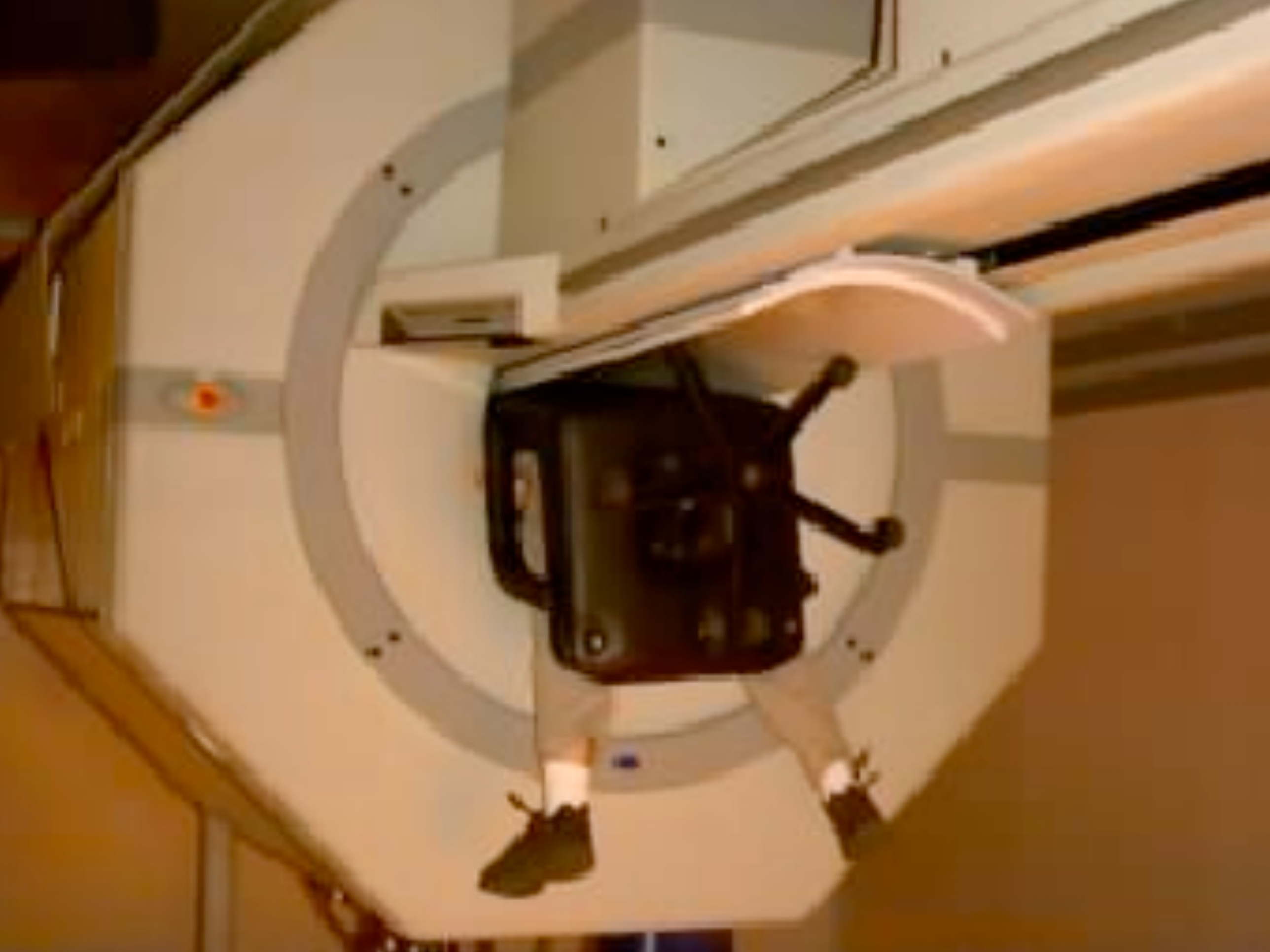


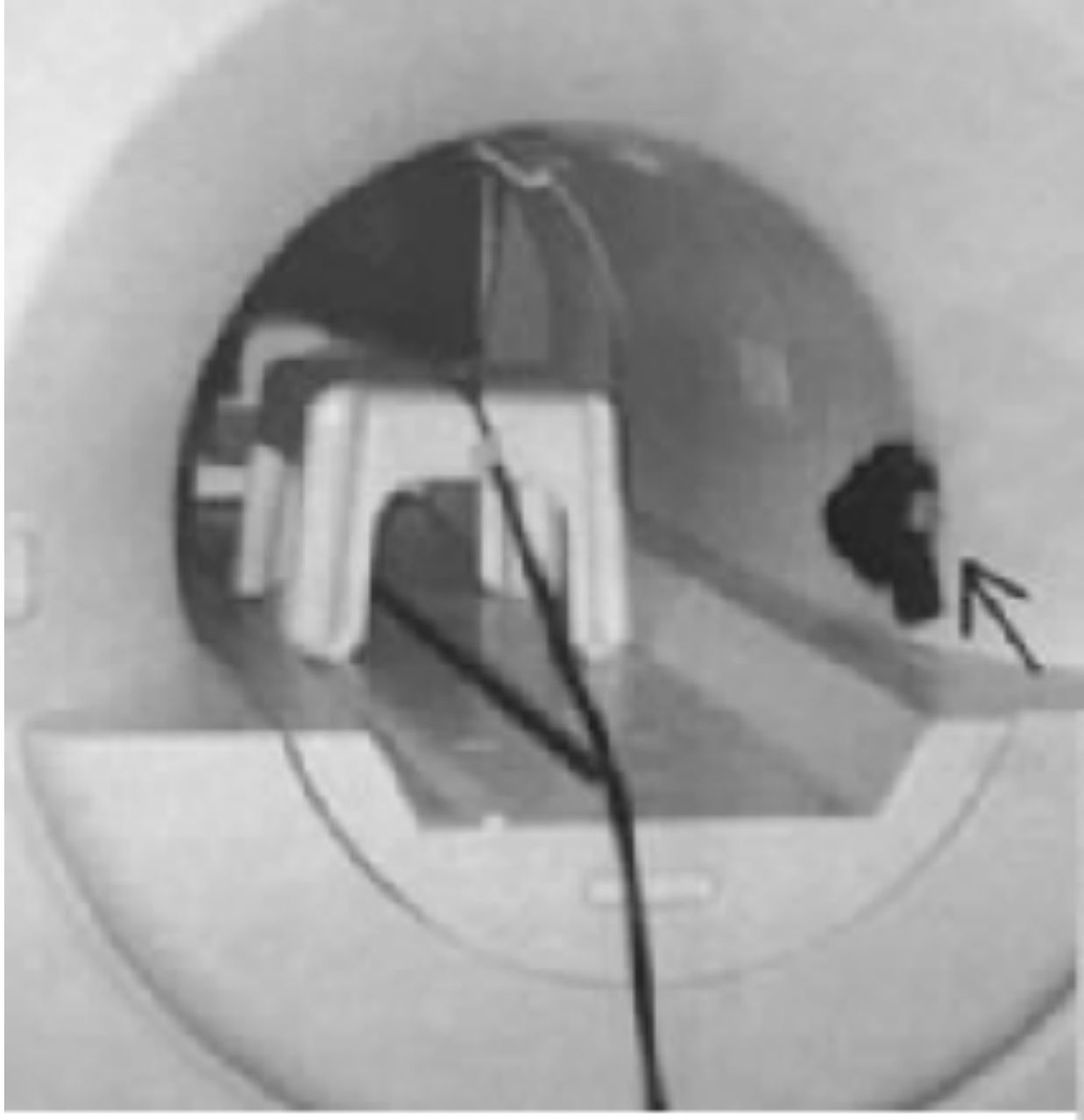


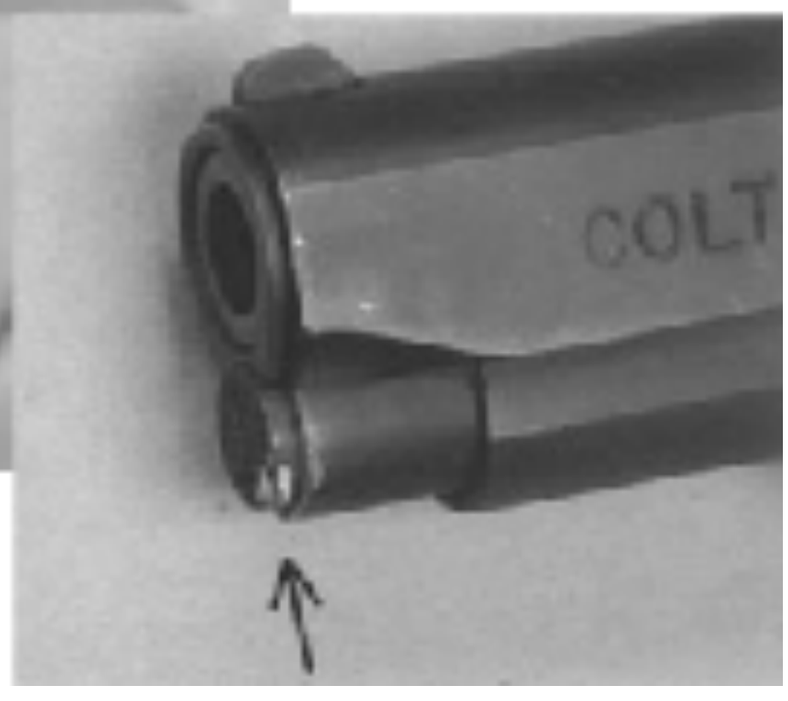




Symphony







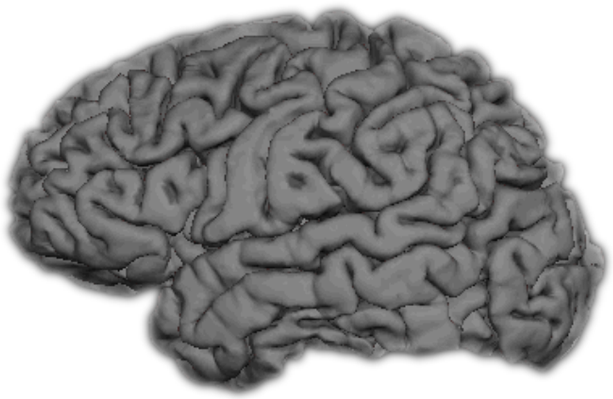
American Journal of Roentgenology

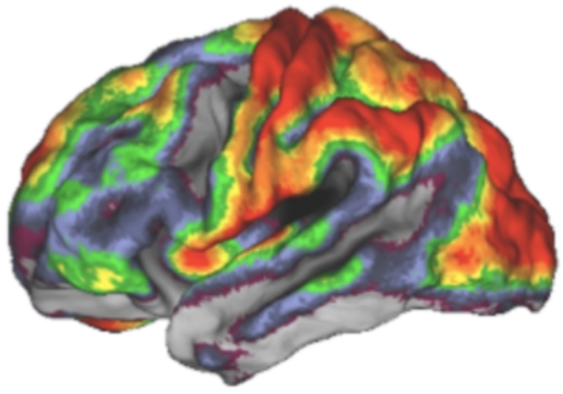
Spontaneous Discharge of a Firearm in an MR Imaging Environment

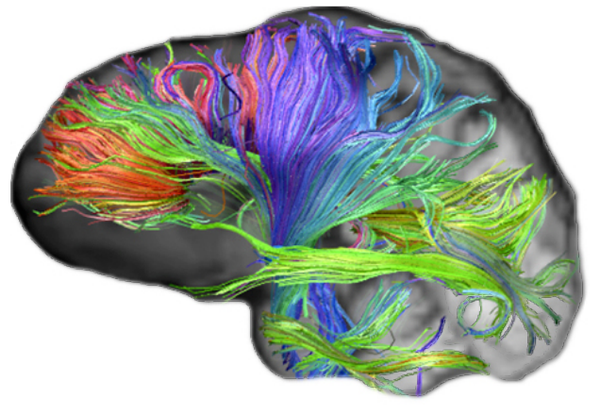
Anton Oscar Beitia[1], Steven P. Meyers[1], Emanuel Kanal[2] and William Bartell[3]

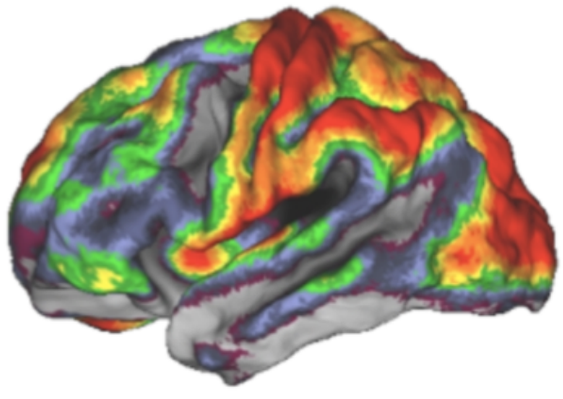
[1] Department of Radiology, University of Rochester Medical Center, 601 Elmwood Ave., Box 648, Rochester, NY 14642.
[2] Department of Radiology (D-132), University of Pittsburgh Medical Center, 200 Lothrop St., Pittsburgh, PA 15213.
[3] Rochester Police Department, Rochester, NY 14624.

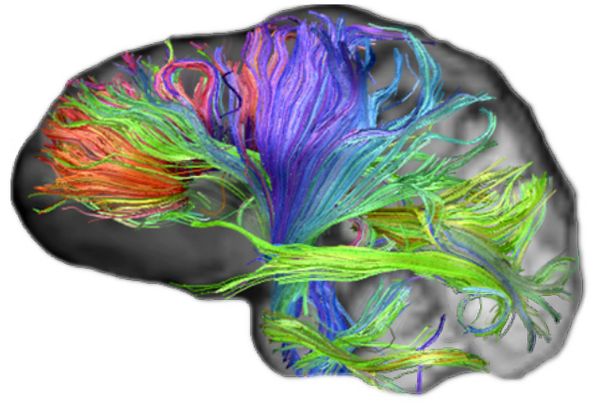
Received September 4, 2001; accepted after revision November 6, 2001.

