Data Management Plan

The following is the Data Management Plan for the proposal “Rewiring Enhancer-Binding Proteins to Develop Biosensors for Monitoring Metabolite Flux” submitted to the NSF.

Types of data
The data generated from the work described in this proposal will consist of nucleotide and protein sequences, fluorometry data for gene expression, bacterial growth data, plasmids, graphs, reconstructed images, photographs, movies, hand recorded observations, etc. These data will be in both raw and processed forms and will include relevant statistical analyses. Data will consist primarily of bacterial growth data and gene expression from cells grown in control and test conditions as described in the body of the Project Description of the proposal. These data will be collected using instruments and methods described in the proposal and will include datasets that have been generated from commonly accepted data acquisition software, with essential metadata presented as headers in the relevant electronic files, or included along with the indexed laboratory notebook narrative. In addition, data will be generated regarding C-STEP fellows and retention in a university setting as well as tracking their entry into technical positions related to the science generated by the proposed project.

Records of results will be labeled and stored as has hard copy, digitized images, and electronic files. In some cases, observations of bacterial physiology, viability or phenotype will be retained in hand written or electronic notation that will be dated and labeled in laboratory notebooks.

The data produced by these experiments will provide a look at the responses of EBP based biosensors in different bacterial hosts through changes in media and growth conditions as defined in the proposal. These results will be of interest to the synthetic biology community and especially to those who study metabolic engineering of bacteria for biomanufacturing of industrially relevant compounds.

Archiving and retention of data
Original data notebooks will be retained in a secure location in the PI’s laboratory with electronic data backed up on the ESF server whenever the nature of the data allows for archiving.

Data will be retained at least three years beyond the award period, as required by NSF. In the event that discoveries or inventions are made in direct connection with this data, access will be granted upon request once appropriate invention disclosures and/or provisional patent filings are made. Key data relevant to the discovery will be preserved until all issues of intellectual property are resolved.

Physical samples generated will be stored at 4 °C and -20 °C short term and for longer-term will be stored at -80 °C in an ultralow freezer.

Access to data and data sharing practices and policies
If requested, data will be made available for sharing to qualified parties by the PI, so long as the request does not compromise intellectual property interests, interfere with publication, invade subject privacy, betray confidentiality, or precede archiving of the data. Data to be shared will include standards and notations needed to interpret the data following commonly accepted practices in the field (e.g. ENCODE and MGED Society Microarray Data Standards). Data will be available for access and sharing in a reasonable time period, normally no longer than two years after its acquisition.
Management for data and samples generated by the proposed research that comprise parts of intellectual property will be handled by the Technology Transfer office of the Research Foundation of SUNY. These properties may be transferred to individuals or universities dependent on non-disclosure and/or materials transfer agreements, or licensing agreements with the Research Foundation of SUNY and SUNY-ESF.

**Dissemination of data**
Typical routes of data dissemination will be through peer-reviewed journal articles and seminars or poster presentations at local, national, or international meetings. In addition, annual and final project reports to NSF will summarize these findings.