**Data Management Plan**

**Collaborative Research: The SuperCDMS SNOLAB Experiment**

The SuperCDMS Collaboration consists of ~100 scientists from 23 institutions in 3 countries. The SuperCDMS Collaboration Council is a decision-making body within SuperCDMS composed of SuperCDMS Collaboration members. The council sets the data management policy for the collaboration. All of the data produced from this proposal falls under the purview of the SuperCDMS Collaboration.

*Expected Data Types:* This proposal will generate digital data from four facilities (SNOLAB, CUTE, NEXUS, and TUNL) which will generally fall into one of three categories: detector-performance data, calibration/background data, and science data.

*Data Formats and Management:* The three categories above are each comprised of raw data produced by the SuperCDMS data acquisition system and may consist of ionization and phonon waveform traces, various veto signals, as well as environmental data such as cryogenic-system data and run-time data (e.g., trigger rates and detector state). These raw data are stored in binary files and SQL databases. Real-time processing with a limited number of algorithms and preliminary calibrations is first done at the experimental facility. These data are used to monitor the stability of the experiment and check the quality of the incoming data in real time. The raw data is then transferred to FNAL or SLAC for longer-term storage and for processing. Each of the three categories of data will be analyzed and publications will result. The three categories produce final data sets with slightly different character:

* Detector-performance analysis will typically produce:
  + **Input data**: information on the stimuli the detector system is subjected to (e.g. LED current for “flashing” LEDs).
  + **Response data**: information on the response of the detector to a specified input (e.g. phonon power during LED “flashing”).
  + **Detector specifics**: parameters of the operating detectors relevant to the performance measurements (e.g. QET size/shape).
* Calibration/background analysis will typically produce:
  + **Candidate data**: information from the cryogenic detectors (e.g. charge and phonon energy) about the events passing all selection criteria.
  + **Ancillary data**: information from secondary detectors (e.g. coincidence tagging detectors) which assists in the event selection criteria or provides complimentary information about candidate data.
  + **Data set live time:** measurements of the “on” time of the detector system.
  + **Source strength:** strengths of sources used for the measurements.
* Science analysis will typically produce:
  + **Candidate data**: information from the cryogenic detectors (e.g. charge and phonon energy) about the events passing all selection criteria.
  + **Exposures and efficiencies**: final WIMP (or other applicable “signal” event) efficiency for each detector as a function of energy, after applying all selection criteria, and exposures for each detector.
  + **Nuclear recoil energy scale**: parameters used to calculate the recoil energy of the events.

*Data Products and Releases:* The final data used in SuperCDMS science publications (described above in the “science data” category) are made publicly available at the time of publication or shortly thereafter. A document with instructions and detailed descriptions of the data release (including any quality cuts applied, efficiencies, exposures and nuclear energy scale) is provided for each data release. An email address at which the collaboration can be contacted regarding any questions about the release is also provided in the documentation.

All data releases are publicly available on the collaboration website:

http://cdms.berkeley.edu/data\_releases.html

Final data from other categories are released at the discretion of the SuperCDMS Collaboration. The collaboration will make reasonable attempts to release this data after results are published and will be responsive to specific requests. It is the intent of the SuperCDMS collaboration to make public on the [Radiopurity.org](http://radiopurity.org/) web site any radioactive assay measurements made by the collaboration. Posting may be delayed if assay results are considered to be an important part of an upcoming conference presentation or publication. In that case, the measurement result can be informally communicated to requestors with the stipulation that it not be attributed to SuperCDMS until it is officially posted.

*Serving Data to the Community:* While the SuperCDMS collaboration is not planning to release raw or processed data to the community, SuperCDMS will provide data from all finished science analyses alongside the specific publication (as described above). The final datasets used in publications are typically much smaller in size and will not require special software tools provided by the SuperCDMS Collaboration to analyze. The decision to not provide all data to the community was made due to cost benefit considerations. SuperCDMS does not have the resources within the collaboration to provide an easy-to-use dataset, along with analysis tools. Additional resources would need to be invested to accomplish this task, which the collaboration feels would be better spent elsewhere.

*Archiving of Data:* Data collected at the experimental facility are stored at 2 separate facilities (underground science data: SLAC and FNAL, other data: Berkeley and Stanford) on RAID disk arrays to ensure safe archival.