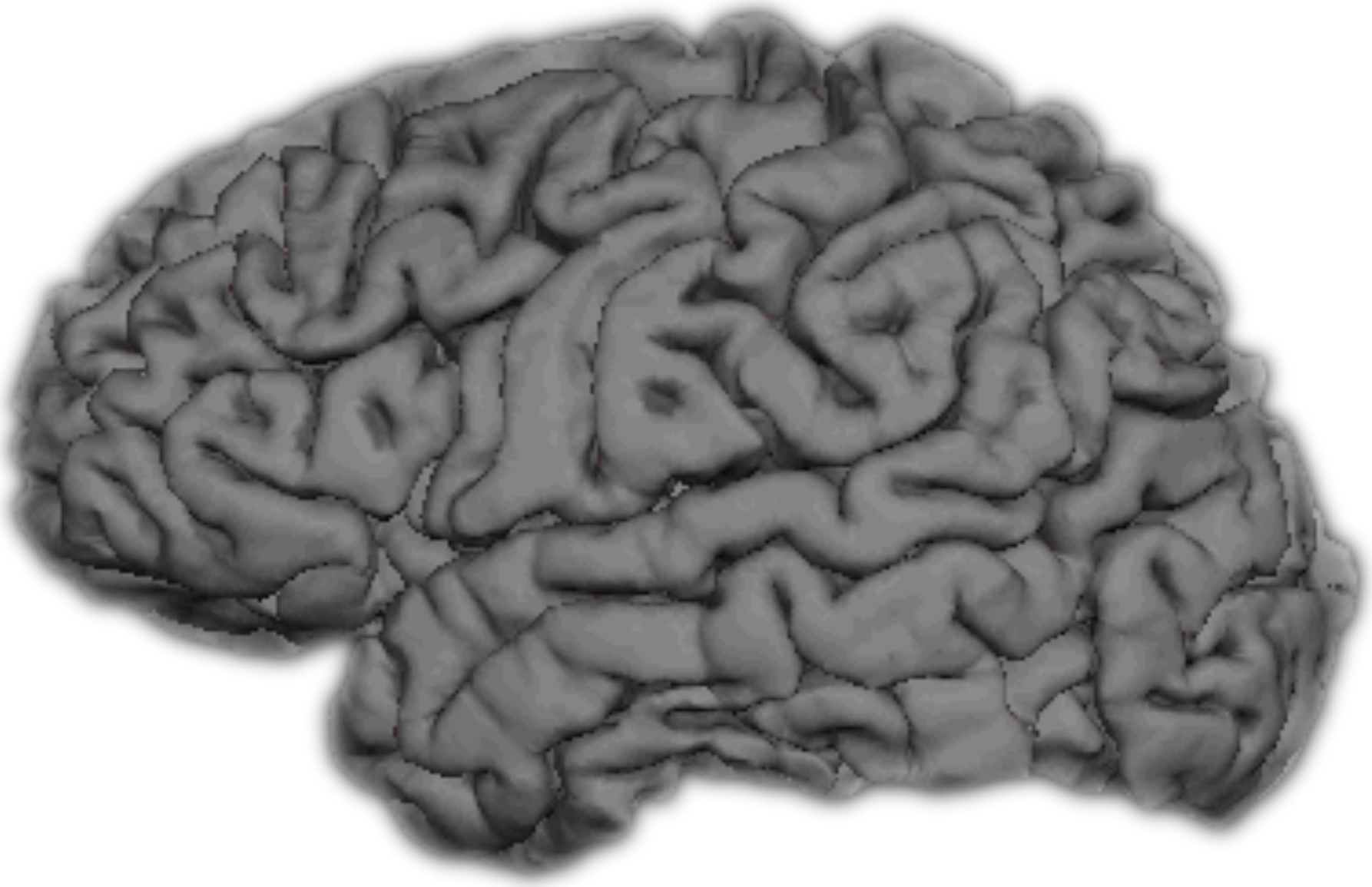




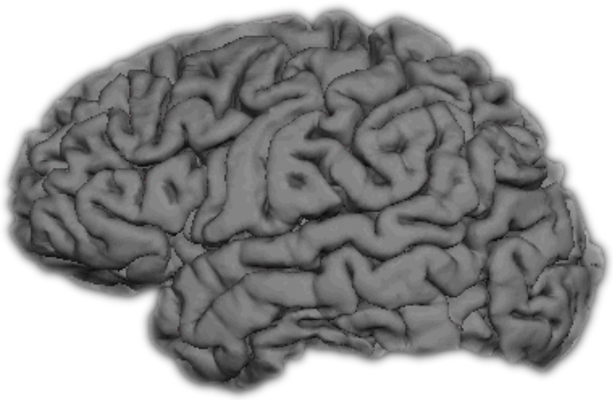


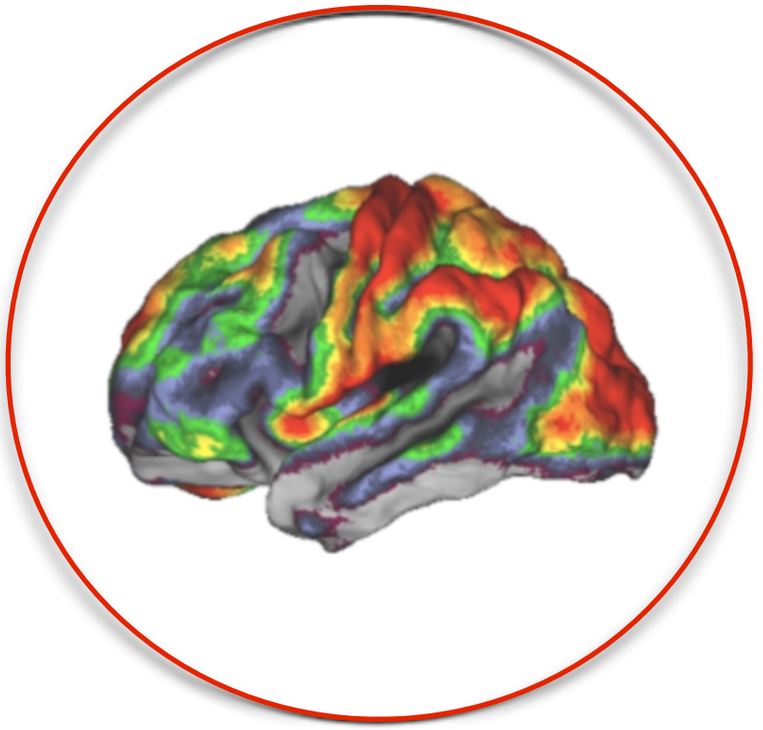


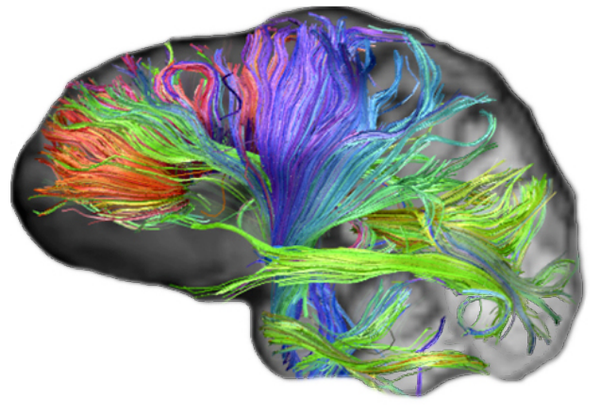


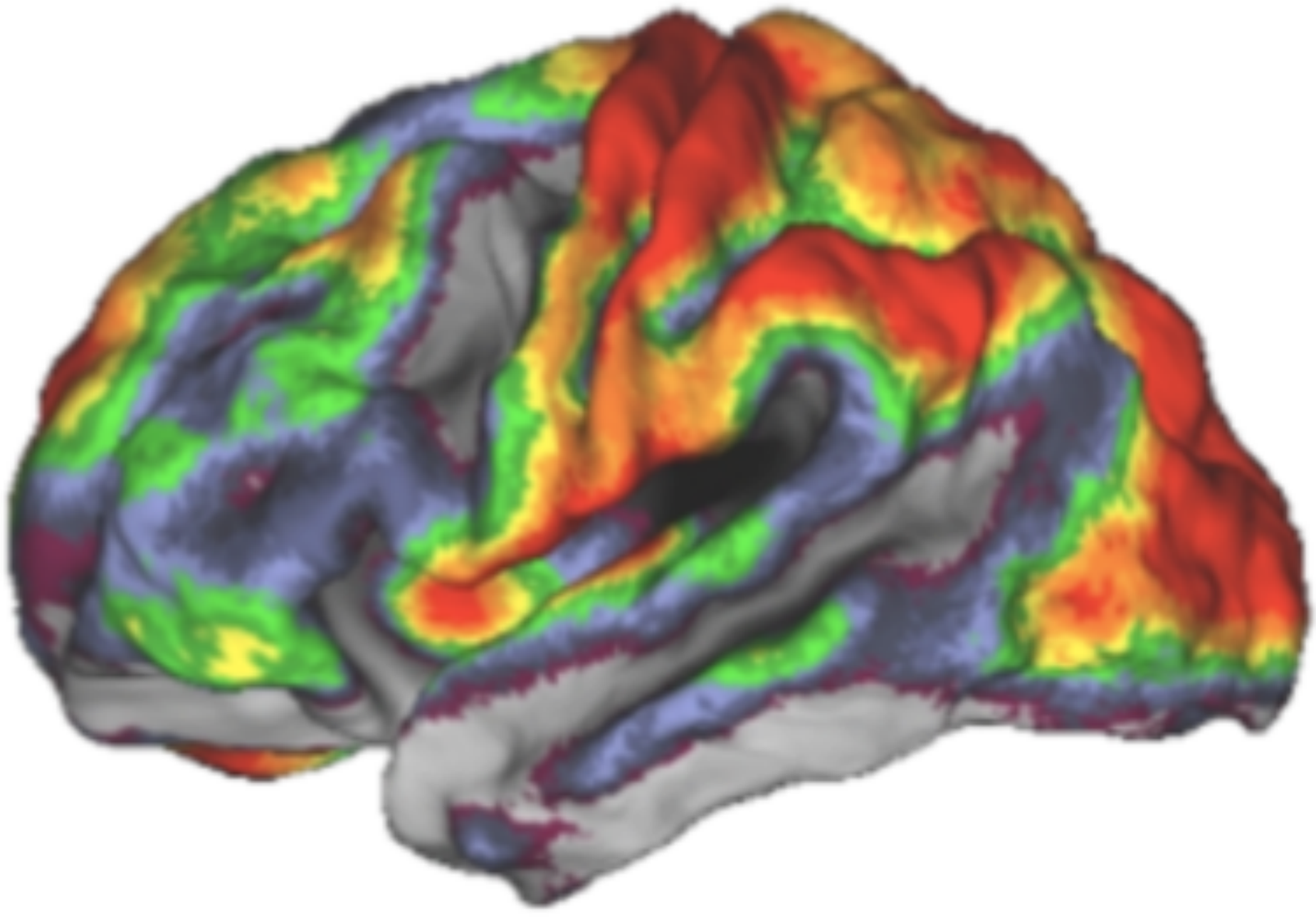


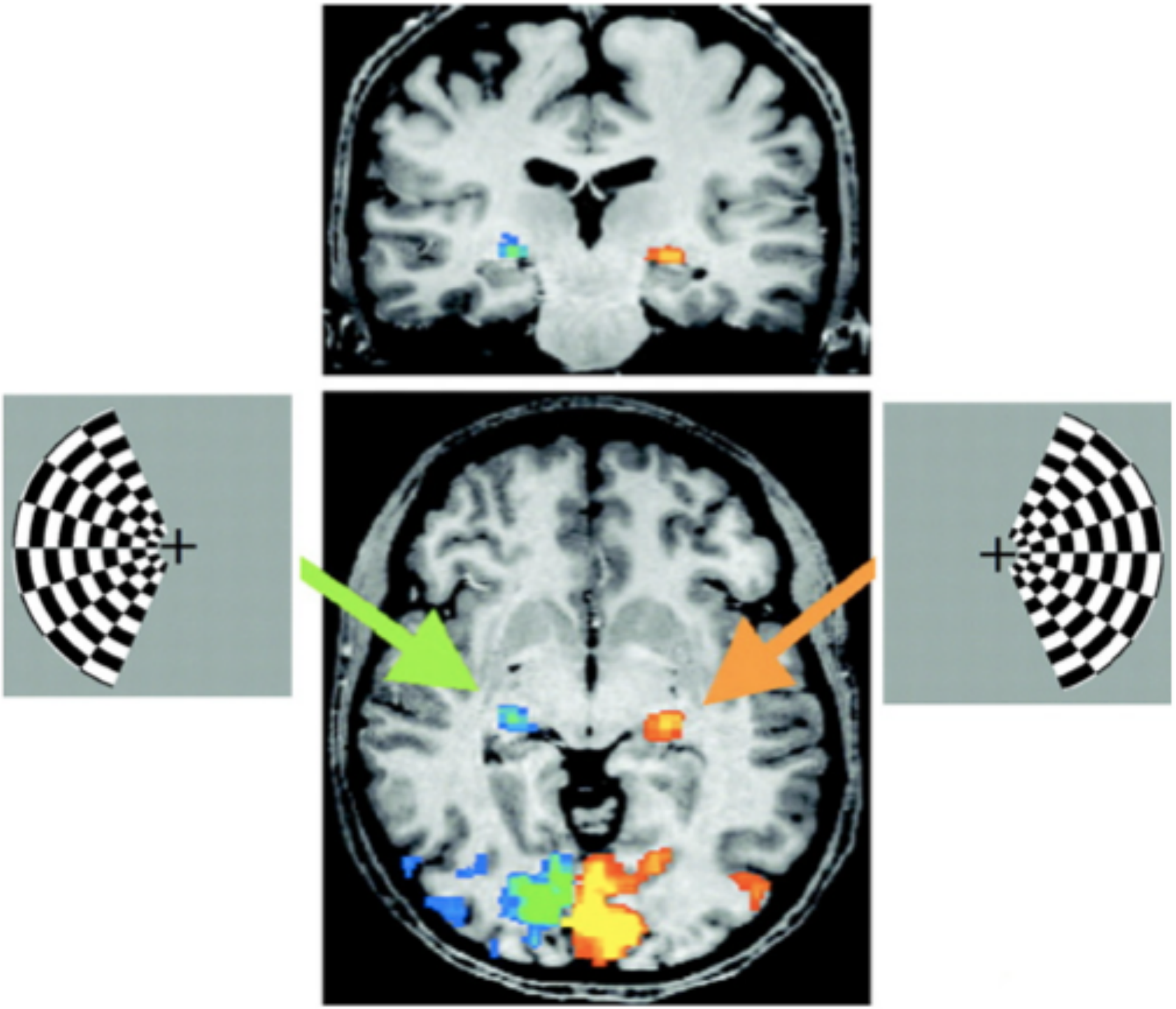
→ FSL / FS / XTK / BB









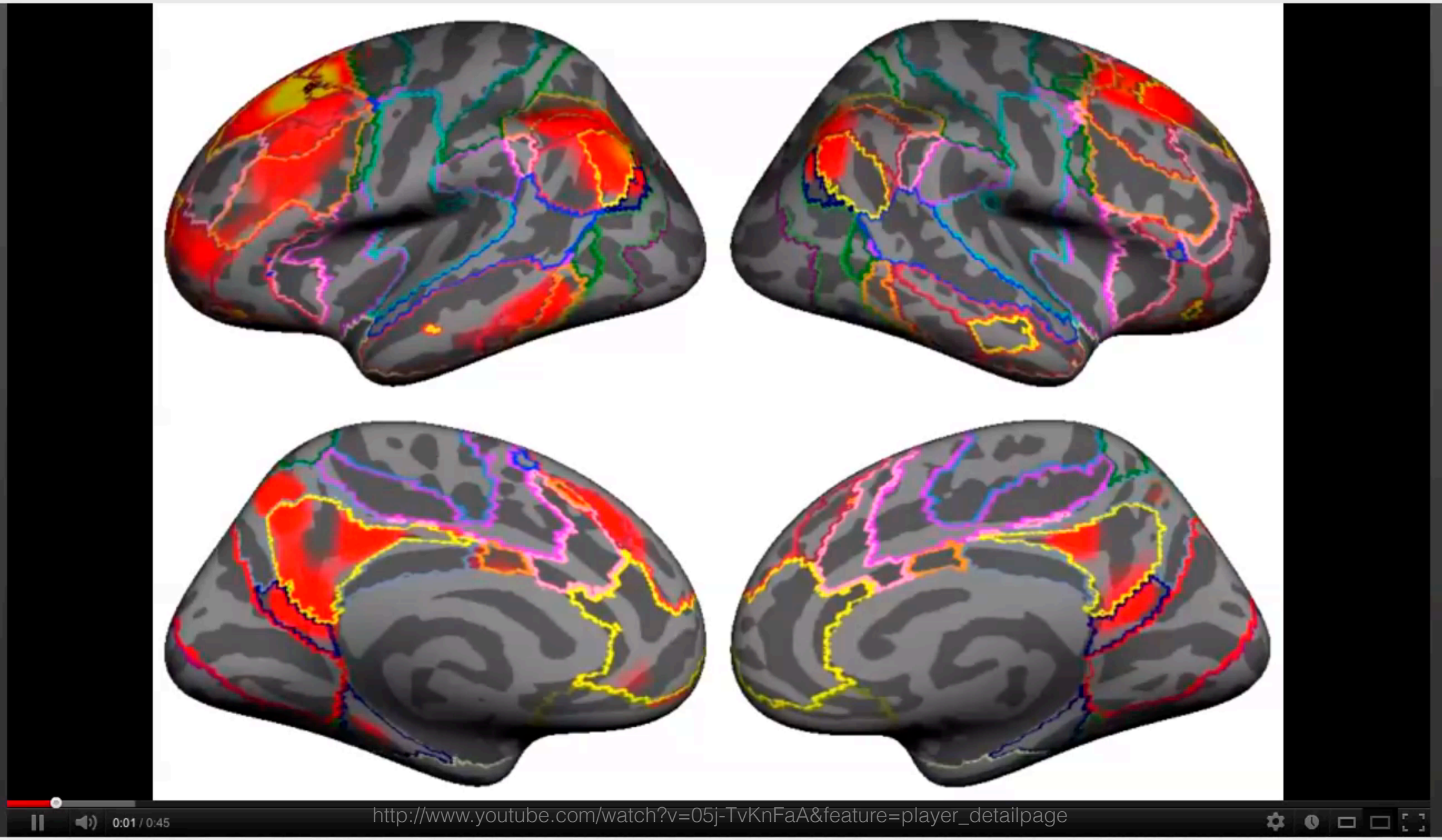


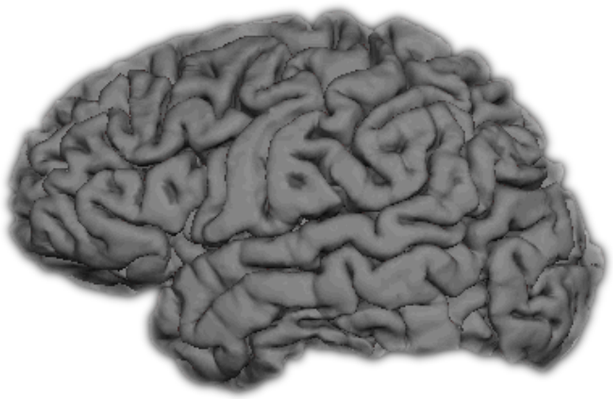
Kastner, et al., 2004

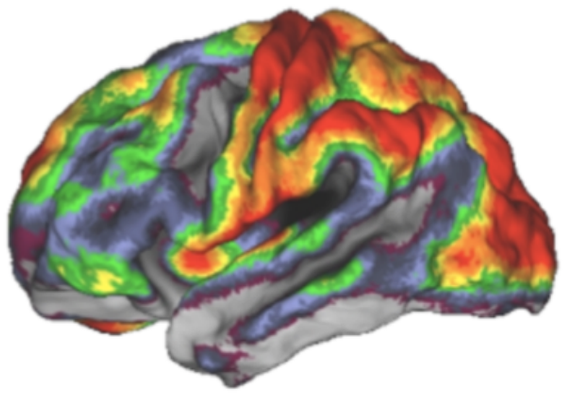
This account is managed by binarybottle.com Learn more

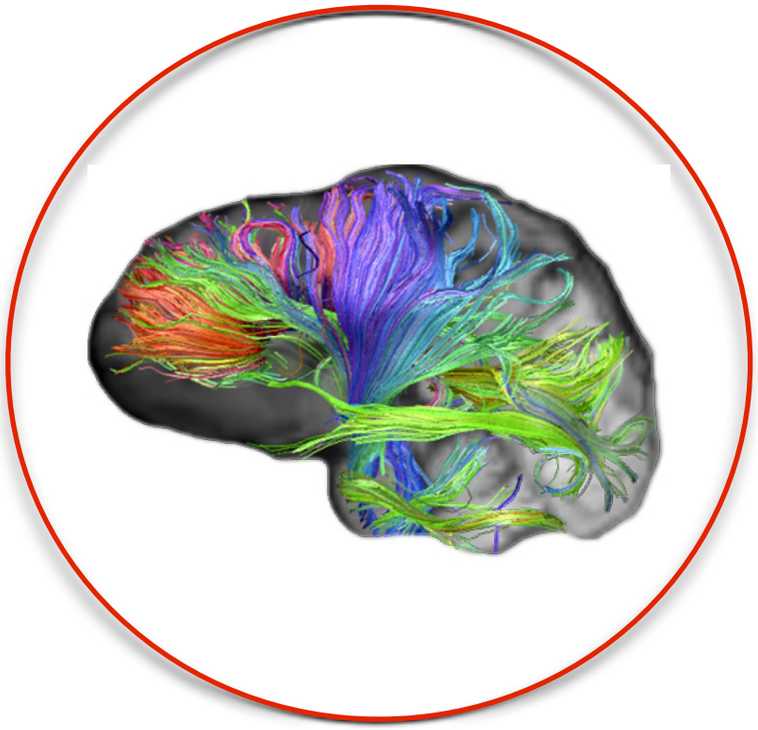
Yeo_etal_JNeurophysiol_2011_Prefrontal.avi

