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CAREER: Innovation for Inclusion: Transforming Engineering through Scalable Accessibility

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Data Management Plan

Roles and Responsibilities: The Principal Investigator will be responsible for implementing the data management plan and ensuring Institutional Review Board (IRB) compliance. Adherence to data management plans will be discussed at project meetings and with USU IRB personnel. Project procedures will be reviewed and approved by the USU IRB.

Expected Data: I will collect the following types of data for all participants (i.e., students, faculty, administrators): interview audio and transcripts; recruitment survey responses; survey responses; observational field notes and artifacts. Interviews will be conducted via Zoom and stored as an audio recording with accompanying transcripts. All qualitative and quantitative surveys will be conducted via USU Qualtrics Survey membership.

Data Storage: Interview data will be transcribed, stored, and analyzed on the USU server, which is encrypted, password-protected, and continuously backed up. All survey, field notes, and artifact data will be stored and analyzed on the USU server. Any paper backup copies of qualitative and quantitative data will be kept in a locked filing cabinet in PI McCall's office at USU in the Department of Engineering Education, College of Engineering, Room 225. The office itself also has a lock, which is engaged whenever the investigator is not present. De-identified data analysis documents will also be stored using Box cloud storage in compliance with USU IRB data storage policy.

Data Transportation: Per USU IRB policy, we will use secure Box cloud storage to transport the data. We will not store personally identifiable data on the cloud as a long-term solution.

Period of Data Retention: Data will remain accessible to IRB approved research personnel during the project and for 5 years following the conclusion of the project to facilitate dissemination of research results. Data will be archived for a period of 5 years following the release of publicly accessible data, subject to compliance with IRB protocols.

Data Formats and Metadata: The audio (.mp3/.mp4) interview files will be transcribed and saved as text files (.doc/.docx). Generated field notes will be saved as text files (.doc/.docx) and photos and screen shots of generated artifacts will be saved as image files (.img/.jpeg). Survey data will be transferred to plain text (.txt) or Excel (.xls/.xlsx) for analysis. Metadata will be collected and stored alongside other project data and will be added to annual reports. If digitized, this data will also be kept on an encrypted, password-protected, institutional server, otherwise it will be kept in a locked filing cabinet in PI McCall's office.

Data Dissemination: De-identified interview transcript, survey data, and observational and artifact data will be disseminated through journal and conference papers and will be available to the public upon request. No raw data from interviews, surveys, or observations will be shared, in order to protect participants in accordance with the IRB.

Access and Sharing: Because the data generated from this protocol are confidential human subjects data, all data will be de-identified or aggregated prior to sharing to protect participant confidentiality. Upon request and subsequent approval, data will be sent to other researchers in digital form with all identifying information removed. For qualitative data, a coding system in the form of a generic numbering scheme in combination with pseudonyms will be used to identify participants in data files available to other researchers. Should individual data remain identifiable when linked to an institution (or any other geographical characteristic), the PIs may remove such identifiers from the project archive to remain in compliance with IRB guidelines.

Individuals who wish to be approved and given access to the original data set must satisfy the requirements of the USU Institutional Review Board and any other appropriate IRB offices to ensure the confidentiality of data collected from human subjects. The investigator reserves the right to not share the data until the period of the grant is complete or they have had the opportunity to publish their results.

Archiving and Preservation of Access: All data transcribed/converted to electronic format will be stored for 5 years following the conclusion of the award period. Following this phase, data will be archived at USU using a secure server. De-identified written and recorded interview and survey data will be available to the public upon request. All information submitted in annual reports will also be made available. PI McCall will manage the project data archive.