Statistical Inference Project - Semester 1, 2017

- **INSTRUCTIONS**:

  1. In the course outline, I mentioned that if the number of students makes giving presentations prohibitive, I will change the presentations to a written report/project. Based on the current numbers in the course, you will consider a written project.

  2. The project is based on the scientific paper your group decides to review. Please see the first lecture slides to see where you might find an appropriate paper. The paper must be approved by the lecturer (Dr. Anton Westveld).

  3. Work as a team of 3 - 4 students. A penalty will apply to having fewer than 3 members or more than 4 members, unless pre-approved by the lecturer. Please inform the lecturer of your team by the beginning of **Week 9**. As teams are formed, I will place on the Wattle site along with their paper choice.

  4. This project must be typed (not handwritten). You may wish to use R markdown for the project, however it is not required.

  5. The project due date is listed on the Wattle (Turnitin) site.

  6. Collate all elements of your document (various sections of text, computer output, complete reference list, computer code and/or appendix, etc.) into a single scientific report of approximately 10 pages excluding cover page, reference list, and appendices. Use no less than a 11pt font for the main body of your document.

  7. Upload the project as a pdf file through Wattle using Turnitin. **Elect ONE project team member to upload the project through their Wattle account.**

  8. You should test drive the Turnitin submission process by submitting a bogus document WELL BEFORE the due date.

  9. A failed or late submission due to your difficulties with Turnitin will be treated as any late submission to which the standard ANU late penalty applies.

  10. Refer to the Turnitin help page for

      (a) how to overwrite an earlier submission;
      (b) general troubleshooting.

  11. Do NOT include any team member's name anywhere in your report.

  12. The cover page of your report must include the following info: each team member's ANU ID, course code, and academic major.

  13. Although verbal discussions with other teams and/or your tutor(s) and/or your lecturer are encouraged, the contents of your team's report must be produced by your team alone and must comply with **academic integrity policies** given at `http://www.anu.edu.au/students/program-administration/assessments-exams/academic-honesty-plagiarismandhttps://www.legislation.gov.au/Details/F2015L02025`.

  14. **Proper referencing, including websites, must be used.**

  15. **Have fun with the exploration!**

The project consists of two parts:

1. A written report of your team's chosen paper. The report should be based on the scientific process discussed in class (and of course the overall material):

   - What is the scientific question?
   - How were the data collected? What is the structure of the data?
   - How does the statistical model work to combine an answer to the scientific question and the structure of the data?
   - What is the estimation procedure?
   - What type of computation is involved?
   - Was any type of model checking considered? (If not, then explaining [and perhaps doing] some model checking would be a good extension.)
   - What are the results of the study?
   - What are the limitations of the study?

2. Additionally you should conduct and and write-up the results of some type of "extension" based on the paper. The extension may be conducted in a number of ways, a few of which are:

   - Applying the method to the same data set as outlined in the scientific paper and coding the estimation procedure (if the author has not provided code [this is likely the most difficult to do]);
   - Applying the method to a different data set based on code that the author has made available;
   - Simplifying the problem and considering other estimation procedures and their consequences (while the "true" problem may consist of non-iid data, what can you do if the data were iid? [for example]);
   - Considering visualisations of the data and/or results from an analysis.