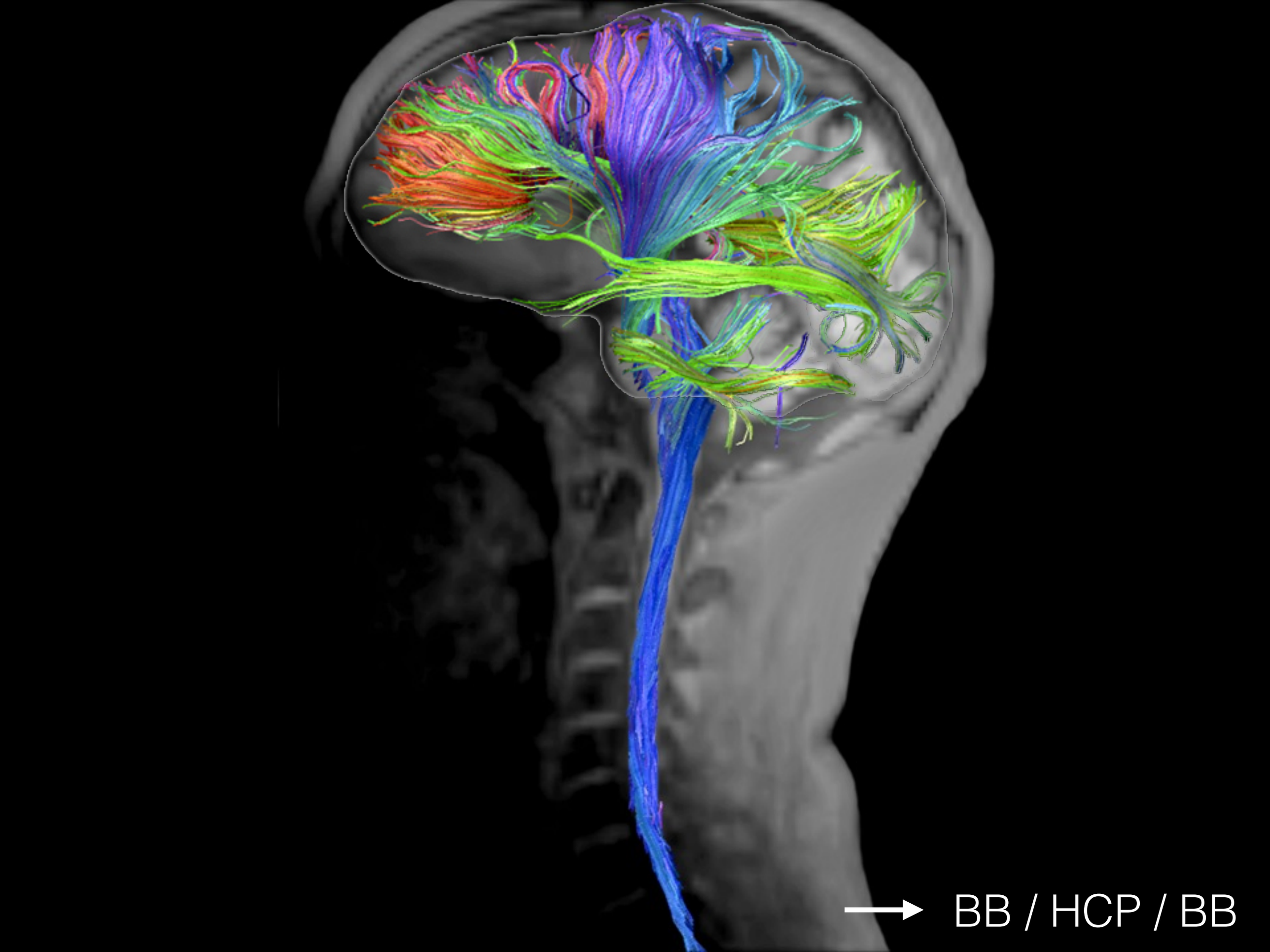
YeoKrienen | Subscribe | 9 videos

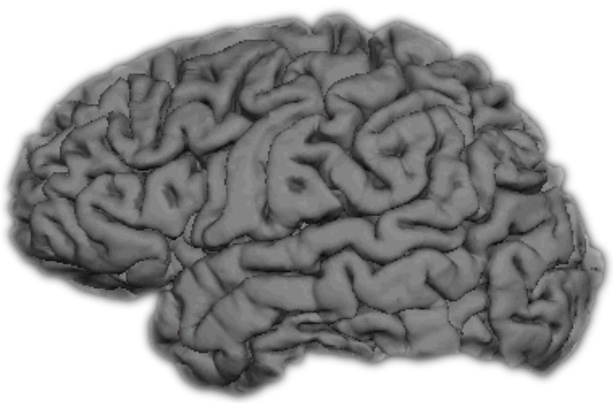


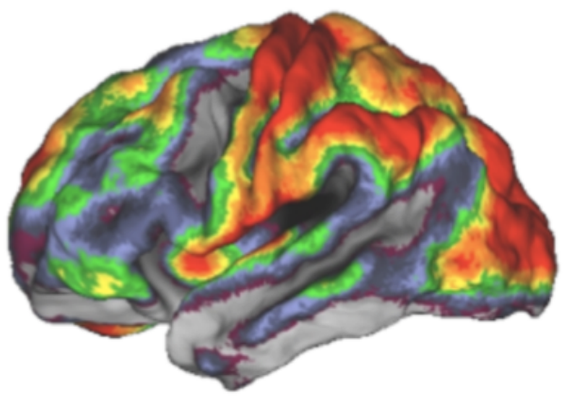


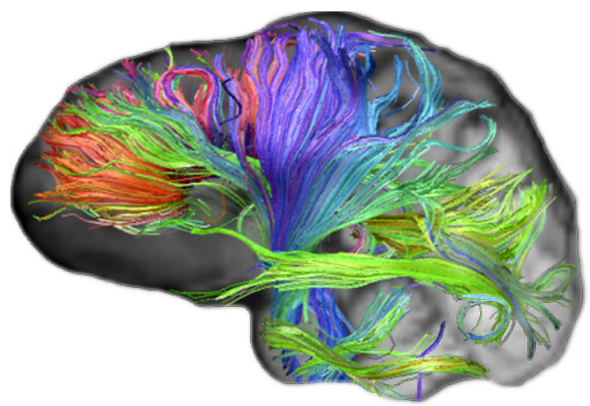





BB / HCP / BB







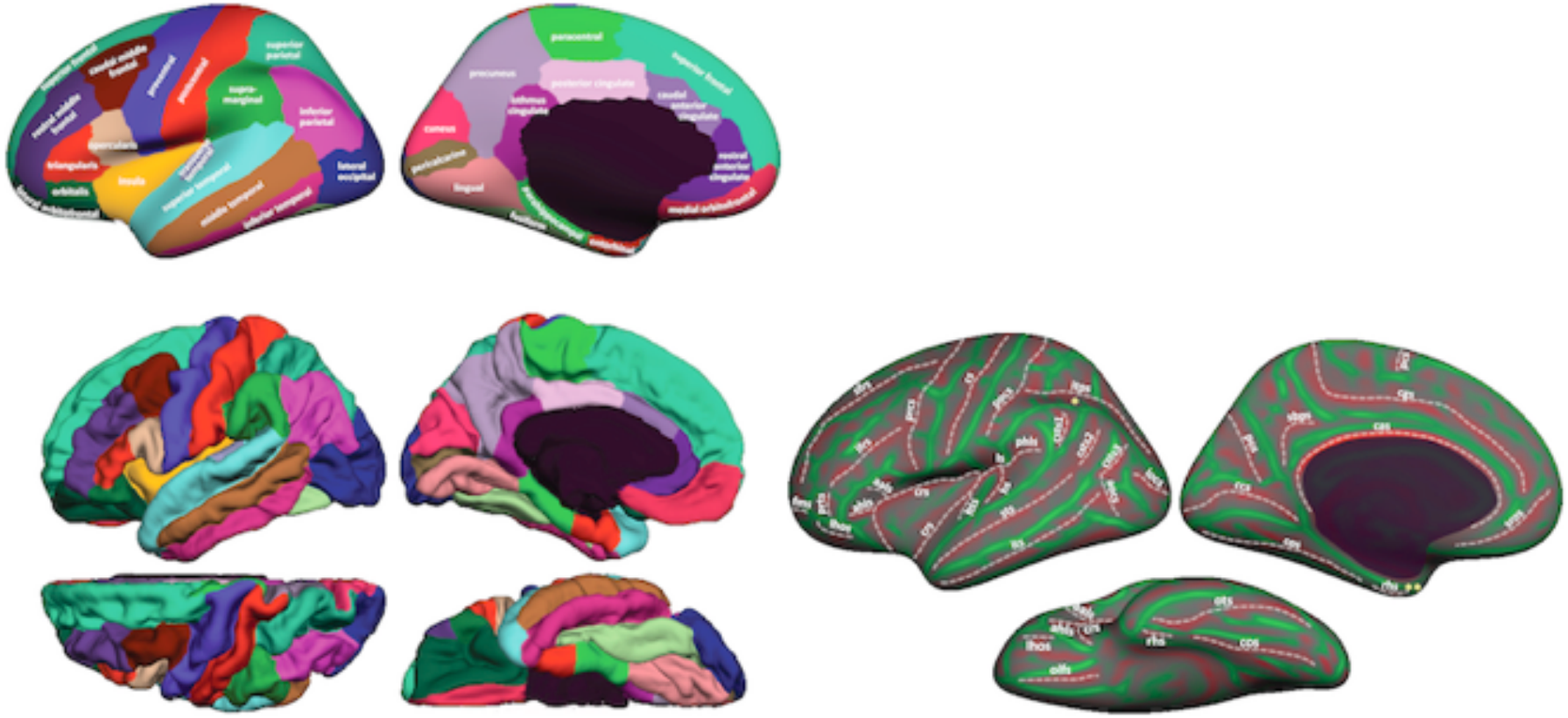
Mindboggle

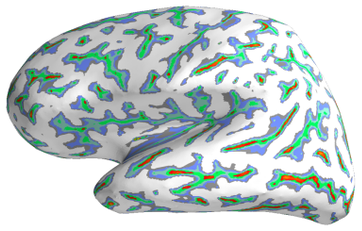
Software Data Papers People

Data

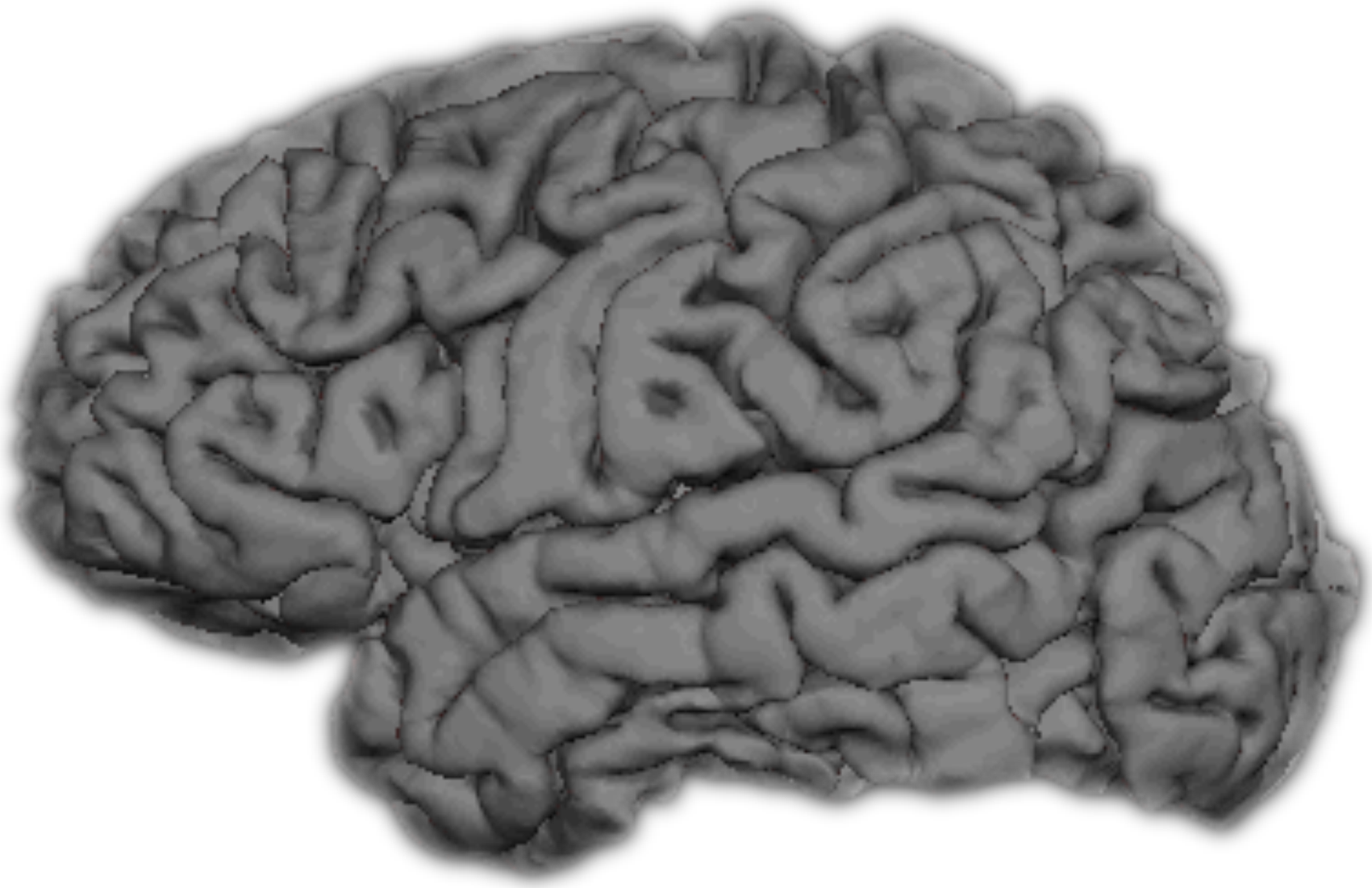
Welcome to the largest collection of publicly available, manually labeled human brain image data in the world!
Please cite the following article and this website when making use of Mindboggle-101 data:
101 labeled brain images and a consistent human cortical labeling protocol
Arno Klein, Jason Tourville. Frontiers in Brain Imaging Methods. 6:171. DOI: 10.3389/fnins.2012.00171

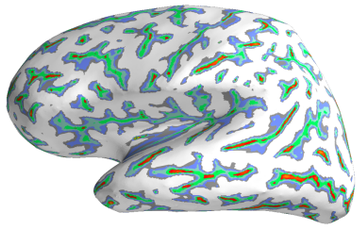
See the README, labeling protocol, the CHANGELOG, and MD5SUMS,
which describe the labeled nifti volumes (nii), vtk surfaces (vtk), and FreeSurfer files (mgh, etc.).
Except where noted, all data are licensed under a Creative Commons License: (cc) BY-NC-SA



