DMP title

Project Name FWO DMP - DMP title

Project Identifier u0145033

Grant Title 1159422N

Principal Investigator / Researcher Alex Calzoni

Description To interact with the environment, animals must be able to process sensory information and initiate suitable responses. The superior colliculus is a central node in the mammalian visual system that mediates a set of defensive and orienting behaviors. My goal is to understand how individual collicular cell types encode and disseminate visual information to guide these innate behaviors. For this, I aim to determine the response properties of genetically identified neurons to salient visual stimuli across the visual field, their connectivity, and direct effect on behavior by using a combination of electrophysiological and imaging techniques, viral tracing systems, optogenetics, and different behavioral setups.

Institution KU Leuven

1. General Information

Name applicant

Alex Calzoni

FWO Project Number & Title

1159422N

'Determining the role of defined collicular cell types in visual field-dependent innate behaviors'

Affiliation

- KU Leuven

2. Data description

Will you generate/collect new data and/or make use of existing data?

- Generate new data

Describe in detail the origin, type and format of the data (per dataset) and its (estimated) volume. This may be easiest in a table (see example) or as a data flow and per WP or objective of the project. If you reuse existing data, specify the source of these data. Distinguish data types (the kind of content) from data formats (the technical format).

Type of data	Format	Volume	How created
Microscopy images of brain tissue with labelled cells	.nd2	1 file, max 7 GB	Widefield fluorescence slidescanner
	.lsm	1 file, max 600 MB	Confocal fluorescence microscope
	.tif	1 file, variable (MB-GB)	Processed image
Electrophysiological data	Neurodata Without Borders	1 file, max 10 GB	Neuropixel probe recordings
Camera recordings of animal's behavior	.avi	1 file, max 5 GB	Camera recording the animal's behavior to visual stimulation
Time series containing information about camera, stimulus and frame triggers, and the animal's running speed during recordings	.H5	1 file, KB-MB range	
	.csv		
Parameter files that contain details about displayed visual stimuli.	.H5	1 file, KB-MB range	

3. Legal and ethical issues

Will you use personal data? If so, shortly describe the kind of personal data you will use. Add the reference to your file in KU Leuven's Register of Data Processing for Research and Public Service Purposes (PRET application). Be aware that registering the fact that you process personal data is a legal obligation.

- No

Privacy Registry Reference:
Short description of the kind of personal data that will be used:

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? If so, add the reference to the formal approval by the relevant ethical review committee(s)

- Yes

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Does your work possibly result in research data with potential for tech transfer and valorisation? Will IP restrictions be claimed for the data you created? If so, for what data and which restrictions will be asserted?

- No

Do existing 3rd party agreements restrict dissemination or exploitation of the data

you (re)use? If so, to what data do they relate and what restrictions are in place?

- No

4. Documentation and metadata

What documentation will be provided to enable reuse of the data collected/generated in this project?

1. For microscopy images, the following information will be noted: dimensions, image type, bit-depth, pixel sizes and microscope settings. The methodology and protocol for acquisition and processing will be described in detail in a notebook.
2. Information about extracellular electrophysiology data (spiking timescales for each recording channel) will be collected as a .nwb file. A notebook section for each experiment will detail what the data represent and how it was generated. Camera recording files (.avi) of the animal's behavior during electrophysiological recording will be stored in the same folder (named after the number of experiment).
3. A detailed description of time series files containing information about the camera, stimulus and frame triggers, and the animal's running speed during recordings will be stored in a ReadMe file inside the folder of the corresponding experiment, together with an explanation of parameter files that contain details about displayed visual stimuli.

Will a metadata standard be used? If so, describe in detail which standard will be used. If no, state in detail which metadata will be created to make the data easy/easier to find and reuse.

- No

See above for metadata.

A detailed description of how data storage is structured and accessed is present in the laboratory notebook.

5. Data storage and backup during the FWO project

Where will the data be stored?

Our institute has a file server with automatic backup system on which all data will be stored for at least 5 years after the research project ends. Data about each experiment is stored in a folder named after the experiment's number.

How is backup of the data provided?

Our file server has an automatic backup system.

Is there currently sufficient storage & backup capacity during the project? If yes, specify concisely. If no or insufficient storage or backup capacities are available then explain how this will be taken care of.

- Yes

The capacity of the file server is 10 TB per person. Data will also be stored on the group-internal file server (capacity of 100 TB) where it can be easily accessed. Manuscripts are stored on a group internal OneDrive that is based on the IMEC corporate account. After each experiment, data is saved to the group-internal file server for preservation and analyzed there. After analysis, data is stored at the institute-internal file server.

What are the expected costs for data storage and back up during the project? How will these costs be covered?

The costs are covered by the central budget of NERF.

Data security: how will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

To access the stored data user need to:

- Connect to a dedicated network from a PC registered in the IMEC internal network
- Input password for a determined storage server

Trying to access an IMEC server from any network (wifi, ethernet cable) will not work.

6. Data preservation after the FWO project

Which data will be retained for the expected 5 year period after the end of the project? In case only a selection of the data can/will be preserved, clearly state the reasons for this (legal or contractual restrictions, physical preservation issues, ...).

All data will be retained for at least 5 years after the end of the project.

Where will the data be archived (= stored for the longer term)?

Data will be archived on an internal file server at NERF.

What are the expected costs for data preservation during the retention period of 5 years? How will the costs be covered?

The costs are covered by the central budget of NERF.

7. Data sharing and reuse

Are there any factors restricting or preventing the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)?

- No

Which data will be made available after the end of the project?

Generated data mentioned in manuscripts and figures will be made available publicly on a hosting service equivalent to OSF (osf.io).

Where/how will the data be made available for reuse?

- In an Open Access repository

When will the data be made available?

- After an embargo period. Specify the length of the embargo and why this is necessary
- Upon publication of the research results

After being published and the period of the embargo is over (6 months in Belgium). The Open Access provision in the Belgian law gives authors the right to make scholarly publications available in Open Access with a maximum embargo period of 6 months for Science Technology and Medicine (STM).

Who will be able to access the data and under what conditions?

Anyone, provided that they give appropriate credit to the creators.

What are the expected costs for data sharing? How will the costs be covered?

The costs are currently free at OSF for the expected data.

8. Responsibilities

Who will be responsible for data documentation & metadata?

Alex Calzoni and Prof. Karl Farrow (PI)

Who will be responsible for data storage & back up during the project?

Alex Calzoni and Prof. Karl Farrow (PI)

Who will be responsible for ensuring data preservation and reuse ?

Prof. Karl Farrow (PI)

Who bears the end responsibility for updating & implementing this DMP?

The PI (Prof. Karl Farrow) bears the end responsibility of updating & implementing this DMP.