FWO DMP Template - Flemish Standard Data Management Plan

Version KU Leuven

1. General Project Information	
Name Grant Holder & ORCID	Sandeep Venkatraman https://orcid.org/0000-0002-6168-232X
Contributor name(s) (+ ORCID) & roles	Sandeep Venkatraman https://orcid.org/0000-0002-6168-232X (PhD student)
Project number [1] & title	Decoding neuropeptide signaling networks underlying experience-dependent brain plasticity
Funder(s) GrantID [2]	11PKS24N
Affiliation(s)	☒ KU Leuven ROR identifier KU Leuven: 05f950310

[1] "Project number" refers to the institutional project number. This question is optional. Applicants can only provide one project number.

[2] Funder(s) GrantID refers to the number of the DMP at the funder(s), here one can specify multiple GrantIDs if multiple funding sources were used.

Please provide a short project description	The potential to adapt behavior to environmental changes is crucial for the survival of an animal. In an ever-changing environment, it becomes of pivotal importance to sense, incorporate experiences, and exhibit behavioral plasticity. Yet, how sensory experiences are molecularly encoded and regulate behaviors is less well understood. I aim to understand the molecular mechanisms that drive these behavioral changes. Neuropeptides, a diverse class of molecular messengers have long been known to initiate and modulate behavioral responses in animals. Using the genetic model organism *C. elegans*, which has a well-characterized nervous system, I aim to study how experience-dependent neuropeptide signaling governs behavioral plasticity. I will be using state-of-the-art molecular and imaging tools to study the role of individual peptides and their receptor targets in behavioral plasticity. This work will shed light on our understanding of the fundamental principles of long-term behavioral changes in animals.

2. Research Data Summary

				ONLY FOR DIGITAL DATA	*ONLY FOR DIGITAL DATA*	*ONLY FOR DIGITAL DATA*	*ONLY FOR PHYSICAL DATA*
Dataset Name	Description	New or Reused	Digital or Physical	Digital Data Type	Digital Data Format	Digital Data Volume (MB, GB, TB)	Physical Volume
Publication manuscripts	Publication manuscripts	☒ Generate new data	☒ Digital	☒ Numerical ☒ Textual	.docx, .pdf, .png, .jpg	☒ < 100 GB	
Images	Confocal fluorescence microscopy of transgenes	☒ Generate new data	☒ Digital	☒ Images	.jpg, .tiff, .oib	☒ < 1 TB	
Videos	Semi-automated behavioral assays, Calcium imaging	☒ Generate new data	☒ Digital	☒ Audiovisual ☒ Software	.avi, .stk	☒ > 5 TB	
Processed data file	Quantitative experimental data (behavioral assay data, calcium imaging data, receptor deorphanisation and dose response data)	☒ Generate new data	☒ Digital	☒ Numerical ☒ Textual ☒ Software ☒ Images	csv, .exe, .xlsx, .mat, .RData, .rda, .pzfx	☒ < 100 GB	
Data representations	Visual representation of quantitative and qualitative data	☒ Generate new data	☒ Digital	☒ Images ☒ Textual	.ai, .svg, .jpg, .png, .pdf	☒ < 100 GB	

Notebooks	Experimental logbook	☒ Generate new data	☒ Physical	/	/	/	5-6 books
Frozen *C. elegans* stock	*C. elegans* strains frozen at -80 degrees	☒ Generate new data	☒ Physical	/	/	/	3-4 vial boxes
Bacterial stocks	Bacteria frozen at -80 degrees	☒ Generate new data	☒ Physical	/	/	/	2-3 vial boxes
DNA/RNA Stocks	Nucleic-acid samples frozen at -20 degrees	☒ Generate new data	☒ Physical	/	/	/	5-6 vial boxes

GUIDANCE:
The data description forms the basis of your entire DMP, so make sure it is detailed and complete. It includes digital and physical data and encompasses the whole spectrum ranging from raw data to processed and analysed data including analysis scripts and code. Physical data are all materials that need proper management because they are valuable, difficult to replace and/or ethical issues are associated. Materials that are not considered data in an RDM context include your own manuscripts, theses and presentations; documentation is an integral part of your datasets and should described under documentation/metadata.
RDM Guidance on data