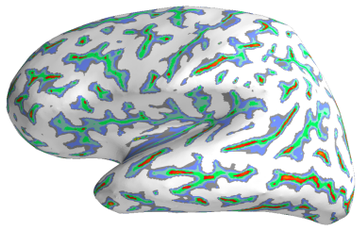


Cortical surface

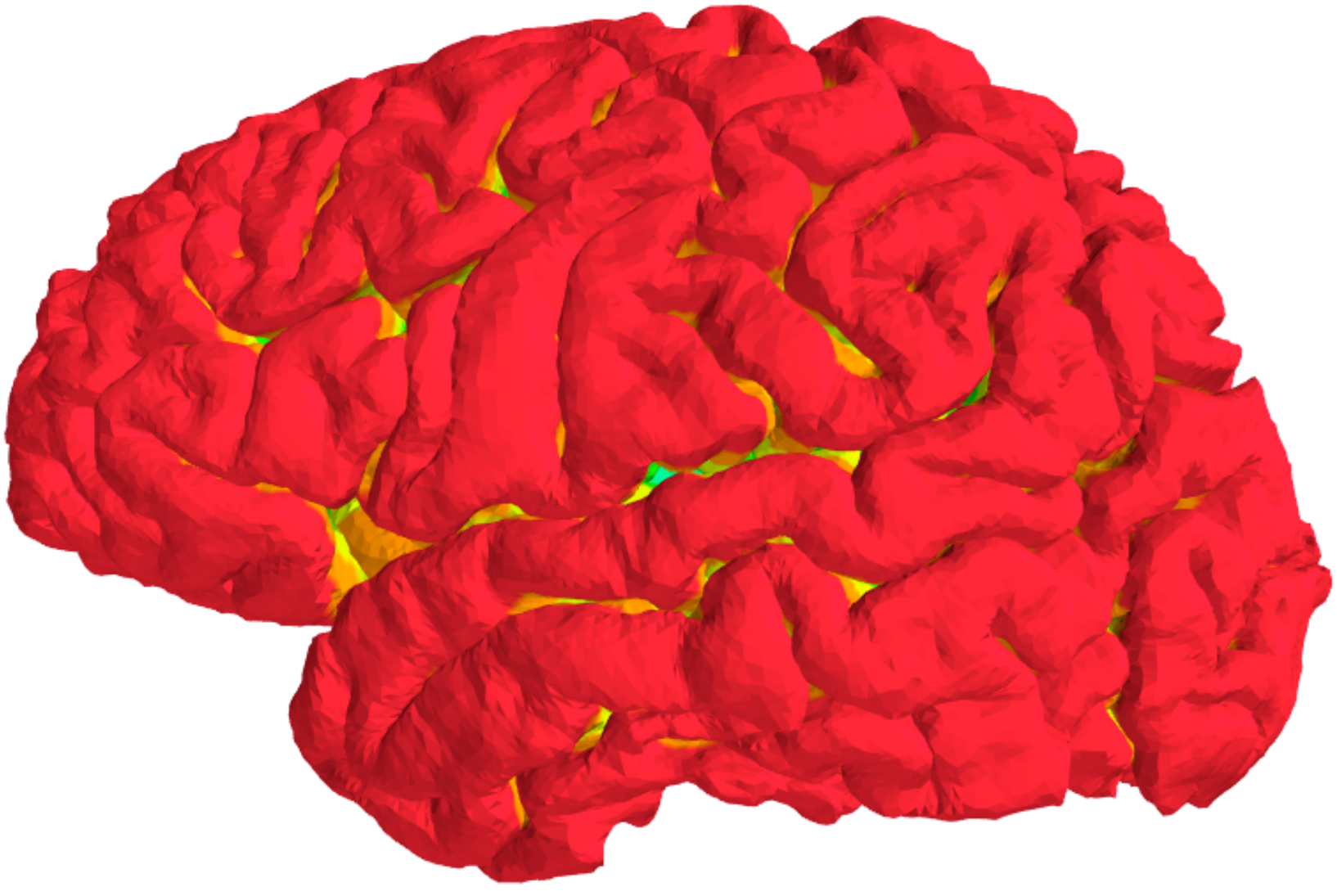


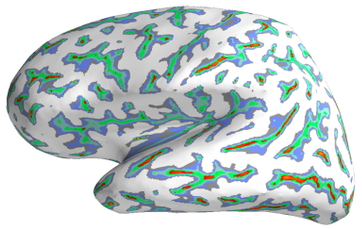


Mean curvature

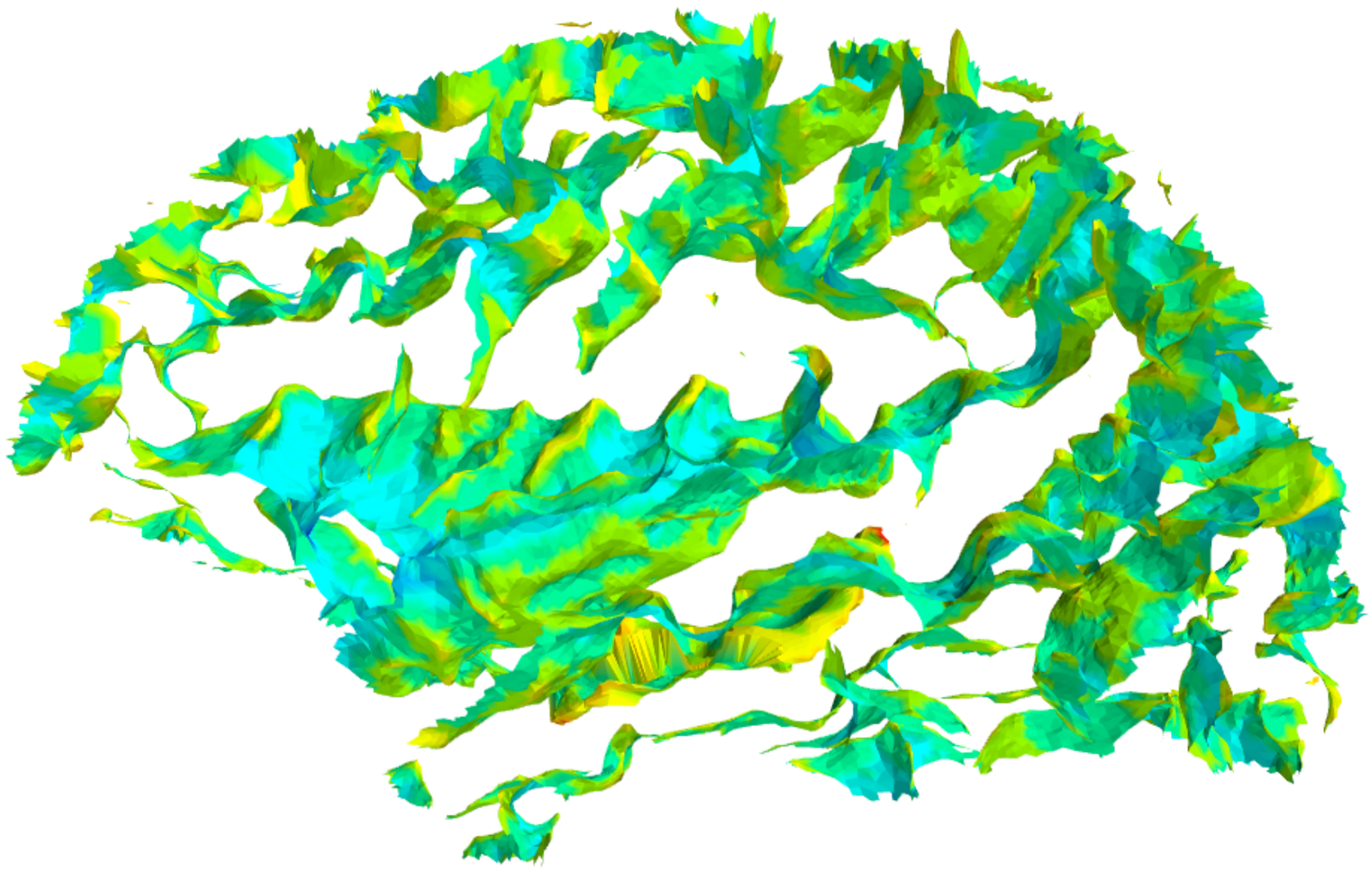


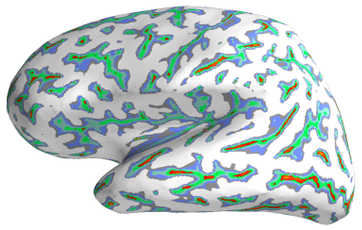
Travel depth



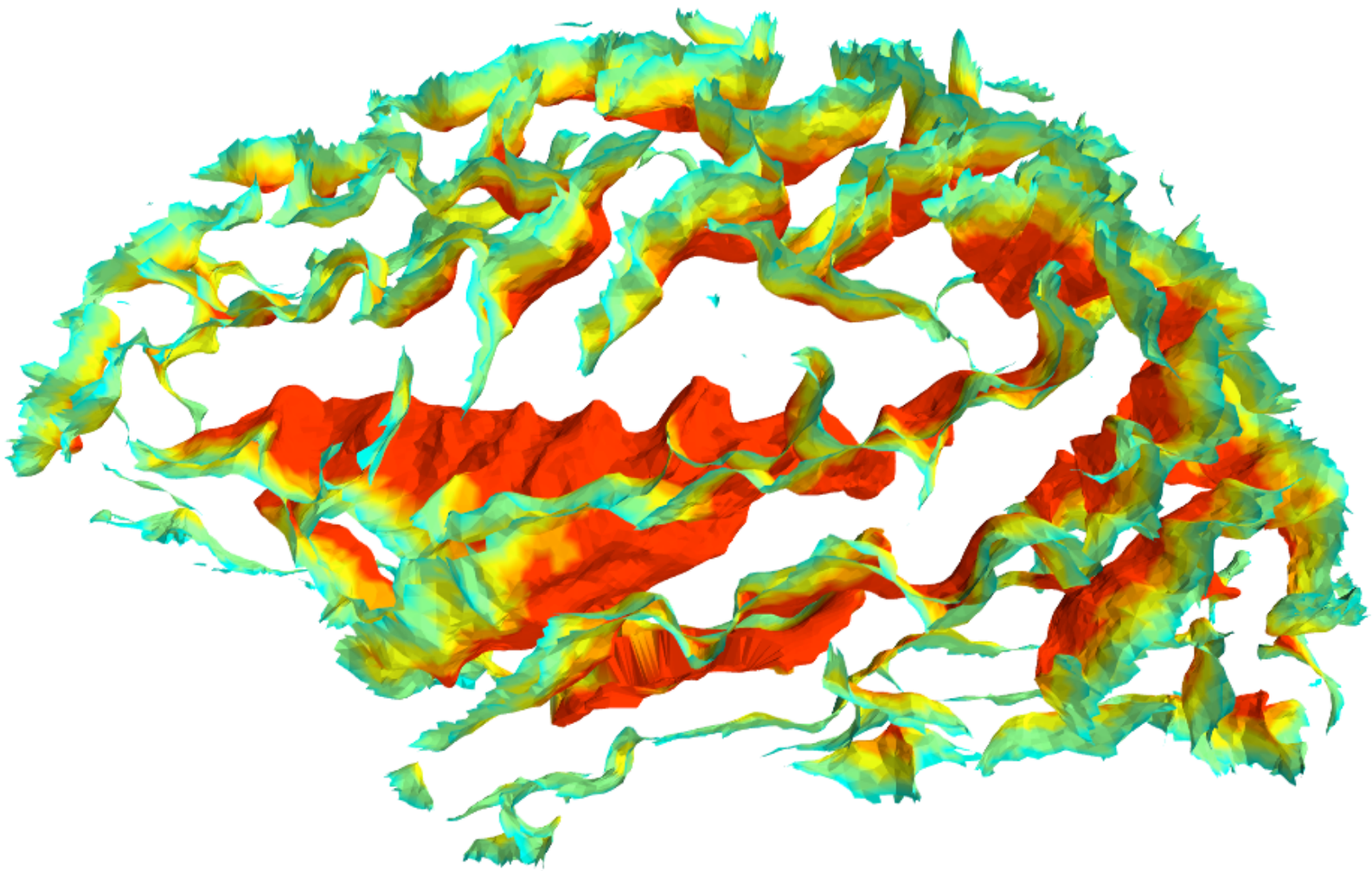


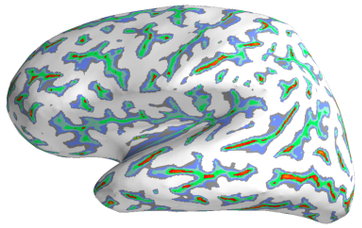
Mean curvature (folds)



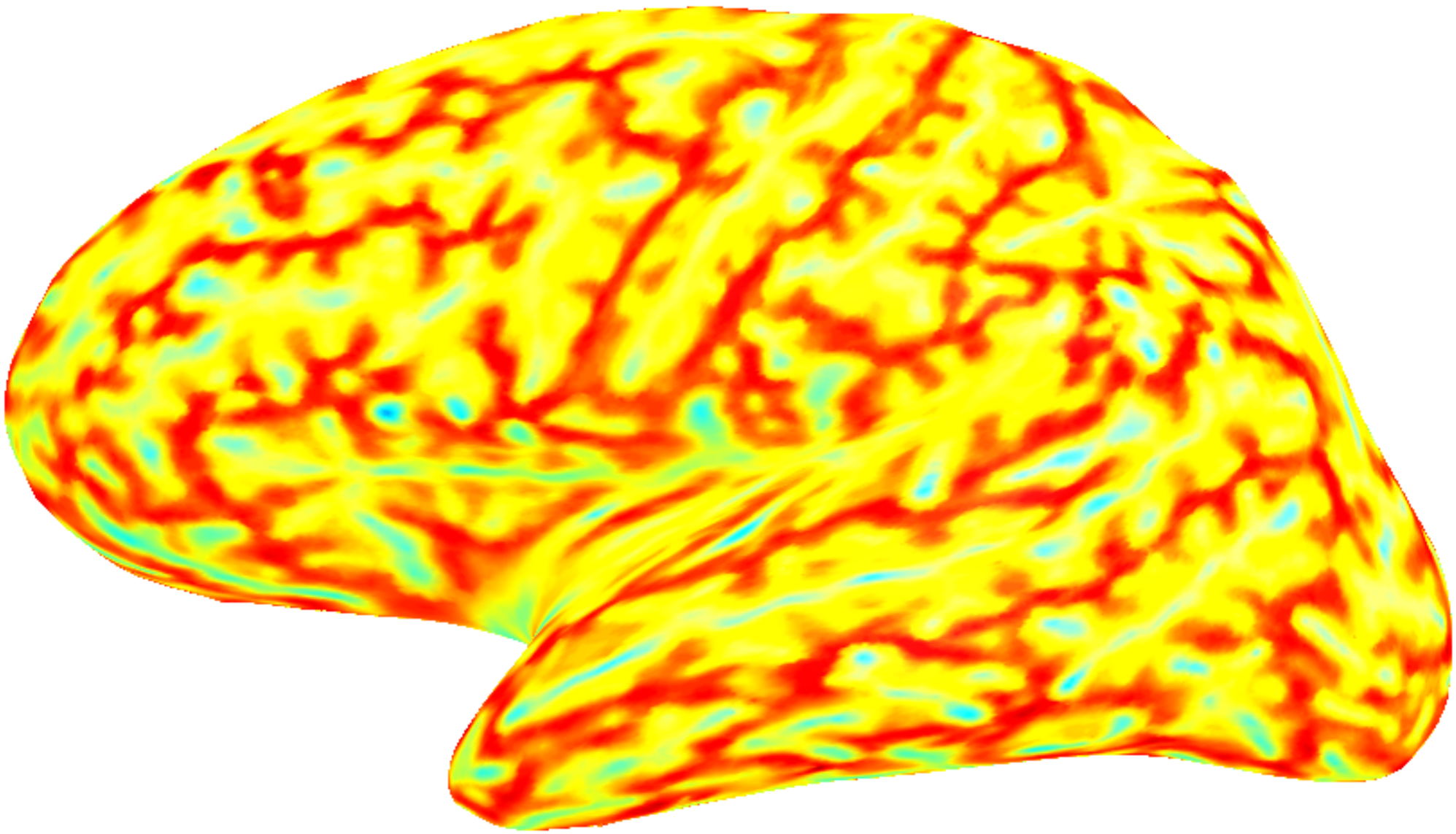


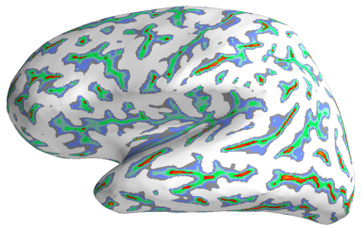
Travel depth (folds)



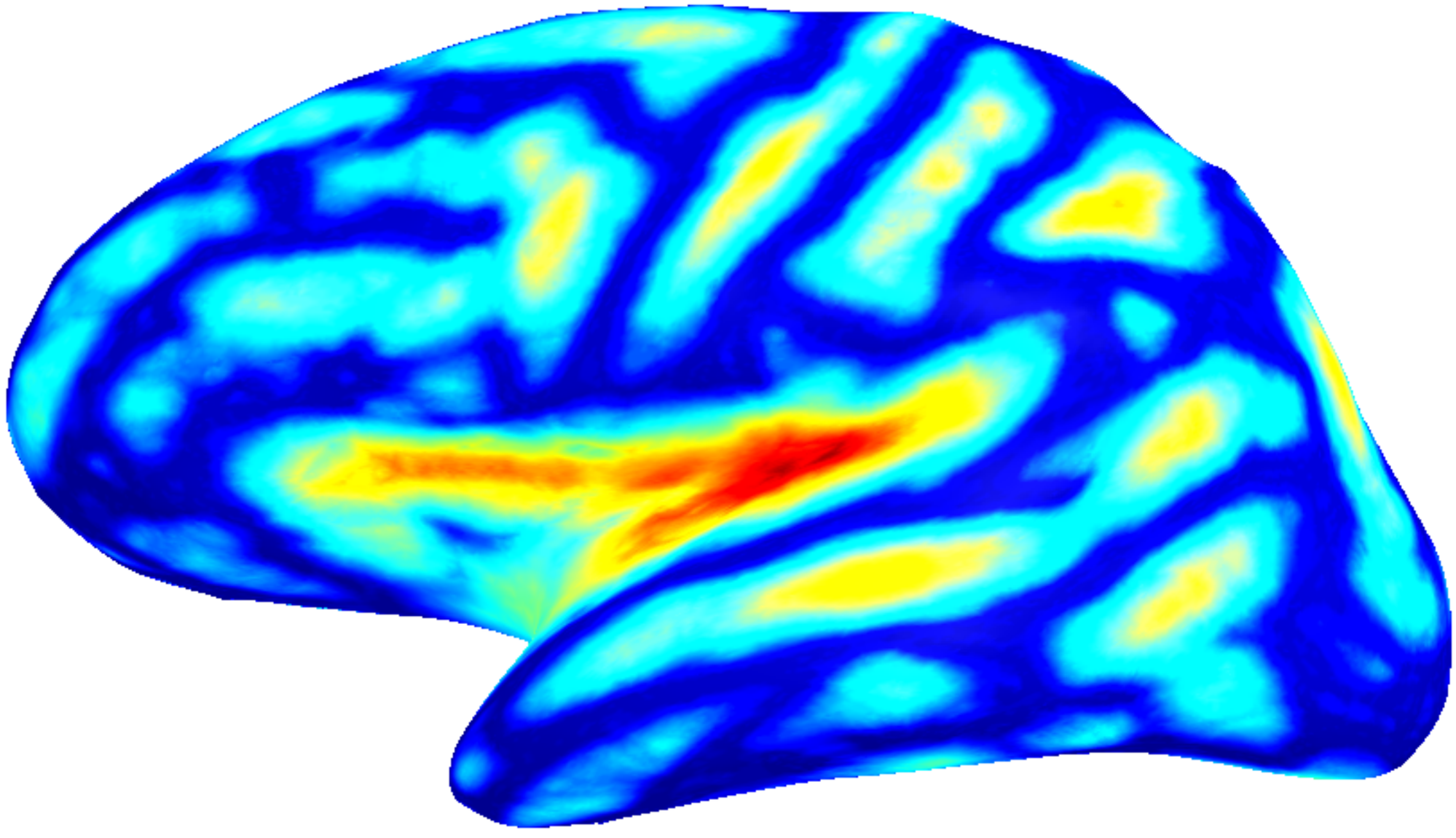


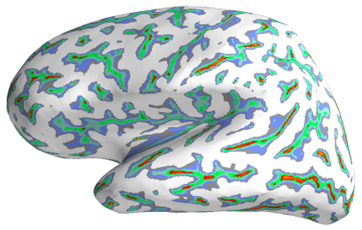
Mean curvature (inflated surface)



