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# CERTAIN STEM

*A Data management plan created using the DMPTool*

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## **Data generated by the project**

The following is the plan we have developed to maintain the integrity, security, access and organization of the data collection and storage during the course of the proposed research project.

**Data description:** The data that will be collected for this project will be a combination of qualitative and quantitative information gathered from human subjects. A variety of cognitive, affective, and developmental data will be collected using a combination of extant instruments, newly developed instruments, interviews, observations, and internet correspondence.

**Metadata:** The metadata we are likely to use will be extracted from the 3 states' offices of education which may include accessing publically available data such as aggregate student tracking system data and therefore, will be stripped of identifiers prior to our access and use.

**Existing data:** We will rely on state and federal government data as well as data from organizations such as Change the Equation, for STEM education and workforce data.

**Data organization:** For the project Louis Nadelson (PI), Kate Muir-Welsh (CO-PI) and Donna Llewellyn (CO-PI) will be responsible for managing the data collection, maintaining the storage of the data, and assuring it is secure. Data will be named according to the source of the data, the nature of the data, and the date the data was collected. This is close to the procedure that the researchers currently use in conducting their research. The data will be stored on password protected office computers and their personal portable USB storage devices. Paper versions of data will be stored in PI/CO-PI office in their locked file cabinets. The procedures they use are in compliance with the Utah State University of Sponsored Projects Office of Research Compliance and acceptable for satisfying the oversight by the campus Institutional Review Board.

**Quality Assurance:** All data will be collected and maintained to assure continuity and integrity of the information. We will follow the protocols submitted with our IRB applications and adhere to the standards consistent with quality research.

**Responsibility:** PI - Louis Nadelson, Co-PI Kate Muir-Welsh, and Co-PI Donna Llewellyn will all be involved in the collection of data, each taking responsibility for data management in the research project. Our external evaluators will be responsible for collecting the evaluation data for the program, will do so under the Utah State IRB oversight with cooperation from University of Wyoming and Boise State University, thus, each state will maintain responsibility for managing their data.

**Audience:** – We will use the data we collect to draft manuscripts and reports which will be shared at the annual NSF conferences (regional and national), AERA, NARST, NSTA, NCTM, ASEE, and the associated (or related) peer review publications.

**Period of data retention**

**Data format and dissemination**

**Data storage and preservation of access**

**Additional possible data management requirements**