**2019 SAS Programming Final Project**

You have been provided with a folder that contains several sub-folders and files. I expect you to use the folder structure as provided in the file given to you. The files include a “raw” SAS database, CRF annotated for this “raw” database, and a Statistical Analysis Plan (SAP). You will use these to produce the following:

1: Four SDTM domains:

* DM/SUPPDM (demographics)
* EX/SUPPEX (exposure)
* AE/SUPPAE (adverse events)
* VS/SUPPVS (vital signs)

Annotate the blank CRF provided for the new domain structures (hand-written and scanned is fine)

2: Four Analysis datasets:

* ADSL
* ADAE
* ADEX
* ADVS

Create define files for each analysis dataset using the template Excel spreadsheet provided. If there are analysis variables that require data that is not included in the four SDTM domains you created, use the raw data to create the variables you need. Be sure to indicate the dataset source of the variable when adding source comments / derivation rules in the define file (e.g. SUMMARY.DEPARTCD or ADSL.SEX).

3: Generate Listings:

* Listing 2 – Demographic and Baseline Characteristics
* Listing 5 – PROD Administration
* Listing 6 – Adverse Events
* Listing 8.1 – Vital Signs (Blood Pressure and Heart Rate) and Oxygen Saturation
* Listing 8.2 – Vital Signs (Respiration Rate and Temperature)

4: Generate Tables:

* Table 2 – Demographic and Baseline Characteristics
* Table 6 – Exposure to PROD
* Table 7.2.1 – Adverse Events by Body System
* Table 7.2.2 – Adverse Events by Body System Related to PROD
* Tables 9.1 through 9.4 – Vital Signs

All tables and listings should be created as RTF files, in either “end of text” or “in-text” format.

You may use any programs/macros from any class as a starting point for your programs. You *must* use macro in some capacity in *at least two* of your programs. This can be simple substitution (like %let lastfoot=This is the last footnote on every table;) or calling macros from the library (such as using %mdates to convert character dates to numeric). I expect your programs to follow good programming practices – use comments, meaningful indentation, etc. – I should be able to read and understand your code easily.

**You need to turn in a zip file** via email with the entire Final Project folder, including all SAS datasets, define files, programs, **LOG and checking output files (LST or HTML) for each program**, and table/listing RTF files. For each submitted zip file (file extension must be \*.zip), *I must be able to open it* so I suggest sending it a day or two early in case there are issues.

Projects are due on **Monday, December 16th**. This means that I must have a zip file, *that I can open*, in my email inbox **no later than 5 pm** on December 16th. You have more than enough time to complete the project if you work diligently between now and December 16th. ***If you do not submit a complete final project, you will not be issued a certificate of completion for this program***. Submissions made after December 16th will not be accepted so do not procrastinate!