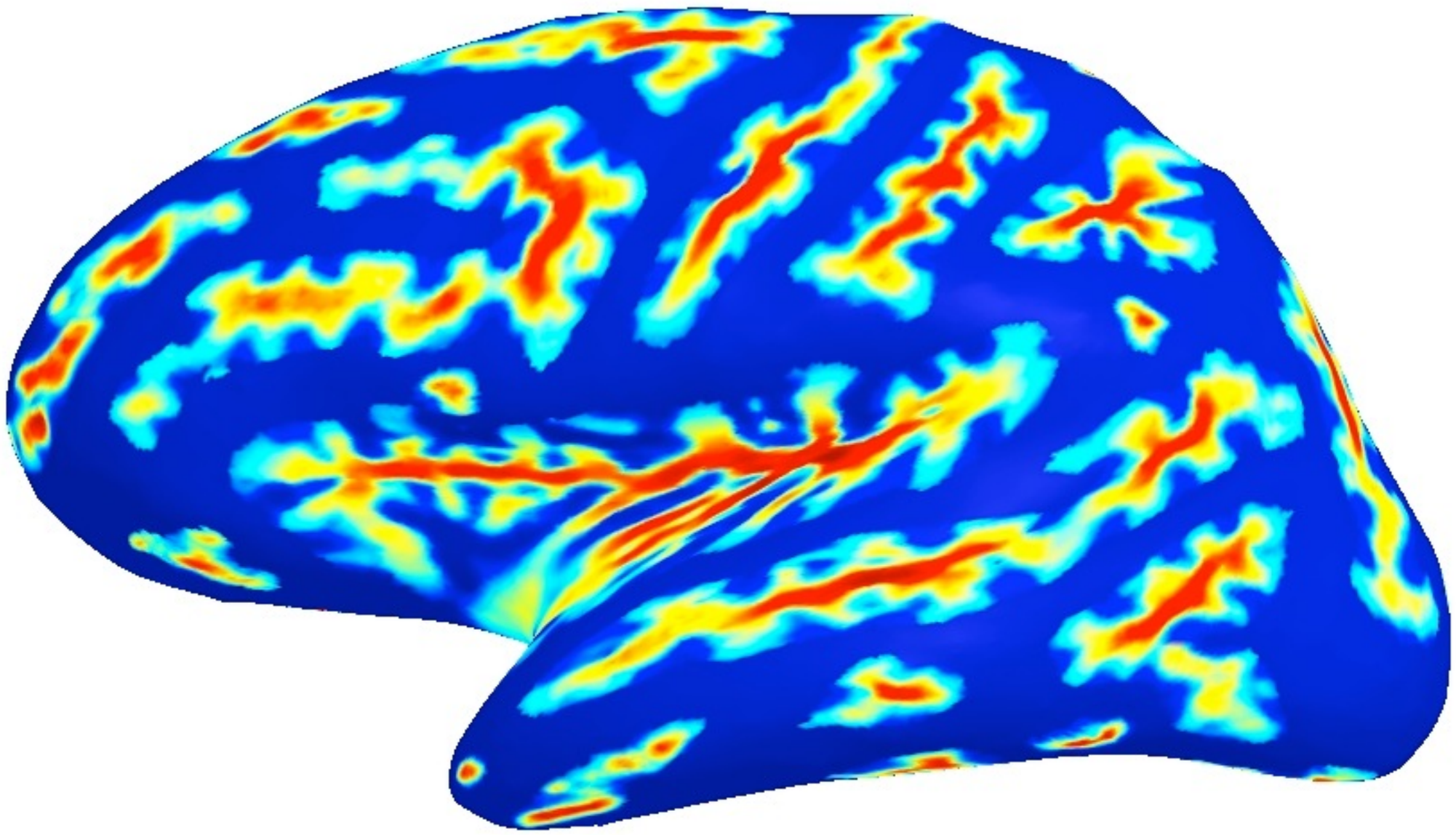


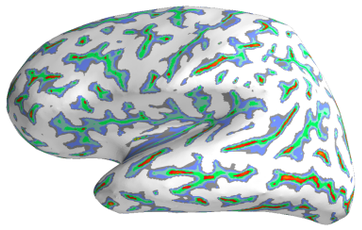
Travel depth (inflated surface)



