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## Plan Overview

*A Data Management Plan created using DMPTool*

**Title:** The Virgin Islands Partnership to Increase Participation and Engagement through Linked, Informal, Nurturing Experiences in STEM (V.I. PIPELINES)

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# The Virgin Islands Partnership to Increase Participation and Engagement through Linked, Informal, Nurturing Experiences in STEM (V.I. PIPELINES)

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## Data generated by the project

The Data Management Plan should describe the types of data, samples, physical collections, software, curriculum materials, or other materials generated by your project. Any data collection required by the program announcement should be incorporated into the proposal's Data Management Plan. For example, the management of assessment, evaluation, or monitoring data required for all projects within a given program should be addressed in the data management plan. Describe your plan for managing the data.

The initial phase of this project (year-1) will consist of both a formal data collection activity and a broader planning project. Data will be collected from both aspects of the project.

Year-1

Baseline Student STEM-level Data Collection:

Through assessments, questionnaires, and other instruments, we will collect data on the initial interest levels, engagement levels, and proficiency levels of students in various fields of STEM. These data will be collected by educators at the schools that are part of the VI-PIPELINES collaborative and also will be collected by Etelman Observatory at the outset of new programs that will be developed as a result of this project (new summer STEM enrichment summer camps, educator training workshops, and adult education courses).

Throughout the school year, students will be assessed to track changes in their interest levels, engagement levels, and proficiency levels in STEM. These assessments will also track what informal education activities each student has participated in and when. We initially anticipate semi-annual evaluations to be administered to the entire student body of our participating schools (approximately 1400 students).

Planning Data:

Year-1 of this project will also involve several meetings between the new collaborating entities of the VI-PIPELINES program (initially 3 schools and 6 informal education institutes). These meetings will begin prior to funding with informal calls between the PI and each participant to discuss logistics with each particular entity as we move towards the start of the program. At the start of the funded program, we will hold a planning workshop (at Etelman Observatory) where we will formalize a timeline, collaborations between entities, and assessment plans and timelines. This kickoff workshop will also focus on a needs assessment for the region. Notes from these informal meetings will be kept by the PI and converted into PDF documents. Notes and outcomes from the initial planning workshop will also be recorded and converted into PDF archives.

Year-2

Continuing Student STEM data:

In year-2 (and beyond) we anticipate continuing semi-annual tracking of student informal education activity participation as well as interest levels, engagement levels, and proficiency levels in STEM.

Continuing Planning, Adaptation

In year-2, we will hold the 2nd annual VI-PIPELINES workshop and where we will review successes and challenges from the first year of collaborative exhibits and programming and make any changes deemed necessary to best reach the stakeholder community. Notes from these informal meetings will be kept by the PI and converted into PDF documents. Notes and outcomes from the initial planning workshop will also be recorded and converted into PDF archives.

## Period of data retention

**EHR is committed to timely and rapid data distribution. However, it recognizes that types of data can vary widely and that acceptable norms also vary by scientific discipline. It is strongly committed, however, to the underlying principle of timely access, and applicants should address how this will be met in their Data Management Plan.**

We anticipate the initial data representing the current level of interest, engagement, and proficiency of USVI students in STEM to become the foundation of a continuing longitudinal study that we anticipate continuing well beyond the 2-year timeframe of this proposal. Thus we will archive all student data, school data, IEI data, workshop notes, and any additional data products that are developed through this project. We will archive the data and backup the archive regularly to at least 2 locations. The initial archive for the data will be on the Etelman Observatory data-server which is regularly backed up and maintained for data integrity.

## Data format and dissemination

**The Data Management Plan should describe data formats, media, and dissemination approaches that will be used to make data and metadata available to others. Policies for public access and sharing should be described, including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements. Research centers and major partnerships with industry or other user communities must also address how data are to be shared and managed with partners, center members, and other major stakeholders. Data on EHR projects involving human subjects should be made available to the public subject to constraints imposed by IRB decisions. Other data, such as software, publications, and curricula, should be made available subject to intellectual property rights.**

**Data Collection Formats**

Data will be collected stored in standard Microsoft Office (Word, Excel, and PowerPoint) files and also converted to PDF format . Data will be originally created (whenever possible) directly in MS Office formats. In cases where more flexible data collection formats are required (e.g., pen and paper surveys or informal education participants and students) these data will be transcribed to MS Office format as soon as possible and checked for data quality and consistency with the original collection instrument. Data will then be archived in MS Office and PDF format.

**Data Dissemination**

The educational and research data resulting from this project will be made available for use by both educators and researchers as soon as completed and no later than the conclusion of the project. Data will be made available both as MS Office and PDF format files and will be made freely available for download (student identity details will be removed in any cases where such details are originally submitted with data) by the research community. Data will be accessible through freely accessible web-pages describing the VI-PIPELINES project that will be maintained on the University of the Virgin Islands Physics website ([www.uvi.edu](http://www.uvi.edu)).

## Data storage and preservation of access

**The Data Management Plan should describe physical and cyber resources and facilities that will be used for the effective preservation and storage of research data. These can include third party facilities and repositories.**

**Data Backups**

To ensure ongoing and long-term security of the data generated by this project, a complete copy of materials will be generated and stored independently on the primary data server at the Etelman Observatory as well as on regular backups (generated at the Etelman Observatory) every 6 months. The PI will also maintain an independent backup of the data on his personal machine, updated at least every 6 months.

**Archiving and Preservation**

On completion of this 2-year Exploratory Pathways project, the PI, in consultation with the schools and IEs of the VI-PIPELINES collaboration, will identify which project materials are of probable long-term interest for archiving and preservation. Materials will be anonymized or de-identified as appropriate, converted to searchable pdf document format, and stored locally on the UVI web server (for use by the research community) and on the Etelman Observatory data archive (for redundancy) as well as on the PIs personal computer.

Due to the intended long-term use of these baseline data, and the anticipated on-going nature of this longitudinal study, extreme care will be taken to maintain data integrity and archiving capabilities.

**Additional possible data management requirements**

**More stringent data management requirements may be specified in particular NSF solicitations or result from local policies and best practices at the PI's home institution. Additional requirements will be specified in the program solicitation and award conditions. Principal Investigators to be supported by such programs must discuss how they will meet these additional requirements in their Data Management Plans.**

**Privacy of Project Student Participants**

An informed consent process will include language to ensure that all participants understand that these data are being generated for the purpose of sharing with the research community. Data from this project are unlikely to pose a risk for disclosure; however, to further protect participants, data will be de-identified before long-term storage.

In the case of data to be collected regarding underage participants (students), a consent form will be distributed to families of students before data from those students will be used.