

## **Data Management Plan**

Processed and interpreted data from the proposed project in this proposal will be made available to the scientific community through publication in peer-reviewed journals. We will take advantage of the ability to include supplemental data in the form of tables and graphics to include a larger amount of processed data with these publications.

Unprocessed (raw) data that may be of interest to the community will be made available by request via email or by downloads from the PI's research websites hosted by the Department of Chemistry and Biochemistry at Brigham Young University.

The staff of the Department of Chemistry and Biochemistry at Brigham Young University includes computer specialists who have the responsibility to manage the computer network, including servers and data storage. At the present time the Department of Chemistry and Biochemistry maintains a server farm of industry standard servers running Red Hat Enterprise Linux connected to redundant data arrays.

Our servers and data storage are protected from unauthorized access by firewalls and user authentication that meets or exceeds industry standards. A test is run three times a year to verify that our network and servers are properly patched and hardened against all known vulnerabilities.

At the present time the department has enough capacity to host the proposed research and provide for long-term storage of all data collected. Data storage is redundant and backed up nightly. Backups are stored in a separate location from the servers. Once a month a full backup is stored offsite in specially constructed vaults built into a granite mountain. This storage location provides an environmentally controlled facility ideal for the storage of records. All research data and records stored on the department's network will be maintained for as long as they are of continuing value to the researchers and project collaborators.

All data stored on the department network is collected and stored using approved/appropriate file and metadata formats. Over time, data may need to be transformed out of obsolete formats to ensure persistence. Every year the department's IT office reviews existing formats and makes recommendations to the department computer committee on newer or alternate versions. If there is sufficient risk of obsolescence the computer committee along with the IT office will notify the Project Managers or the Department Chair of the need to migrate data to a new format. Data format upgrades may result. In no case will the original data be lost until approval has been granted from all stakeholders for the destruction of data.