P8130 Biostatistical Methods I – Fall 2023

Final Project

Due: December 17, 2023 at 5:00pm

Guidelines for Project Submission

This group project must be submitted through Courseworks (by all group members) before the deadline. Email submissions WILL NOT be accepted and will receive a score of 0 for all group members!

All graphs, output, and interpretations must be included in ONE PDF file, otherwise it will not be graded. In a separate attachment, you must also submit your R/Rmd code used in your project.

General Writing Instructions

Your project should not exceed 5 double-spaced pages using 11 or 12-point font, EXCLUDING figures and tables, references, appendix, that can be placed at the end of the main text. Be selective in your output and visual displays!

Your brief report should be structured as a publishable research article containing the following sections:

- Abstract (condenses a brief introduction, brief description of methods, and main results into a one-paragraph summary)
- Introduction (brief context and background of the problem)
- Methods (data description and statistical methods)
- Results
- Conclusions/Discussion
- A brief summary on each group member's contribution (method, data analysis, writing, etc).

Your findings should be written as for an informed (but non-statistical) audience (NO FORMULAS!). Each figure and table should be of publishable quality and well notated, I.e., labeled and/or captioned.

Projects

There are two options (see attached description and data files), from which you can pick one to work on. Since Project 2 may involve non-linear regression not in the scope of this course, there will be 5 (10%) extra points put on its method part. That means, if you choose Project 2, you will get some bonus; see **Grading Instruction** section for more details. Nevertheless, to cope with Project 2, you will need to learn some knowledge about non-linear regression extended from our class by yourself (which is not that hard as I could tell). After all, learning and using outside-class knowledge (like those fancier statistical learning methods) in your projects is permitted and appreciated to certain degrees. But you need to ensure that you understand, use, and interpret them correctly.

Grading Instructions

This is a group project and collaborations within your group are essential and provide great practice for your career.

Academic dishonesty or lack of contribution to the team effort

will be penalized and reflected in individual grades.

The rubric of grading is listed as below:

	Total Points	Specific criterions
Method and interpretation	50 for Project 1 55 for Project 2	Understand the background and task of the project; Preprocess of the data; Proper choice and decision on models' assumption, specification, diagnostic, selection, comparison, and validation; Strategies and reasons of your designs and decisions should be included. Correct and informative interpretation of the results.
Writing and result display	50	Well-organized report with professional writing and structuring; Proper introduction of the method with helpful and informative explanations; Display the data and analysis results with tables and plots Be concise and avoid displaying redundant or useless results; Do not exceed the page limit.