Plan Overview

A Data Management Plan created using DMPTool

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Title: REU Site: A Multidisciplinary Research Experience in Engineered Bioactive Interfaces and Devices

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REU Site: A Multidisciplinary Research Experience in Engineered Bioactive Interfaces and Devices

The data generated from this project will be of two types. Each REU student will generate experimental data specific to his/her research project related to Engineered Bioactive Interfaces and Devices. In addition, both quantitative and qualitative data will be generated that assesses the outcomes of the REU program. The assessment data will result from surveys completed at the end of each year of the Program and information collected from the participants after they have completed the program regarding presentations, publications, other research activities and plans after graduation. Those participants who attend graduate school will also be tracked during their graduate studies to assess their success in their perspective graduate programs.

Experimental research data collected by REU students will be stored in the native format of the collecting instrumentation used in the experiments. In addition, the data will be exported in either Excel, Tif, or ASCII format, so that the data can be reused more widely. Data analysis will be primary performed in Excel, Unscrambler, ImageJ, and Minitab. All files contain a page identifier code, searchable through Windows text search software, which links each file to the relevant notebook page which contains the experimental details related to that dataset. All data that is compiled into a manuscript for peer review will be compiled into a localized aggregate folder for easy tracking back from the figures in publication to the raw data. Assessment data will be stored in a folder in Word format. Compiled assessment results will be stored in Excel or Word.

The primary path of result dissemination from research projects will be via publication in journals chosen by the research advisors. Examples include *Advanced Functional Materials, Acta Biomaterialia, Biomaterials, Biomacromolecules, Langmuir,* and the *Journal of Biomedical Materials Research Parts A and B*. Links to the manuscripts will be provided on the REU website. The Digital Object Identifier (DOI) will be given for each published manuscript, in the event that the URL location changes. Results will also be disseminated via presentations at regional, national and international scientific meetings. Research papers and presentations will be deposited in the University of Kentucky Libraries institutional repository, UKnowledge [http://uknowledge.uky.edu].

In the event the data is linked to intellectual property, data will be made available only after an invention disclosure or provisional patent is filed. All data in this case will be subject to University of Kentucky policy governing intellectual property.

Compiled results from assessment (without participants' names) will be available to NSF through annual reports. In addition, the same results will be disseminated via presentations at regional and national meetings focusing on education issues.

NSF will be allowed to use the data for purposes of assessing the REU Programs. No restrictions will apply. Other individuals involved with STEM education will be interested.

With regards to long-term and archival storage and maintenance of data, original lab notebooks will be stored in the primary lab, with completed notebooks housed in the office of the advisors. All electronic data including assessment data will be stored on a College of Engineering Share network drive, which is mirrored and routinely backed up. Data will be stored beyond the 3 year minimum required by the National Science Foundation with long-term archiving in the University of Kentucky Campus Repository, which is a capability currently being established. The repository, is designed around an Open Archival Information System (OAIS) reference model and will meet all standards to be considered a trusted digital repository. This repository uses micro-services architecture and will take advantage of open source tools to insure that the data deposited in the repository will migrate forward over time.