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Plant Scale Characterization Using Unmanned Aerial Systems Point Cloud and Reflectance Maps for Modeling Vine and Soil/Cover Crop Water Use

Alfonso F. Torres-Rua
Utah State University, alfonso.torres@usu.edu

Data Management Plan

Our project will generate and compile a significant amount of data, spanning a wide range of data types and formats. Proper and efficient data management is essential to achieve our research and broader impact goals. Thus, our data management plan purposely involves utilizing existing data management available at USU and already in use with collaborators at USDA and E&J Gallo.
We will follow four core principles: (1) preserve data from corruption and loss; (2) transform raw observational data into fully tagged and annotated datasets that can be readily integrated for analysis; and (3) ensure that all geographic, tabular, and image data, along with derivative works and models, are curated and shared with the scientific community for further use upon authorization from USDA project counterparts.

The research proposed uses already collected existing data over a broad range of disciplines, including data on ground sensors, aerial high resolution from UAS, and mathematical model codes. A high-level plan for the generation, validation, and delivery of data products follows:

Data Acquisition: We will establish a common file structure on a shared cloud resource. All project data (from computational analyses, instrument-based measurements, field notes, etc.) will be posted to the shared cloud resource within 30 days of collection, complete with metadata.

Metadata: We will use current USDA metadata protocols in place as our default and will extend these metadata requirements as needed for each data type.

Access and Archival: We will distribute data publicly, without cost, once a corresponding paper has been accepted for publication, upon authorization from USDA and E&J Gallo collaborators. Data will be directly distributed through DigitalCommons@USU.

Educational Materials and Assessments: The project web site will also host and make publicly available the educational materials produced, including but not limited to (1) technical reports, and (2) peer reviewed publications.

Responsibilities and Implementation: The project leadership team (Principal and co-Investigators) will have the responsibility to train the graduate student, to ensure they comply with this data management plan.