

FWO DMP Template

Project supervisors (from application round 2018 onwards) and fellows (from application round 2020 onwards) will, upon being awarded their project or fellowship, be invited to develop their answers to the data management related questions into a DMP. The FWO expects a **completed DMP no later than 6 months after the official start date** of the project or fellowship. The DMP should not be submitted to FWO but to the research co-ordination office of the host institute; FWO may request the DMP in a random check.

At the end of the project, the **final version of the DMP** has to be added to the final report of the project; this should be submitted to FWO by the supervisor-spokesperson through FWO's e-portal. This DMP may of course have been updated since its first version. The DMP is an element in the final evaluation of the project by the relevant expert panel. Both the DMP submitted within the first 6 months after the start date and the final DMP may use this template.

1. General Information	
Name applicant	Adrian Ranga
FWO Project Number & Title	<i>Actuoids: Bioengineering the Neural Tube with Soft Actuation</i> G086622N
Affiliation	<input checked="" type="checkbox"/> KU Leuven <input type="checkbox"/> Universiteit Antwerpen <input type="checkbox"/> Universiteit Gent <input type="checkbox"/> Universiteit Hasselt <input type="checkbox"/> Vrije Universiteit Brussel <input type="checkbox"/> Other:
2. Data description	
Will you generate/collect new data and/or make use of existing data?	<input checked="" type="checkbox"/> Generate new data <input type="checkbox"/> Reuse existing data

<p>Describe the origin, type and format of the data (per dataset) and its (estimated) volume</p> <p><i>If you reuse existing data, specify the source of these data.</i></p> <p><i>Distinguish data types (the kind of content) from data formats (the technical format).</i></p>	<p>The data types collected will involve mainly microscopy-acquired images, and numerical databases (eg. Excel) with results and analysis. Additionally, computer programs for data analysis such as in Matlab and R will be generated. Final outcome of this research will be in the format of Word documents, Powerpoint slides and Adobe Illustrator figures. We are currently collaborating with the group of Stein Aerts for the secure preservation of our scRNAseq data.</p>
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3. Ethical and legal issues

<p>Will you use personal data? If so, shortly describe the kind of personal data you will use AND add the reference to your file in your host institution's privacy register.</p> <p><i>In case your host institution does not (yet) have a privacy register, a reference is not yet required of course; please add the reference once the privacy register is in place in your host institution.</i></p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If yes:</p> <ul style="list-style-type: none"> - Privacy Registry Reference: - Short description of the kind of personal data that will be used:
<p>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).</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If yes:</p> <ul style="list-style-type: none"> - Reference to ethical committee approval:
<p>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?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, please comment: Some of the technologies for actuating organoids, as described in the proposal, may be protected through patent applications. This will be done with the help of KU Leuven LRD, prior to submission of work for publication. Submission for IP protection is not expected to delay publication of the work.</p>

Do existing 3 rd 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please comment:
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4. Documentation and metadata

What documentation will be provided to enable understanding and reuse of the data collected/generated in this project?	All files stored on the NAS are time-stamped and stored by user. Documentation is provided in the form of data inventories per project, also stored on the NAS. scRNAseq data is uploaded to GEO and referenced in publications. Primary data and source code is referenced in electronic notebooks.
Will a metadata standard be used? If so, describe in detail which standard will be used. If not, state in detail which metadata will be created to make the data easy/easier to find and reuse.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please specify: Metadata for files uploaded to NAS will be automatically generated and will be centrally managed by myself (Ranga) and senior postdoc involved in this project.

5. Data storage & backup during the FWO project

Where will the data be stored?	We have currently implemented a system whereby data is stored in a network attached storage (NAS), a specialized computer dedicated to file storage, on 2 fast 8TB HDDS drives which store data in parallel in mirrored configuration. Control is done via web interface, implementing multiple backup and replication strategies, including replication of data to cloud storage. Besides data storage the NAS also implements major types of collaborative activities, like document or spreadsheet editing, calendars, notes and todo lists.
How will the data be backed up?	See above

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.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, please specify: see above. The NAS is easily upgraded to multiple drives should the need arise.
What are the expected costs for data storage and backup during the project? How will these costs be covered? <i>Although FWO has no earmarked budget at its disposal to support correct research data management, FWO allows for part of the allocated project budget to be used to cover the cost incurred.</i>	The NAS is purchased and will not require additional costs at the moment. Budget for extending storage capacities physically or cloud-based will be incorporated into the equipment part of this FWO budget, in combination with other project budgets which would require additional storage, as needs arise.
Data security: how will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?	Data stored on NAS is read-only and version control is implemented.

6. Data preservation after the end of the FWO project

FWO expects that data generated during the project are retained for a period of minimally 5 years after the end of the project, in as far as legal and contractual agreements allow.

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 generated data used in publications is planned to be stored for 5 years after end of the project. Primary data from experiments which have failed or are not used for publication will be deleted in consultation with PI.
Where will these data be archived (= stored for the long term)?	Data will be archived on the NAS (see above).

<p>What are the expected costs for data preservation during these 5 years? How will the costs be covered?</p> <p><i>Although FWO has no earmarked budget at its disposal to support correct research data management, FWO allows for part of the allocated project budget to be used to cover the cost incurred.</i></p>	<p>At the moment, no additional costs are foreseen. Additional drives for archival storage at the end of the project may be required and costs (few hundred euros) will be reserved on equipment budget of the project for the end of the project for this purpose.</p>
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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 3 rd party, legal restrictions)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please specify:
Which data will be made available after the end of the project?	Relevant code will be made available on Github, scRNAseq data will be made available on GO, other primary data will be available upon request, or may be made available on lab website if relevant.
Where/how will the data be made available for reuse?	<input checked="" type="checkbox"/> In an Open Access repository <input type="checkbox"/> In a restricted access repository <input checked="" type="checkbox"/> Upon request by mail <input type="checkbox"/> Other (specify):
When will the data be made available?	As soon as results are published on open access repository bioRxiv, or upon journal publication, or after submission of IP file, depending on situation/type of sub-project.
Who will be able to access the data and under what conditions?	As soon as condition above is fulfilled (publication in bioRxiv or journal, IP filed), data will be made freely available.

<p>What are the expected costs for data sharing? How will these costs be covered?</p> <p><i>Although FWO has no earmarked budget at its disposal to support correct research data management, FWO allows for part of the allocated project budget to be used to cover the cost incurred.</i></p>	<p>No additional costs are expected for above described data sharing activities.</p>
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8. Responsibilities	
Who will be responsible for the data documentation & metadata?	PI: Adrian Ranga / senior post-doc involved in the project.
Who will be responsible for data storage & back up during the project?	senior post-doc involved in the project / PhD students involved in the project
Who will be responsible for ensuring data preservation and sharing?	PI: Adrian Ranga / senior post-doc involved in the project.
<p>Who bears the end responsibility for updating & implementing this DMP?</p> <p><i>Default response: The PI bears the overall responsibility for updating & implementing this DMP</i></p>	PI: Adrian Ranga