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06/14/2023

EXAMPLE DATA MANAGEMENT AND SHARING PLAN
(in compliance with SF-424 Forms H)

EXAMPLE FOR FLOW CYTOMETRY DATA

Commented [JB1]: *These example DMS Plans are provided for educational purposes to assist applicants with developing Plans but are not intended to be used as templates and **their use does not guarantee approval by NIH. Do not copy/paste this Plan without modifying it to reflect the types of data that are expected to be generated through your project.***

Note that the example DMS Plans may reflect additional expectations established by NIH or specific NIH Institutes, Centers, or Offices that go beyond the DMS Policy. Applicants will need to ensure that their Plan reflects any additional, applicable expectations (including from NIH policies, ICO policies, or as stated in the FOA).

In addition, these examples may reflect resources or policies that are in place at other institutions but that are not necessarily available at the University of Iowa. If needed, investigators can contact Research Data Services (lib-data@uiowa.edu) if they have questions regarding how to best complete their DMS Plan.

ELEMENT 1: DATA TYPE

A. Types and amount of scientific data expected to be generated in the project:

The proposed research will generate raw flow cytometry standard (.FCS) files and compensated/unmixed data files from biological samples prepared from cervical lymph nodes and spleens of 160 C57BL/6J mice, resulting in approximately 0.1 GB of data for each sample (~32GB total). In addition, for each sample we expect to generate 0.1GB of data that has been analyzed using gating strategies or computer algorithms to generate dimensionally reduced plots.

B. Scientific data that will be preserved and shared, and the rationale for doing so:

Flow cytometry data that are necessary to validate the research outcomes and publications will be made publicly available and will include raw FCS files, compensated/unmixed data files, and data that has been analyzed using gating strategies or computer algorithms to generate dimensionally reduced plots. Raw data files are needed to show the data in its original uncompensated/unmixed form (i.e. before implementation of any data algorithms). Data presented using gating strategies/algorithms on compensated/unmixed data is needed to enable other researchers to reproduce our findings.

C. Metadata, other relevant data, and associated documentation:

Raw FSC files contain all metadata generated from the instrument used and can be viewed in either the original acquisition software or in the appropriate analysis software (FlowJo, FCS Express etc.) This includes instrument settings, compensation/unmixing values, and date and time of acquisition. Protocols and details regarding sample preparation, instrumentation, and gating analysis will be made available in an accompanying plain text README document following MIFlowCyt publication standards.

ELEMENT 2: RELATED TOOLS, SOFTWARE, AND/OR CODE

Data collection will be done using DiVa v8.0.1, SpectroFlo v3.0.1 or BioPlex 6.1 on a Becton Dickenson, Cytek, or BioRad instrument, respectively. Data analysis will be done using DiVa v8.0.1 (Becton, Dickinson & Company), SpectroFlo v3.0.1 (Cytek), ModFIT 4.1 LT (Verity software house), FlowJo v10.8.1 (Becton, Dickinson & Company), or FCS Express (De Novo Software) software, which are available for a fee from the indicated companies.

ELEMENT 3: STANDARDS

Information about our research process, including the details of our analysis pipeline will be maintained contemporaneously, using paper and electronic lab notebooks, and readme files. This information will be accessible to all members of the research team and will be transcribed to text files or other open formats when necessary for sharing alongside our data.

Our flow cytometry data will be structured and described using the MIFlowCyt standards, which have been widely adopted in the flow cytometry community. This includes information about the experiment (purpose, keywords, quality control measures, experiment variables), samples (description of sample and materials, fluorescent reagents, treatment, source), data analysis (FCS data files, compensation and other transformations, gating details), and instrument details (make, model, user-adjusteable components, customized configurations).

ELEMENT 4: DATA PRESERVATION, ACCESS, DISTRIBUTION AND ASSOCIATED TIMELINES

A. Repository where scientific data and metadata will be archived:

Data and associated metadata will be publicly available via the FlowRepository database, a public, online resource of annotated flow cytometry datasets .

B. How scientific data will be findable and identifiable:

The FlowRepository database provides access to raw, analyzed data with accompanying metadata and persistent identifier in the form of a repository ID (e.g., FR-FCM-xxxx). The FlowRepository provides long-term access and is supported by the International Society for Advancement of Cytometry (ISAC) and hosted by Carnegie Melon University.

C. When and how long the scientific data will be made available:

Data will be made available at the time of associated publication or at the end of the performance period, whichever comes first. Data will be preserved and accessible for the lifetime of the FlowRepository database, which has been in existence since 2011 and is funded by ISAC and powered by the Cytobank engine, which was specifically extended for the purposes of creating the FlowRepository database.

ELEMENT 5: ACCESS, DISTRIBUTION, OR REUSE CONSIDERATIONS

A. Factors affecting subsequent access, distribution, or reuse of scientific data:

The FlowRepository database is a public online resource of annotated flow cytometry datasets, in particular those associated with peer-reviewed publications.

B. Whether access to scientific data will be controlled
The flow cytometry data will be made publicly available to all users through the FlowRepository database.

C. Protections for privacy, rights, and confidentiality of human research participants
Not applicable

ELEMENT 6: OVERSIGHT OF DATA MANAGEMENT AND SHARING

The PI of the proposal, Wolf Yrtemotyc, PhD, will make the plan available to all personnel involved in the project. The PI will be responsible for ensuring faithful adherence to the DMS Plan and revising the plan annually, as the research project evolves.