

# MY DATA MANAGEMENT PLAN (KU LEUVEN DMP)

## ADMINISTRATIVE INFORMATION

**Project Name:** Multiorgan-on-chip model for personalized studies of cystic fibrosis (CF) pathophysiology

**Principal Investigator / Researcher:** Xavier Casadevall i Solvas

**Institution:** KU Leuven

## SECTION 1. DATA DESCRIPTION

What data will you collect or create? Fill out the table below and/or describe.

Type of data	Format	Volume	How created?
observational, experimental, reference data,...	e.g. textual, numerical, multimedia docx, pdf, jpg	e.g 200MB, 1GB	Microsoft Word, observations, photos taken on site, ...
Microscopy Images	.tif	1TB	Fluorescent and Confocal microscopy of Extracellular matrix and surrounding cells inside microfluidic chips
Microscopy movies	.avi	1TB	Fluorescent and Brightfield microscopy videos of cell development and cell-cell interactions inside microfluidic chips
Microfluidic chip designs	.dwg	1GB	Using CAD software
Protocols	.txt	1GB	Description of experimental Protocols and experimental results; literature studies
Observational numerical data	.xls	1GB	Measurements of cell localization, motility, cell type, viability, ECM position, and diverse quantitative numerical analyses
Control codes	.exe/ .mat	100MB	Using Python, Matlab, ImageJ and C++

Do you intend to reuse existing data?

No

**Do you use personal data (i.e. all data possibly identifying an individual)?**

No

## **SECTION 2. METADATA AND DOCUMENTATION**

**Describe the documentation that will be created for the data. This section deals with the way in which you will document how the dataset was created and subsequently processed.**

1) Protocols (containing info about both materials - setting, parameters, set-up, ... - and methods), the research progress and obtained data, what they represent and how they were generated, will be collected in an electronic notebook (eLABJournal, Bio-ITech). Here, folders are provided for all subtasks of the project. In each folder, a new file will be made for each experiment, named with the date and subject, and including information on the persons involved as well as version tracking. Each experimental file will contain a section on the objective, protocol, results (a description of results and observations rather than all raw and analysed data) and conclusions. For each experiment, all raw and analysed data files will be stored in a folder on the shared server, using the same hierarchical folder structure as the electronic labnotebook. By using the same structure on the server and in the electronic labnotebook, contextual information on the experimentally obtained data can be easily searched and used by a secondary analyst via the electronic notebook.

2) A physical sample inventory will be stored in freezers and a file with sample details will be saved on the shared server.

**Describe the metadata for the data. This section deals with metadata: information contained in your dataset that adds structure to the research data.**

No uniform metadata standard is available for all different aspects and disciplines of this project. Therefore, we will create a uniform system ourselves to enhance the use of secondary data. As mentioned above, we will use the electronic labnotebook (eLABJournal, Bio-ITech) in which a number of predetermined topics have to be described for each experiment (objective, protocol, results and conclusion). The electronic labnotebook facilitates searching for particular metadata through a search engine. By mimicking the folder structure of the electronic labnotebook in the serverbased folder with the experimental data, linking of the metadata to the actual data will be facilitated.

## **SECTION 3. ETHICAL, LEGAL AND PRIVACY ISSUES**

**Are there any ethical issues concerning the creation and/or use of the data?**

*Question not answered*

**Did you consider all issues about copyrights and IPR?**

No

**Are the collected data considered to be “data containing personal information” and are all the requirements about the collection of these data met?**

No

## **SECTION 4. DATA STORAGE AND BACKUP DURING THE RESEARCH**

**How and where will the data be stored during research?**

The time-stamped digital data will be stored in a project folder on the shared drive (J:) of KU Leuven. The time-stamped digital metadata will be stored on the server of the electronic labnotebook (eLABJournal, Bio-ITech), and .pdf exports will be made on a weekly basis to be saved on the shared drive (J:). The folder will be open for the members participating in this FWO project and is secured and backed-up by the ICTS service of KU Leuven. Copies can be made and kept on personal devices. An additional back up will be stored on the shared drive (K:) of KU Leuven and will be updated on a yearly basis.

**Which back-up procedures are in place?**

The digital data will be stored on the university's central servers with automatic daily back-up procedures.

**Describe the data security procedures and who has access to the data.**

The network drive for the FWO-SB project folder and the large volume storage folder are secured by the ICTS service of KU Leuven with a mirror copy. Only other lab members will have access to the shared folder. Unauthorized persons do not have access to this system.

## **SECTION 5. DATA SELECTION AND PRESERVATION AFTER THE RESEARCH**

**What is the long-term preservation plan for these dataset(s)?**

All data obtained during this FWO project will be retained for the expected 5 year period. KU Leuven provides multiple options for (long term) data storage. Type 1 server backend storage with mirror backup for the FWO-SB project folder will cost € 270 per TB per year. The estimated maximal cost for the 4-year project would therefore be € 1080. Large datasets that do not require frequent access can be stored on a separate server for large volume storage, costing € 113,84 per TB per year. The estimated maximal cost for the 4-year project would therefore be € 455,36 if this type of data storage is required. All costs will be covered by the project budget.

**Which data will have long time value for the research and will be preserved?**

- 1) The digital data will be stored on the university's central servers (with automatic backup procedures) for at least 5 years, conform the KU Leuven RDM policy.
- 2) The physical data will be stored in freezers in the labs of the collaborators for up to 5 years after the project.
- 3) The accompanying metadata will be stored in the electronic lab notebook (eLABJournal, Bio-ITech).

## SECTION 6. DATA SHARING

**Are there any restrictions for sharing the data?**

No

**If there are no restrictions, which mechanisms will be in place to assure that the data are discoverable, accessible and intelligible?**

NA

**How will you share the data?**

Results will be shared via scientific publications. Relevant digital data will be published and made available after the end of the project. Data with valuable IP will be protected prior to publication. We will comply with open access regulations of the FWO.

**With whom will the data be shared?**

All digital data will be stored and be available for lab members using a shared network drive and large volume storage provided by the KU Leuven. In addition, the relevant data will be made available to external people upon request by mail.

## SECTION 7. RESPONSIBILITIES AND RESOURCES

**Who is responsible for Data Management during the project? This will be the person who might receive questions on the data management aspects of the research project.**

The PhD students who will work on this FWO project will be responsible for the data collection, documentation and metadata. Supervisors will manage the data storage facilities

The PhD students who will work on this FWO project will be responsible to store the data on the appropriate accommodation provided by KU Leuven. The ICTS service of KU Leuven is responsible for the back-up of the network drives at KU Leuven. The folders will be managed by the supervisors.

The PIs will be responsible for the data preservation and eventual reuse of obtained data.

The PIs bear the end responsibility of updating & implementing this DMP.

**Which additional resources are needed for the execution of the Data Management Plan?**

Cost of the large volume storage will be € 128,39 per TB and year. We anticipate that we will need 2 TB for 5 years to keep the essential data available. This will amount to € 1229,90 and will be covered by the project's budget.

**Did you read the KU Leuven Research Data Management Policy? (find the link to the policy in the guidance).**

Yes

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