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type.	NA

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, refer to specific datasets or data types when appropriate and provide the relevant ethical approval number.	☐ Yes, human subject data; provide SMEC or EC approval number: ☐ Yes, animal data; provide ECD reference number: ☐ Yes, dual use; provide approval number: ☒ No Additional information:
Will you process personal data[3]? If so, please refer to specific datasets or data types when appropriate and provide the KU Leuven or UZ Leuven privacy register number (G or S number).	☐ Yes (provide PRET G-number or EC S-number below) ☒ No Additional information:
Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, …)? If so, please comment per dataset or data type where appropriate.	☐ Yes ☒ No If yes, please comment:
Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material/Data transfer agreements, research collaboration agreements)? If so, please explain to what data they relate and what restrictions are in place.	☐ Yes ☒ No If yes, please explain:
Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain to what data they relate and which restrictions will be asserted.	☐ Yes ☒ No If yes, please explain:

[3] See Glossary Flemish Standard Data Management Plan

3. Documentation and Metadata	
Clearly describe what approach will be followed to capture the accompanying information necessary to keep **data understandable and usable**, for yourself and others, now and in the future (e.g. in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, Codebook.tsv etc. where this information is recorded). *RDM guidance on documentation and metadata*.	Documentation involves storing digital data on both Desktop File Storage and Large Volume Storage, organizing it into folders by research objectives and experiments. Each folder will include text files describing the data and how it was generated. I will document experimental procedures in Word files and hardcover notebooks. Sample details, like plasmid maps and strain genotypes, will be kept in Excel files, along with information on their location in frozen stock collections.
Will a metadata standard be used to make it easier to **find and reuse the data**? If so, please specify which metadata standard will be used. If not, please specify which metadata will be created to make the data easier to find and reuse. *REPOSITORIES COULD ASK TO DELIVER METADATA IN A CERTAIN FORMAT, WITH SPECIFIED ONTOLOGIES AND VOCABULARIES, I.E. STANDARD LISTS WITH UNIQUE IDENTIFIERS.*	☒ Yes ☐ No If yes, please specify (where appropriate per dataset or data type) which metadata standard will be used: Biological imaging data will be stored following the OME (Open Microscopy Environment) standard to encode metadata on light microscopy experiments in image files. Metadata about strain and plasmid collections will be created manually, following the community guidelines as published in the Nomenclature section of the community resource Wormbase (www.wormbase.org).

4. Data Storage & Back-up during the Research Project	
Where will the data be stored? *Consult the interactive KU Leuven storage guide to find the most suitable storage solution for your data.*	☒ Shared network drive (J-drive) ☐ Personal network drive (I-drive) ☒ OneDrive (KU Leuven) ☐ Sharepoint online ☐ Sharepoint on-premis ☒ Large Volume Storage ☐ Digital Vault ☐ Other:
How will the data be backed up? *WHAT STORAGE AND BACKUP PROCEDURES WILL BE IN PLACE TO PREVENT DATA LOSS?*	☒ Standard back-up provided by KU Leuven ICTS for my storage solution ☒ Personal back-ups I make (via Google drives and personal hard disk) ☐ Other (specify)
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 ☐ No

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons? *CLEARLY DESCRIBE THE MEASURES (IN TERMS OF PHYSICAL SECURITY, NETWORK SECURITY, AND SECURITY OF COMPUTER SYSTEMS AND FILES) THAT WILL BE TAKEN TO ENSURE THAT STORED AND TRANSFERRED DATA ARE SAFE.* *Guidance on security for research data*	We will not be working with personal, confidential, or sensitive data but will ensure data security by storing data at secured KU Leuven Network storages and buildings.
What are the expected costs for data storage and backup during the research project? How will these costs be covered?	Expected costs for data storage and back-up during the project are estimated 3500 EUR, which will be covered by the allocated FWO project bench fee or research project funds.

