**MM401 Communicating Mathematics and Statistics**

**Project Plan**

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**Title of Project: The Drugs that are leading to the drug mortality rate in Scotland.**

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**Project Summary**

We will estimate the temporal trends of drug-induced mortality occurrences in Scotland from 2008 to 2020. We ask 1) which drug has the highest increasing rate in terms of human mortality during the past 12 years? 2) whether the illegal drugs (e.g., Codeine, Heroin, etc) have caused more mortality than legal drugs (e.g., Prescription, Alcohol, etc)? To address these questions, we will use various regression methods to estimate and compare the temporal trends of different drugs.

**Aim and Objectives**

We aim to estimate and compare the temporal trends of drug-induced mortality occurrences among different drugs in Scotland from 2008 to 2020. Our objectives are:

1. to construct linear or nonlinear statistical models to fit the data of drug-induced mortality in Scotland.
2. to investigate which model is the best one describing the data trends.
3. to compare and draw inferences among the coefficients (e.g., slopes) of the regression model outputs.

**Proposed Plan of Work**

The following steps will be undertaken.

* Literature review
* Data organization and exploration
* Construct the regression models and run the analyses
* Interpret model outputs and draw inferences in line with the current understanding.
* Outline potential strengths and limitations of the model.
* Report writing.

**Suggested References**

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