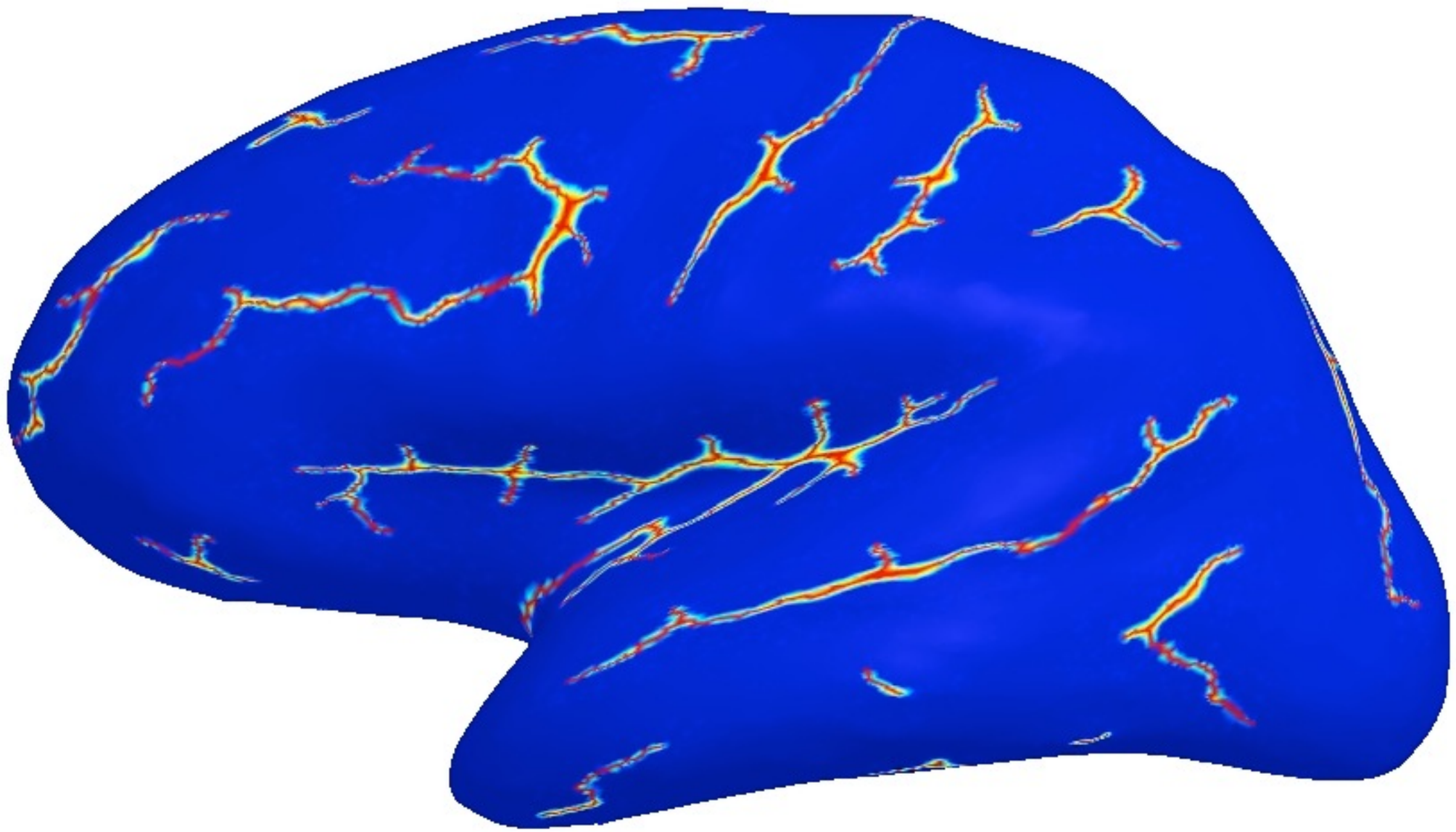


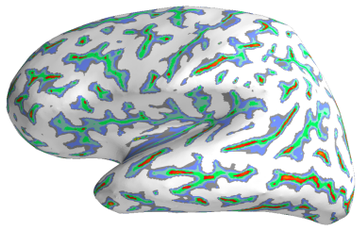
Fundus curves



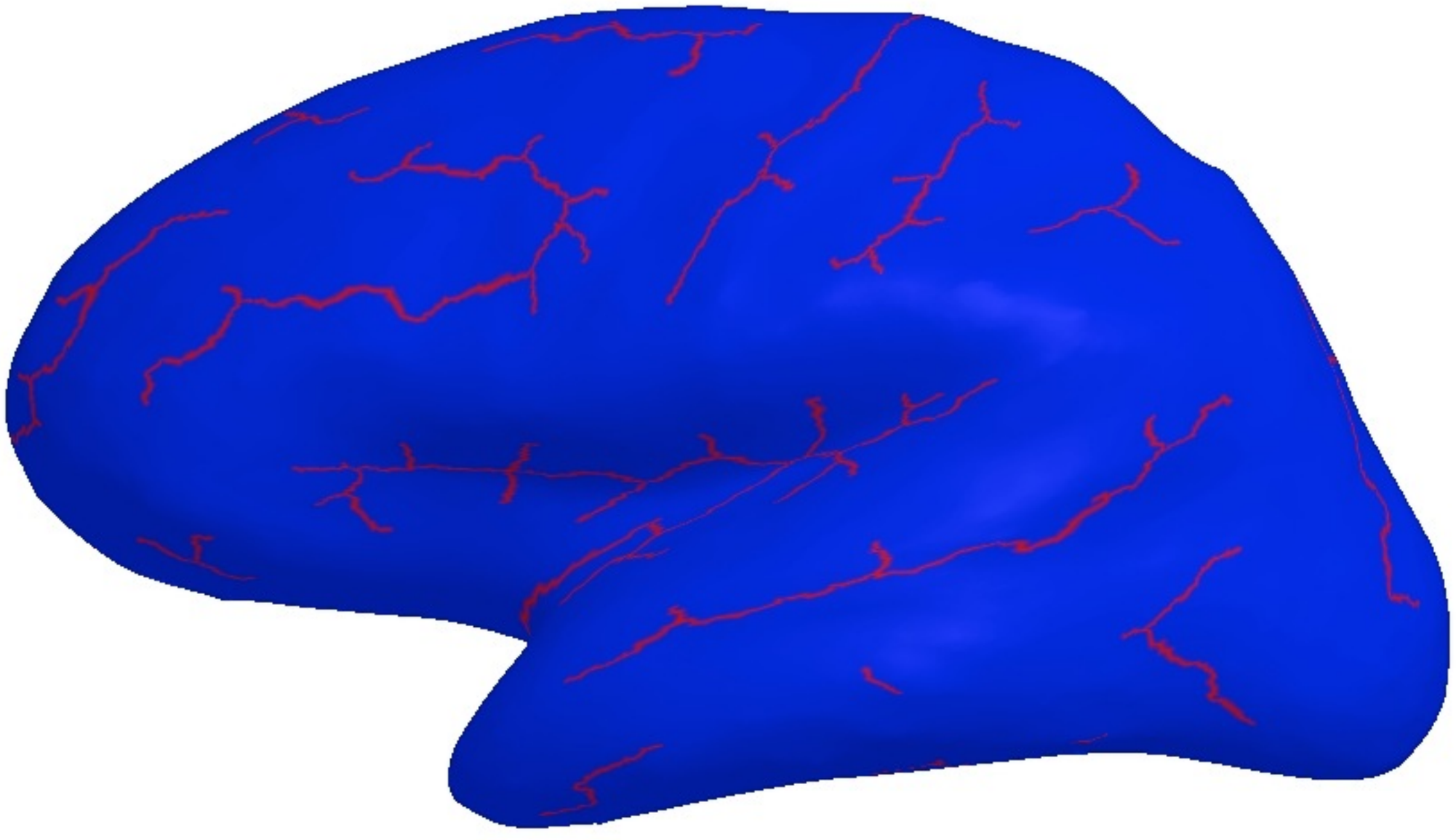


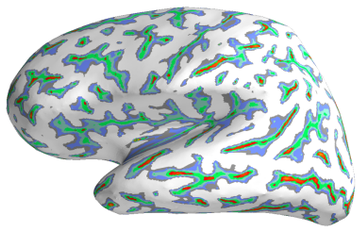
Fundus curves



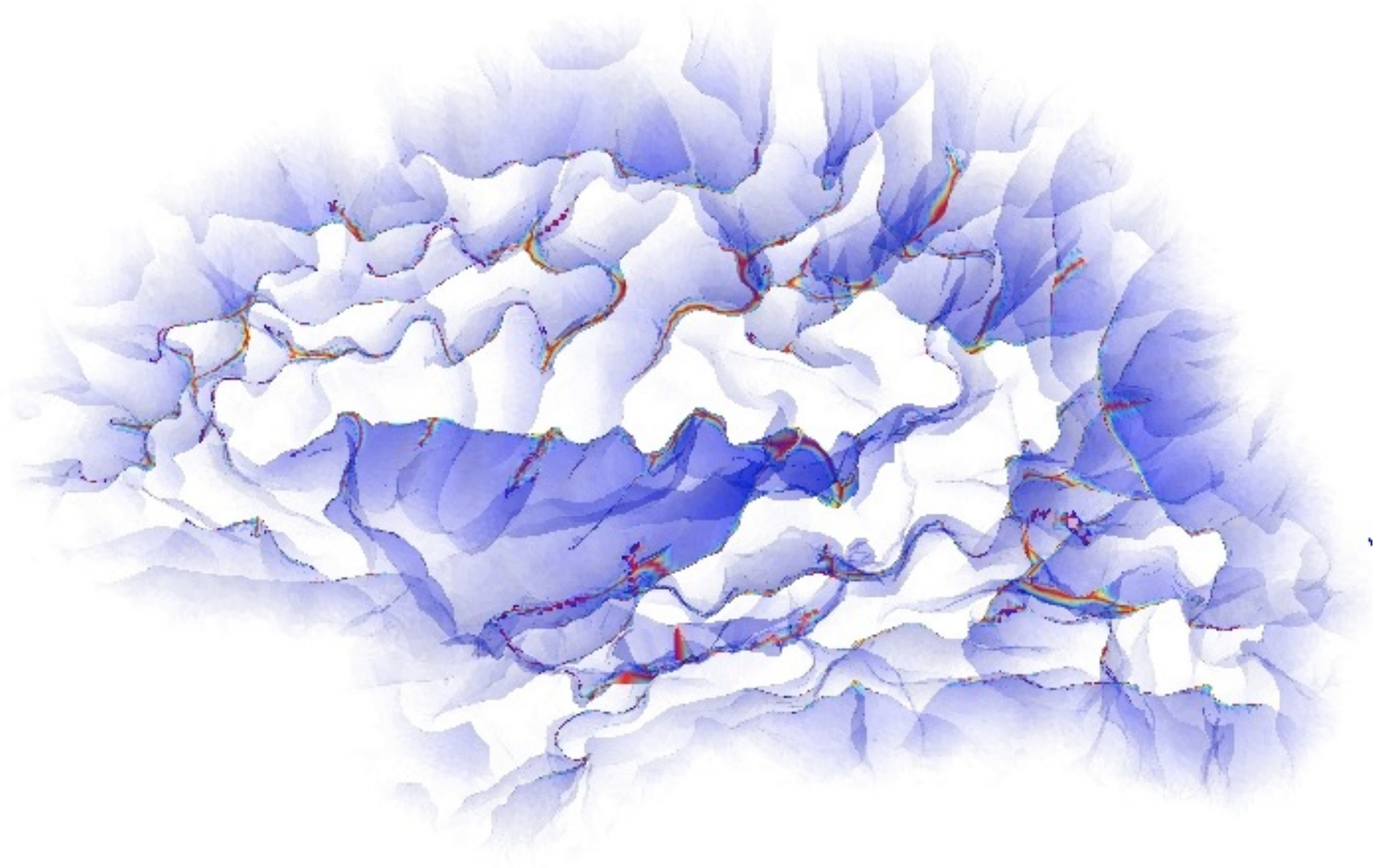


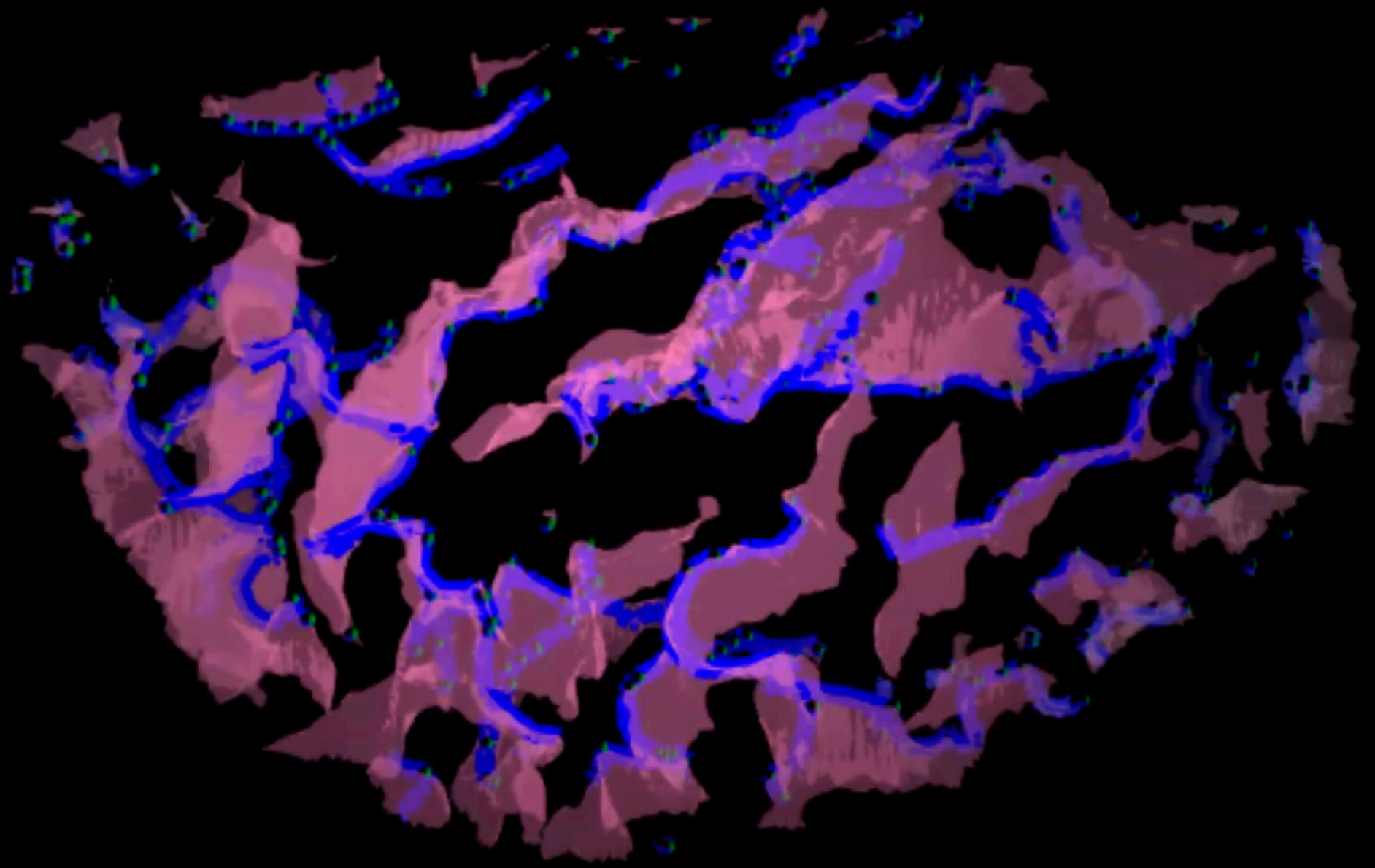
Fundus curves





Folds + fundus curves





Hackathon challenge #3: MNI152 mashup

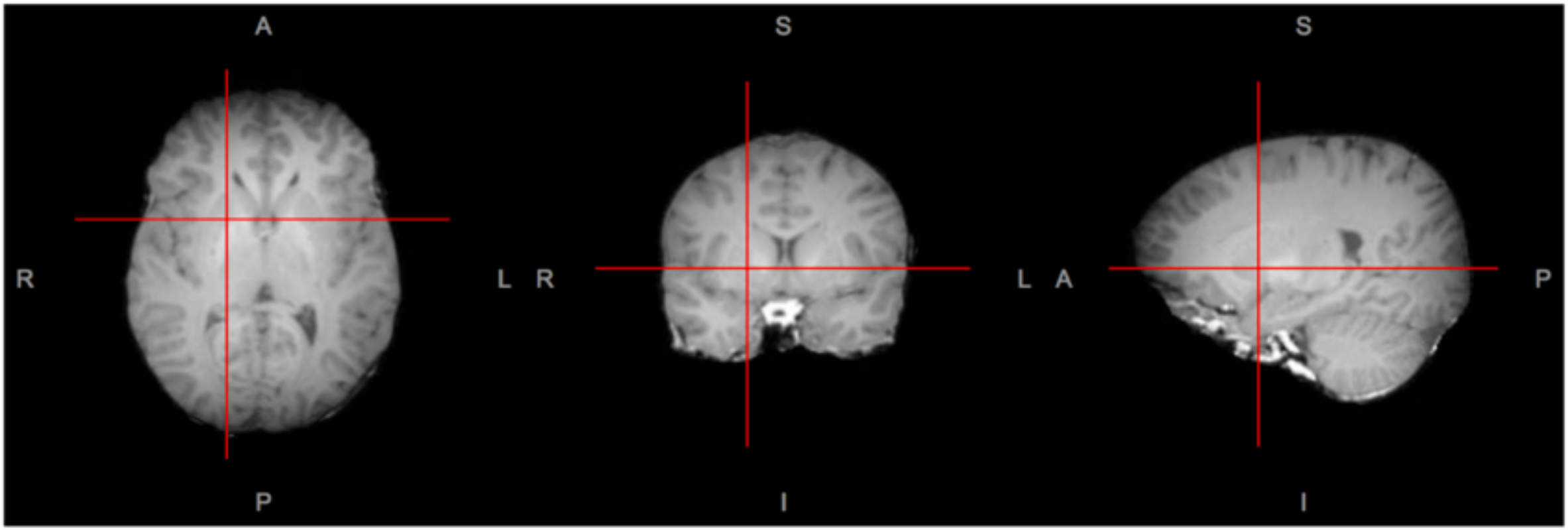
Anatomical labels, shape measures, and gene expression in MNI152 space

Mindboggle-102 team

arno klein / jason tourville / jay bohland / rich stoner

