EXAMPLE Data Management and Sharing Plan for Non-Human Subjects Research

Acknowledgement: This document was created by the Research Data Service at the University of Illinois at Urbana-Champaign (UIUC) to provide an example Data Management and Sharing Plan ("Plan") for an NIH proposal. We loosely based this Plan off a DMP for NSF-BIO "Profiling Chromatin Dynamics in Response to Pathogen Attack in *Zea mays*" by Maxwell McReynolds at the Iowa State University, who kindly released their DMP for reuse. We have modified this plan to reflect the requirements of NIH and resources at UIUC. **This example is provided for illustrative purposes only since all Plans submitted to NIH must reflect the specific research project proposed.** See more information here: https://go.illinois.edu/newnih

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Project Title: Profiling Chromatin Dynamics in Response to Pathogen Attack in *Zea mays*

1. Data Types

Types include data collected from mass spectrometry (MS) analysis as well as derived data from subsequent analyses. MS data will be available in RAW format as this is the output form the XCalibur software associated with the instrument. Processed MS data will be stored as TXT and PDF files.

There will also be prototypical molecular analysis-based data comprised of PCR analysis gels, western immuno-blotting, and co-immunoprecipitation image files. Images detailing a quantitative pathogen-disease infection assay will be used for phenotyping screens of candidate maize mutant plants. While some images will be saved as SCN files for use with BioRad instruments, the majority of image files will be stored in the TIFF format to allow for high resolution image analysis in a wider variety of processing software. Both raw image files and processed image files will be saved to allow for verification of proper image processing.

2. Related Tools, Software and/or Code

Raw MS data will be processed using MaxQuant software developed by the MaxQuant institute. Molecular biology data will be visualized on a BioRad ChemiDoc XRS gel/membrane system. Data will be shared in formats that allow for others to open and view the data without a need for specialized tools or software (see Standards below).

3. Standards

TXT files make up most of the output files and readily allow for data parsing via a variety of user-friendly graphical user interface-based software as well as command line tools. Likewise, the PDF and TIFF files do not require access to proprietary software to open. During the project, metadata describing the data will be the form of Readme files (also TXT format) and distributed in the same directory folders as the data. A standard naming convention will be used, such researcher initials, a code for analysis method, and date of the analysis in the ISO 8601 format (YYYY-MM-DD). These conventions will be periodically reviewed to ensure they fit the needs of the project as it progresses.

4. Data Preservation, Access, and Associated Timelines

Data that supports the conclusions of the project published in peer-reviewed scientific journals will be made publicly available at the time of publication. In the absence of an appropriate disciplinary repository, we will use the University of Illinois Urbana-Champaign's institutional data repository, Illinois Data Bank. The Illinois Data Bank provides metadata, persistent identifiers (i.e., DOIs), professional curation, and long-term access. The Illinois Data Bank commits toa minimum retention period of five years and curates all data with the aim of ensuring that the data aredeposited in such a way (e.g. with adequate documentation, open formats) that datasets are useful wellbeyond the minimum retention period. Any reports, presentations, manuscripts, and other documents that record research outputs generated under this project may also be deposited in IDEALS, the Illinois Digital Environment for Access to Learning and Scholarship. Both repositories are optimized for their respective content types and support robust indexing and stable access.

We expect no embargo periods will be required for IP or publisher reasons; if any arise, we will consult with the NIH program officer.

5. Access, Distribution, or Reuse Considerations

During the project period, access to the data will be restricted to researchers directly working on the project. Short term storage will either utilize the departmental infrastructure managed by IT Professionals or we will utilize U of I Box, which is cloud storage vetted and licensed by the University of Illinois.

At the time of peer reviewed publication, the data that underlies research findings will be distributed as planned in Section 4 above, with be no restrictions placed on access. At this time, we expect that all research findings will be published via peer review, and the data required to validate those findings will have been made available.

6. Oversight of Data Management and Sharing

Primary responsibility for data management will be shared by the PI and the lead researcher generating the data. The lead researcher will also be responsible for monitoring and adherence to the data management and sharing plan, with periodic review by the PI. Any changes to the plan will be discussed with the PI.