

# Using SAS to enhance data sharing across REDCap projects: Reducing errors, streamlining management, and improving quality

## Paper Outline

- Describe use of REDCap as a tool for electronic data collection and data management
  - Describe limitations and challenges of built-in manual import and export functions
  - Define API capabilities of REDCap as a means to address limitations and enhance data quality
  - Describe integration of REDCap and SAS to provide a streamlined way to export, manage, and share selected data elements and files
  
- Describe utility of using API parameters to streamline data management and sharing
  - API parameters are text files that are securely sent to REDCap to permit data export, import, and other data queries using HTTP protocols sent directly from SAS to REDCap, eliminating the need for additional programming or software
  - Allow users to customize exported and imported data files to particular needs
  - Allow multiple project team members, including those with limited data management or SAS knowledge, to perform data management activities
  - API provides a means of securely sharing sensitive, confidential, or otherwise protected data without the need for additional file sharing protocols (such as FTP sites)
  
- Describe the process of creating API parameters
  - Step 1: Create export parameter to retrieve data from source REDCap database
    - Describe customizations including:
      - Exporting selected records or variables meeting certain criteria
      - Practices to enhance the documentation of export files for quality assurance purposes
  - Step 2: Import data into SAS for data management
    - Describe customizations including:
      - Selecting only unique records not already present in the target REDCap database using nested API parameters
      - Creating distinct files for import into multiple database based on selected criteria or project needs
  - Step 3: Create import parameter to send data to target REDCap database
    - Describe customizations including:
      - Automating import to run daily at specific time of day
  - Propose ways to make the SAS program accessible to multiple project team members with limited SAS knowledge that maintains the integrity of the source code
  
- Provide a case example of how this SAS program is being used to successfully share data across project teams for two prospective research studies and possible enhancements and modifications