Allen human brain image and gene expression data

H0351.2001



1cm MNI Coordinate: **21, 8, 1**

Structure: **Striatum**

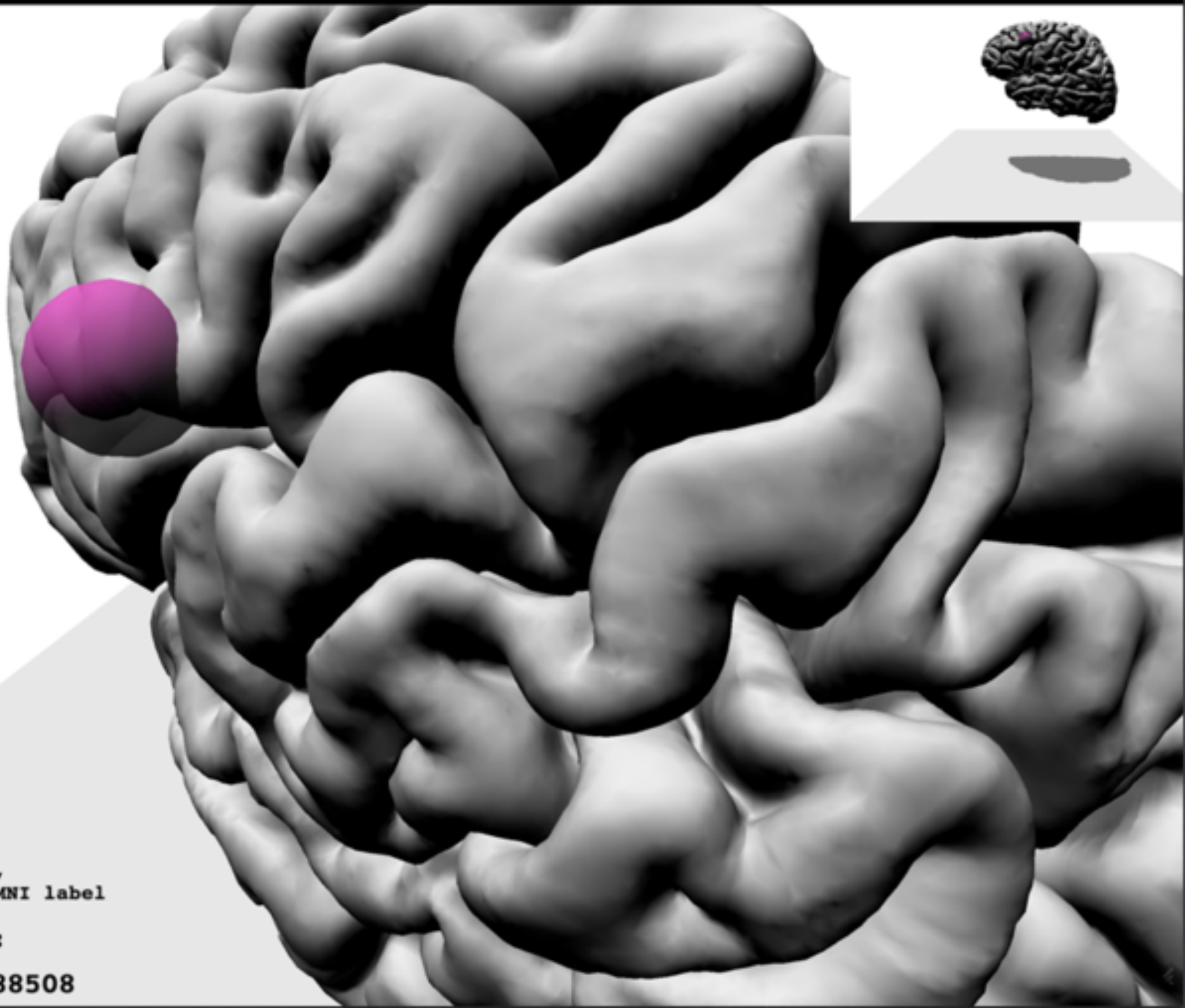
Putamen, Right (Pu)

MNI152 Visualization Demo

Show select label

Controls

Label 3



Highest expression,
aggregated within MNI label

A_24_P109661 :

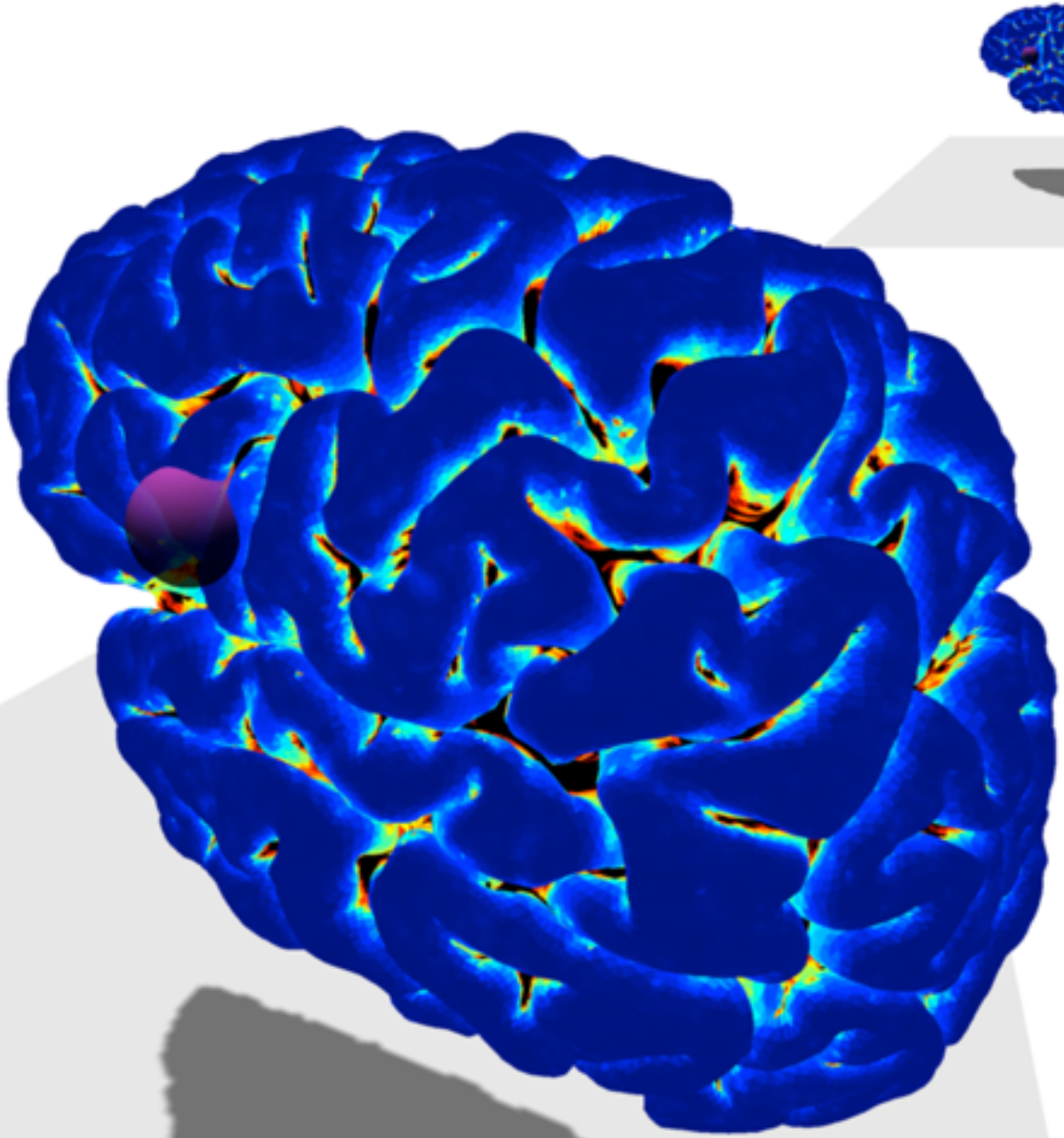
5.3213262053588508

MNI152 Visualization Demo

Show select label

Controls

Label 18



Highest expression,
aggregated within MNI label

A_23_P169812 :

6.4810893969243741

brainhack.org

SPINALCORDHACK2014-M...