5. Data Preservation after the end of the Research Project	
Which data will be retained for at least five years (or longer, in agreement with other retention policies that are applicable) after the end of the project? In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...). *Guidance on data preservation*	☒ All data will be preserved for 10 years according to KU Leuven RDM policy ☐ All data will be preserved for 25 years according to CTC recommendations for clinical trials with medicinal products for human use and for clinical experiments on humans ☐ Certain data cannot be kept for 10 years (explain)

Where will these data be archived (stored and curated for the long-term)? *Dedicated data repositories are often the best place to preserve your data. Data not suitable for preservation in a repository can be stored using a KU Leuven storage solution, consult the interactive KU Leuven storage guide.*	☒ KU Leuven RDR ☒ Large Volume Storage (longterm for large volumes) ☐ Shared network drive (J-drive) ☐ Other (specifiy):
What are the expected costs for data preservation during the expected retention period? How will these costs be covered?	Expected costs for data storage and back-up after the project are estimated at 3500 EUR, which will be covered by research grant budgets.

6. Data Sharing and Reuse	
Will the data (or part of the data) be made available for reuse after/during the project? Please explain per dataset or data type which data will be made available. *NOTE THAT 'AVAILABLE' DOES NOT NECESSARILY MEAN THAT THE DATA SET BECOMES OPENLY AVAILABLE, CONDITIONS FOR ACCESS AND USE MAY APPLY. AVAILABILITY IN THIS QUESTION THUS ENTAILS BOTH OPEN & RESTRICTED ACCESS. FOR MORE INFORMATION: HTTPS://WIKI.SURFNET.NL/DISPLAY/STANDARDS/INFO-EU-REPO/#INFOEUREPO-ACCESSRIGHTS*	☒ Yes, as open data ☒ Yes, as embargoed data (temporary restriction) ☐ Yes, as restricted data (upon approval, or institutional access only) ☐ No (closed access) ☐ Other, please specify:
If access is restricted, please specify who will be able to access the data and under what conditions.	NA

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)? Please explain per dataset or data type where appropriate.	☐ Yes, privacy aspects ☐ Yes, intellectual property rights ☐ Yes, ethical aspects ☐ Yes, aspects of dual use ☐ Yes, other ☒ No If yes, please specify:
Where will the data be made available? If already known, please provide a repository per dataset or data type.	☐ KU Leuven RDR ☒ Other data repository (KU Leuven Lirias 2.0 repository) ☐ Other (specify)
When will the data be made available?	☒ Upon publication of research results ☐ Specific date (specify) ☐ Other (specify)
Which data usage licenses are you going to provide? If none, please explain why. *A DATA USAGE LICENSE INDICATES WHETHER THE DATA CAN BE REUSED OR NOT AND UNDER WHAT CONDITIONS. IF NO LICENCE IS GRANTED, THE DATA ARE IN A GREY ZONE AND CANNOT BE LEGALLY REUSED. DO NOTE THAT YOU MAY ONLY RELEASE DATA UNDER A LICENCE CHOSEN BY YOURSELF IF IT DOES NOT ALREADY FALL UNDER ANOTHER LICENCE THAT MIGHT PROHIBIT THAT.* *Check the RDR guidance on licences for data and software sources code or consult the License selector tool to help you choose.*	☒ CC-BY 4.0 (data) ☐ Data Transfer Agreement (restricted data) ☐ MIT licence (code) ☐ GNU GPL-3.0 (code) ☐ Other (specify)

Do you intend to add a PID/DOI/accession number to your dataset(s)? If already available, please provide it here. *INDICATE WHETHER YOU INTEND TO ADD A PERSISTENT AND UNIQUE IDENTIFIER IN ORDER TO IDENTIFY AND RETRIEVE THE DATA.*	☒ Yes, a PID will be added upon deposit in a data repository ☐ My dataset already has a PID ☐ No
What are the expected costs for data sharing? How will these costs be covered?	Expected costs for data sharing encompass publication fees (estimated 3000 EUR), which will be covered by the research project funds.

7. Responsibilities	
Who will manage data documentation and metadata during the research project?	The main researcher will manage data documentation and metadata management during the project.
Who will manage data storage and backup during the research project?	The main researcher will manage data storage and back-ups on KU Leuven servers during the project.
Who will manage data preservation and sharing?	The principal investigator will manage data preservation and sharing
Who will update and implement this DMP?	The main researcher and PI will update & implement this DMP.