**Pomona College ITS**

**Research Technology and Data Management Support**

[draft]

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**If you are using this template for a grant please let ITS know so that we can review and help customize for your specific project. We would appreciate it if you sent us your final version as submitted.**

[This document provides a summary of the technology support provided by ITS for external grant proposals. Also, an outline of a Data Management Plan with specific ITS support or recommendations is provided. Text in square brackets is explanatory text not intended to be in the grant proposal.]

**Facilities, Equipment, and Other Resources**

Pomona College’s Information Technology Services (ITS) department fully supports research technology. The college’s network is connected to Internet2 and is on a main backbone in Southern California. Data throughput is available with two 10 GB/s connections. The college’s data center is in a secure facility with recently modernized firewall, backup power, fire protection, and cooling systems. The data center houses physical servers, virtual servers, and data servers used in research. All servers in the data center are redundant or backed up at off-site locations.

Pomona College also provides access to a Research Computing Infrastructure (RCI) also known as High Performance Computing (HPC) beginning in the summer of 2018. The HPC infrastructure will have 4 physical servers with a variety of hardware for a total of 160 physical CPU (Central Processing Unit) cores, 2.3 TB RAM, 45,000 CUDA (Compute Unified Device Architecture) cores, 10 TB of Flash-based storage. Volta GPUs (Graphical Processing Units) will support deep learning and inference projects. The majority of the software tools will allow to submit compute jobs from a local workstation to the HPC environment. ITS Research Group will provide support and host regular Technology Workshops on the various technologies used in HPC.

Faculty and staff are provided with personal computers on a four-year refresh cycle. Several software packages for general purposes and research purposes are provided including those for statistics and mathematical analyses, data visualization and qualitative analyses, surveys, custom applications, and collaboration and communication. Specialized research computers, instrumentation, and software packages are also supported based on type, expertise, and resources available.

Access to Pomona College network, secure servers, and software is allowed with an active directory (AD) database and secure protocols. A virtual private network allows access to the secure network when users are not on a college network. Non-college collaborators can access the network with approved sponsored accounts.

Two fulltime staff positions support research technology, and several other positions support research as part of their responsibilities. Tier 1 support is provided with in-house staff and student consultants. Tier 2 and Tier 3 is also provided in-house or with outside consultants based on the specific support needed. Advanced Linux and Windows server administration is provided in-house.

ITS at Pomona College can also provide support in quoting, selecting the appropriate hardware specifications, and purchasing the necessary equipment, likely with a considerable bulk discount as we have established relationships with most hardware and software vendors. Pomona ITS can assist with inventory, tagging, updates, patching, and technical support for the hardware and software involved.

Another area of expertise that ITS can potentially assist in is the development of the software, design, hosting, distribution and all associated processes like continuous development and best practices and research in existing technologies **in [put your department here]** and other disciplines, as well as training for the individuals involved in the software development or the final use of the software.

**Data Management Plans**

[Data management plans are highly specific to discipline. Below are the main categories for most disciplines or subject areas.]

**Data Owners**

Project Title:

Data Owners:

Data Managers:

Other Contributors and Roles:

**Data Types, Structure, and Metadata**

[Describe the data types and structures here. For example, the data could be in a CSV file (comma separated values, or spreadsheet format), proprietary data structures such as Matlab .m, a directory or folder of image files such as PNG, text files such as .txt or .docx, or PDFs. The data structures are how the data is constructed and organized, for example in a relational database, a spreadsheet, folders and files, or other general format.]

[Describe any metadata that will be collected or attached to the data items. This can be instrument settings, image capture method, archival information, and others. There are many predefined metadata standards according to subject area.]

**Data Acquisition, Integrity, and Quality**

[Describe data is acquired, stored, and backed-up. Data could be acquired from original sources, instrumentation, interviews, or other methods. Data integrity and quality is preserved by managing where it is stored, how it is checked to see if it is not corrupted, and how it is accessed for analyses.]

**Privacy and Sensitive Data Issues**

[If data contains personal information, or is of a secret nature, describe how data will be secured (for example, through encryption), how it is anonymized if necessary, and how it is accessed. If there are specific governmental regulations that apply, list those.]

**Rights Management**

[Describe who owns the rights to the data, especially it belongs to a party besides the researchers. If required to be made public, state the how long data might be kept in private, that is, for a period of time prior to publication. Describe who the data should be cited by third-parties if allowed, and how much time the rights to the data would last.]

**Dissemination Policy**

[Describe how the data would be made available publicly and under what circumstances. Be as specific as possible. If an outside archive for the data, such as the Genome Sequence Archive, will be used, describe its purpose and responsibilities for maintaining the data. If only a portion of the data is to be disseminated, describe that portion of the data.]