Notes from Spinal Cord Hack – Milan 2014 The 44 researchers and clinicians attending

BRAINHACK EDT

Brainhack is a unique conference that convenes researchers from across the globe

15 MINUTE DSI PROJEC...

Summary: The 15 Minute DSI Project first began at the 2013 Hackathon in Paris,

HACKATHON TECH RESOURCES

wifi password: hacktheplanet projects page: www.brainhack.org chat: https://gitter.im/INCF/brainhack2014 live video: http://bit.ly/1pT0ELh

FLASKING NEUROSYNTH

Summary: The Neurosynth website is currently supported by a Rails back-end.

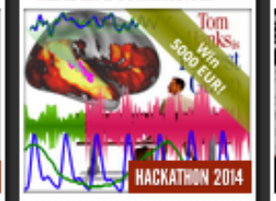
ALZHEIMER'S DI...

Summary: The goal of the Alzheimer's Disease Big Data DREAM8.5 Challenge #1 (AD#1) is

NI-DM APPS

Summary: The NIDASH Data Model (NI-DM) is a set of specifications (http://nidm.nidash.org/sp

REAL-LIFE COGNITION ...



Summary: The human brain is designed to process vast amounts of input that are

AURAL NEUROANATOMY

Summary: What if there was a neuroanatomy not meant to be seen, but to be listened? Eyes

PIXEL SHADER LIVECOD...

Summary: LIvecoding on the GPU–no geometry, just texture convolution–represents

1000 FUNCTIONAL CONN...

Summary: The 1000 Functional Connectomes Project and its International

BRAINBROWSER

Summary: BrainBrowser is a set of open source, web-based, 3D visualization

CALCULATING EFFECT S...

Summary: It is becoming obvious that the the black and white world of reporting

MRI QUALITY CONTROL

Summary: MRI QC https://github.com/chrisfilo is a set of plotting routines useful for

NEUROVAULT.ORG + NI-...

Summary: NI-DM is a format of describing neuroimaging experiments results.

AUTOSEG STN

Summary: Deep-Brain-Stimulation (DBS) is a widely used and highly-effective treatment in

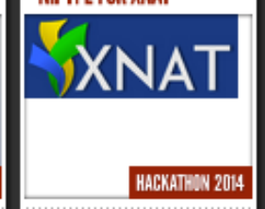
THE MODELGUI PROJECT

Summary: The ModelGUI Project is a Java-based, free, open source, platform-

NITRC RESOURCES REGI...

Summary: The Neuroimaging Informatics Tools and Resources

NIPYPE FOR XNAT



Summary: Nipype has the potential to be a great feature in XNAT. For this project, we will

DATA SHARING: MAKING...

Summary: Brain imaging lags behind other disciplines in data sharing. But to make

SPINALCORDHACK 2014

Summary: To follow close on the ISMRM meeting in Milan, we are inviting participants

NEUROSTARS.ORG

Summary: As part of INCF's Google Summer of Code, neurostars.org, a question and answer

BRAINSPELL TAGGING S...

Summary: More than 1 neuroimaging paper is published every hour. But we can keep up with

LORIS

Summary: Longitudinal Online Research and Imaging System (LORIS ; Das et al., 2011) is a

NEUROSYNTH BIBLIOMET...

Summary: Bibliometrics, which explores citation practices in the scientific

INTERACTIVE IPYTHON ...

Summary: This project will build on a starting set of IPython notebooks to replace

RE-ARCHITECTING NIPY...

Summary: A brainstorming + proof of concept implementations for the

INTEGRATING NIDM AND...

Summary: NIDM is a data sharing model that's being built to capture details of brain

EXTENDING MURFI2 ...

Summary: MURFI2 describes an open communication protocol for realtime fMRI. This

JAVASCRIPT VISUALIZA...

Summary: Create a collection of reusable javascript visualization

AUTOMATIC FREESURFER...

Summary: FreeSurfer often requires substantial manual

CIRRUSSCIENCE –...

Summary: CirrusScience (Cloud Infrastructure for

BRAINHACK 2013

The Neuro Bureau is proud to announce the 2013 Brainhack, to be

BIG QUALITY CONTROL

Summary: MRI data quality control over a wide range of

REPRODUCE EXISTING R...

Summary: NiLearn is a Python module, still under development, for

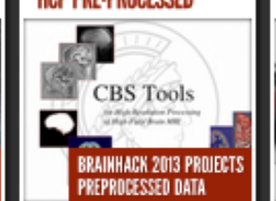
CONSORTIUM FOR REPRO...

Summary: The overarching goal of CoRR is to create an

FEAR CIRCUITS

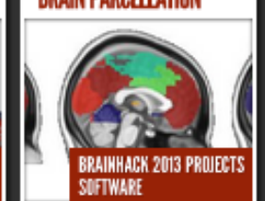
Summary: Who's afraid of the big, bad wolf? Fear processing circuit

HCP PRE-PROCESSED



Summary: At Brainhack 2012, we started a project on the idea to

BRAIN PARCELLATION



Summary: Most connectivity-based clustering studies focus

Alzheimers Disease Big Data DREAM Challenge 1

Sharing

Synapse ID: syn2290704
DOI: (doi:10.7303/syn2290704)

Wiki Files

Pages

Alzheimers Disease Big Data DREAM Challenge 1

1. Overview
  1.1 Steps to Participate
  1.2 DREAM9 Challenges Rules
2. Incentives
3. Data Access
4. Data Description and Format
  4.1 Training
  4.2 Ancillary
  4.3 Test - ROS/MAP
  4.4 Test - AddNeuroMed
5. Questions and Scoring
  5.1 Timelines
6. Leaderboards
  6.1 Submitting Results
    6.1.1 Making submission via the web

Please see News and Updates for messages about data and other AD Challenge information. Questions can be posed in the Community Forum. See Step 3 for how to sign up

Alzheimer's Disease Big Data DREAM Challenge #1
Launch: June 2, 2014
Close: October 3, midnight Pacific Time

Join

Alzheimers Disease Big Data DREAM Challenge 1

Sharing

Synapse ID: syn2290704
DOI: (doi:10.7303/syn2290704)

Wiki Files

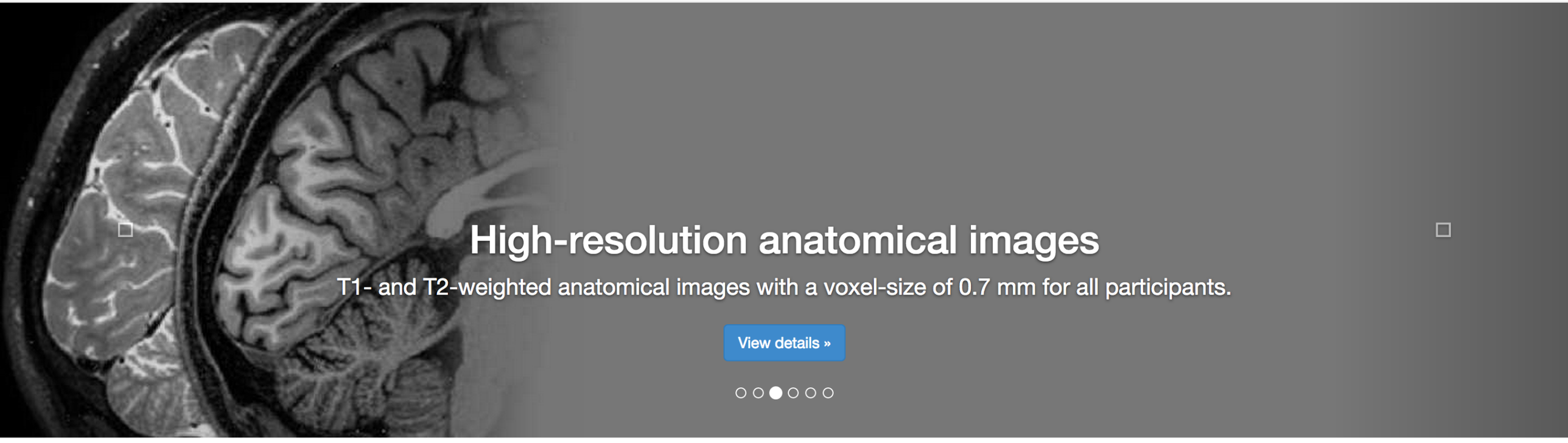
Pages

Alzheimers Disease Big Data DREAM Challenge 1

1. Overview
   1.1 Steps to Participate
   1.2 DREAM9 Challenges Rules
2. Incentives
3. Data Access
4. Data Description and Format
   4.1 Training
   4.2 Ancillary
   4.3 Test - ROS/MAP
   4.4 Test - AddNeuroMed
5. Questions and Scoring
   5.1 Timelines
6. Leaderboards
   6.1 Submitting Results
      6.1.1 Making submission via the web

6.4 Q3 Leaderboard

ID	Date	Name	entity	team	Percent Correct	Pearson MMSE	CCC MMSE	Mean Rank	Final Rank
2636580	08/21/2014 08:31:37AM	Guanlab05	syn2636579	Guanlab_UMich	38.30	0.6735	0.5792	1.50	1.50
2665590	09/03/2014 11:48:08AM	Guanlab6	syn2665589	Guanlab_UMich	48.94	0.6716	0.5803	1.50	1.50
2666633	09/03/2014 05:58:07PM	pred_11.csv	syn2666632	jn13	52.13	0.5767	0.5360	4.00	3.50
2677163	09/10/2014 08:37:39PM	SS100250	syn2677162	Bias	59.57	0.6018	0.5338	4.00	3.50
2633527	08/20/2014 02:00:40PM	Guanlab04	syn2633526	Guanlab_UMich	46.81	0.6275	0.5232	4.50	5.00
2677157	09/10/2014 08:29:07PM	SS250	syn2677156	Bias	59.57	0.5688	0.5245	6.00	6.00
2668034	09/05/2014 08:10:34AM	pred_12.csv	syn2666889	jn13	52.13	0.5708	0.5114	6.50	7.00
2662296	09/01/2014 02:47:55PM	pred_9.csv	syn2662278	jn13	52.13	0.5679	0.4676	9.50	8.00
2648187	08/23/2014 06:52:21PM	pred_8.csv	syn2648186	jn13	52.13	0.5605	0.4699	10.00	9.00
2662777	09/01/2014	pred_10.csv	syn2662761	jn13	52.13	0.5677	0.4653	10.50	10.50



The human brain is designed to process vast amounts of input that are continuously gathered through the senses. However, most experiments study the brain via simplified stimuli that do not resemble the complexity of a natural environment — a mismatch that needs to be addressed in order to better understand how the brain works. This project aims to provide essential components to enable inter-disciplinary research to study the brain's natural behavior and the versatile interactions of concurrent cognitive processes in everyday life.

Win 5000 Euro!

Challenge

Studying neural processing in real-life, rich natural environments requires adequate **data**, tested analysis **strategies**, and proven software **tools** that are capable deciphering brain activity pattern elicited by multiple concurrent neural processes.

Resources

We provide **extensive functional brain imaging data** from natural stimulation, a rich set of auxiliary data, (such as structural brain scans, measurements of physiological, and technical confounds), as well as stimulus annotations.

See overview »

Access

All data and software components are publicly available. There is no required sign-up or registration procedure. Data are released under an extremely permissive license and can be used by academic and commercial entities.

View instructions »

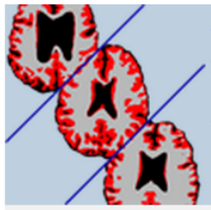
All Challenges

Here is an overview of all challenges that have been organized within the area of medical image analysis that we are aware of. If you know any study that would fit in this overview, please let us know by filling out this form.

Showing 76 projects of 76

Filter by: ☐ Open for submissions (41) ☐ Data download (47) ☐ Hosted on Grand-challenge (6)

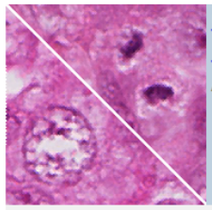
2014



Open for submissions
Data download
Workshop: Sep 18, 2014
Associated with: MICCAI 2014
Hosted on: grand-challenge.org

CADDementia

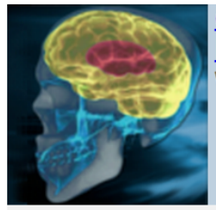
We seek algorithms that perform multi-class classification of patients with Alzheimer's disease (AD), patients with mild cognitive impairment (MCI) and healthy controls (CN) using multi-center structural MRI data.



Open for submissions
Data download
Associated with: ICPR 2014
Hosted on: grand-challenge.org

MITOS-ATYPIA-14

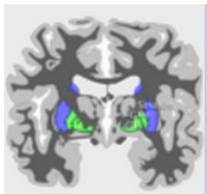
MITOS & ATYPIA 14 Contest, hosted by conference ICPR 2014 Detection of mitosis and evaluation of nuclear atypia on breast cancer H&E stained images



Open for submissions
Data download
Workshop: Sep 14, 2014

Brain Tumor Image Segmentation (BraTS 2014)

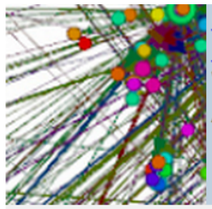
Contains three sub-challenges. 1: Segmentation of brain tumor (GBM) and its components, 2: Longitudinal Evaluation of time series image data and 3: Classification into Low- and and High Grade (GBM) gliomas.



Open for submissions
Data download
Associated with: STN 2014

Subthalamic Nucleus Segmentation Challenge 2014

This challenge seeks to bring together leading academic researchers to tackle the difficult problem of Subthalamic Nucleus (STN) segmentation in MRI volumes. Sponsored by Renishaw plc and organised by Aberytswyth University



Open for submissions
Data download
Workshop: Sep 14, 2014
Associated with: MICCAI 2014

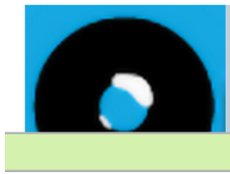
Brain Tumor Digital Pathology Challenge

Evaluation of classification of LGG and GBM, and segmentation of necrotic and normal brain regions from high-res digital pathology slide clinical cases.

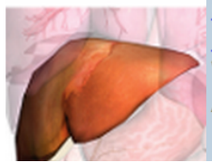
Data download
Workshop: Sep 12, 2014
Associated with: ECCV 2014

Leaf Segmentation Challenge

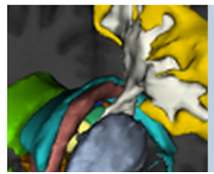
To advance the state of the art in leaf segmentation and to demonstrate the difficulty of segmenting all leaves in an image of plants, we organize the Leaf Segmentation Challenge (LSC).



Open for submissions
Data download
Workshop: Sep 18, 2014
Associated with: MICCAI 2014



Open for submissions
Data download
Workshop: Sep 14, 2014
Associated with: MICCAI 2014



Open for submissions
Data download
Workshop: Sep 14, 2014
Associated with: MICCAI 2014