



# **INCF Japan Node Hackathon**

**April 9-11, 2016**

# Report of BAH2015



# Summary of a questionnaire survey to PFs

voxel	6
pixel	1
vector	3
points	1

	persons	PF
python	4	3
java(含 ImageJ)	2	2
javascript	4	1
R	2	1
C/C++	5	2
PHP	3	2
その他		
HOC	2	
NMODL	1	
imageJ	1	
MATLAB	1	
mySQL		1

PF名	BrainTx	ViBrism DB		Dynamic Brain PF / SimPF	Sim-PF			NIMG -PF	Marmose
1.file modality	2.pixel	1. voxel	1. voxel	1. voxel 3. vector	1. voxel	4. 点の座標	3. vector	1. voxel	1. voxel
2.format	TIFF	vcat	nii	.raw, .vol, .vtk	Lsm, tiff	swc	obj	Specific format	Scr
3.typical data size and number	2800 genex 2x700 MB tif	40k x 200MB	5MBx 2xc		100MBxx	A few MB	A few MB	Xx(9428592byte)	50v
6.Data license	Now not open	CC-BY-SA	CC-BY-SA					mp	
What is Your tools you cal introducr		VCAT		PhysioDesigner, ImageViewer, Morphology Editor, Garuda platform	Neuron extraction				
Software soucecode is open?		No		No( but free)	Yes			No	
What license					BSD				

# Brain atlas ideathon

date : 2015/7/15 9 : 45-18 : 00

place : Riken BSI seminar room

<http://www.neuroinf.jp/bah2015/ideathon.html>



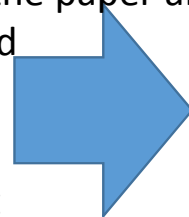
speaker		9
General participant		12
Through web conversation		3

# Brain atlas hackathon 2015

- date: 2015 9.5-7
- place: Riken BSI  
more than 22 guys



- Preprocessing for neuron segmentation team
- leader : Tetsuya Fukuda (Rcast, Univ of Tokyo. student)
- **Regestarion team** Image processing (deconvolution) and neuron segmentation  
There was a discussion to Dr.Peng in AINI
- leader : Hidetoshi Ikeno Continuing probably the paper about this work will be applied
- **Web3D team** 3D表示
- leader : Masahide Maeda (NIJC Riken) Extension about image file format
- **Pipeline Team** Constructed image processing pipeline using Ipython notebook
- leader : Alexander Woodward ( NIJC Riken )
- **Automatic database manipulation team**
- leader : Tomoki Kazawa CosmoAPI is good tool for manipulation by web-API and it is used migration of data from local BoND-DB to IVB=PF



Aini 2015 special session

Not finished : open the software tools

# July International event

- [J-Node and NIDM Joint Hackathon](#) : 2016 7/23-25 (from Sat to mon)

- 7-22 related symposium in

第39回 日本神経科学大会  
The 39th Annual Meeting of the Japan Neuroscience Society

**S3-F-3 Integration of Multi-dimensional Neuroscience.**  
Chair : Yoko Yamaguchi and Teiichi FURUICHI

<http://www.neuroscience2016.jnss.org/>

## WITH

INCF-NIDASH

INCF Neuroimaging Data Sharing Task Force

[nidm](#)

Neuroimaging Data Model (NIDM): describing neuroimaging data and provenance

# IVB-PF

Now Many( more than 10 ) database (CosmoDB) have its own terminology.

We are planning integrate those to one database(Xoonips).

How integrate those ontology?

- Our answer
- Link keyword to the outside mediawiki
- Construct relations between these word in wik
- Using semantic mediawiki(+)

## Keywords in DB A

Morphology/

Dendrites in the tip of the mushroom body Beta lobe and axon terminals in the lateral protocerebrum

Dendrites in the lateral and posterior protocerebrum and axon terminals in the mushroom body calyces

## Keywords in DB B

部位/

脳

キノコ体

キノコ体/傘部

前大脳側葉

## Keywords in DB C

arborization area/

AL

AL/G

AL/G/AV

AL/G/AD

AL/G/A

AL/G/PD

AL/G/P

AL/G/V

AL/MGC

AL/MGC/Cumulus

AL/MGC/Horseshoe

AL/MGC/Toroid

CC

LAL

MB

キノコ体 =  
Mushroom  
body = MB



To do

Prepare wiki( using copy of jscp wiki)

Link keyword in data page in bond/xoonips to wiki keyword page

Descript keyword in wiki or move terminology page in

Make backlink in keyword page in wiki

Construct and improvement ontology

synonym

aberration

English/ Japanese translation

Using DAO (drosophila anatomy ontology)?



<https://cns.neuroinf.jp/jscpb/wiki/>

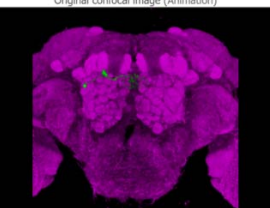
# 参考

## Neuron ID

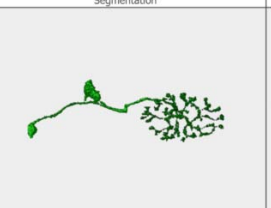
General Information					
Name	VGlut-F-600742	Soma Coordinate	X: -125, Y: -22, Z: 23	Author	AS Chiang (2014-11-13)
Driver	VGlut-Gal4	Putative neurotransmitter	Glutamate	Stock	
Gender/Age	female / Adult 5~15 days	Putative birth time	day 6	Lineage	
Polarity (Table.txt)	Dendrite:EB,SDFP Axon:EB				

**Images** (Download 3D Neuroimaging data, need registration)


Original confocal image (Animation)



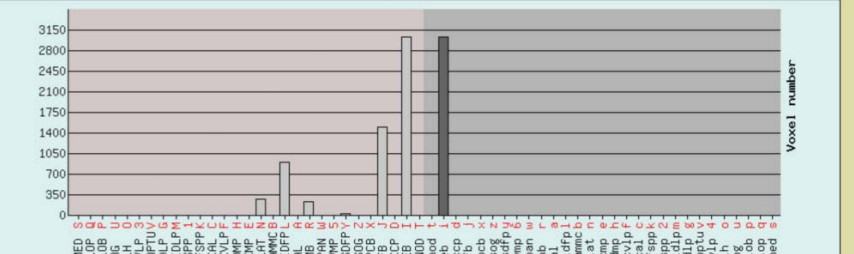
Segmentation



Skeleton



**Spatial Distribution** EB 3020\_eb 3026\_FB 1489\_IDFP 897\_LAT 271\_MB 228\_SDFP 29



**Similar neurons** (less neurons, more neurons)

Trh-F-500196 (r: 87.01%, nValue: 2.2e-16)	Cha-F-500152 (r: 86.83%, nValue: 2.2e-16)	Gad1-F-500106 (r: 84.26%, nValue: 2.2e-16)	SHT1A-F-300012 (r: 83.17%, nValue: 2.2e-16)
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## BrainMap (*Drosophila melanogaster*)

frontal section movie

elav>n-synaptobrevin-GFP      synapse-rich neuropils

Insect Brain Name Working Group      Apr. 2013

fly circuit

Drosophila anatomy ontology (DAO)

[http://flycircuit.tw/modules.php?name=clearpage&op=detail\\_table&neuron=VGlut-F-600742](http://flycircuit.tw/modules.php?name=clearpage&op=detail_table&neuron=VGlut-F-600742)