Title here

XX YOUR NAME HERE XX [*]

Department of Mathematics and Statistics, Amherst College

November 9, 2022

Abstract

The text of your abstract. 200 or fewer words. It is intended to provide an overview of your paper and may be similar to your synopsis. Note that an abstract can only include one paragraph in this format. You may want to put your synopsis here as you work to refer to it easily.

Keywords: 3 to 6 keywords, that do not appear in the title

---

1   Introduction

This template will be used for you to submit your final project. You'll need to install the *rticles* package, make sure you have the agsm.bst file and bibliography.bib file, and the gfx folder and figure file in order to compile. If you make your own bibliography.bib file later, that's fine - change the name above to match your file name. You'll want the setup for the file to look the same in your repo as in the class repo, and then compile to asa_article when you knit. You should change the name of the file to something other than "test" though. Remember that if something goes wrong with the file, you can always look back at the class repo for the original files and their structure.

This template was adapted from the template Prof. Horton provided Stat 495 in Fall 2021, used with permission.

2   More on the template

This template demonstrates some of the basic LaTeX commands and syntax you'll need to know to use the `rticles` package to generate a readable report using R Markdown. Markdown allows various formatting and you can find formatting cheatsheets or guides online to assist as well. Here's an example with bullets and some advice:

- I would encourage you to look closely at this file and explore the various parts and pieces.
- I would suggest that you format your Rmd file so that you have only one sentence per line.
- It makes it *much* easier to see changes in your GitHub commits.

3   Verifications

This section will be just long enough to illustrate what a full page of text looks like, for margins and spacing.

Note that we can refer to sections (e.g., this is section 3, while the previous section was section 2).

Note that we should refer to work using the BibTeX system. Here we can reference papers by Campbell & Austin (2002) and Schubert et al. (2013) through inline citations (see the `bibliography.bib` file for the reference database).

More work that is relevant can also be cited in a traditional fashion (Chi et al. 1981, Galyardt (2014),Galyardt (2012)).

Note that you can capitalize proper nouns in citations (Campbell & Austin 2002) (again, see `bibliography.bib`).

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. **With this spacing we have 30 lines per page.**

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog.

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog.

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog.

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The

quick brown fox jumped over the lazy dog.

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog.

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog.

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog.

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog.

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The

Table 1: This is a sample table caption that should interpret the table!

boro	count
BRONX	1903
BROOKLYN	5294
MANHATTAN	8340
Missing	6
QUEENS	4789
STATEN ISLAND	802

quick brown fox jumped over the lazy dog.

4 Examples

Lots of things can be done in this template.

```
Violations %>%
  select(dba, boro) %>%
  unique() %>%
  group_by(boro) %>%
  summarize(count = n(), .groups = "drop") %>%
  knitr::kable(
    caption = "This is a sample table caption that should interpret the table!")
```

Table 1 displays the number of dba's per borough.

```
Violations %>%
  select(dba, boro, inspection_date, score) %>%
  unique() %>%
  group_by(boro) %>%
  summarize(
    count = n(),
```
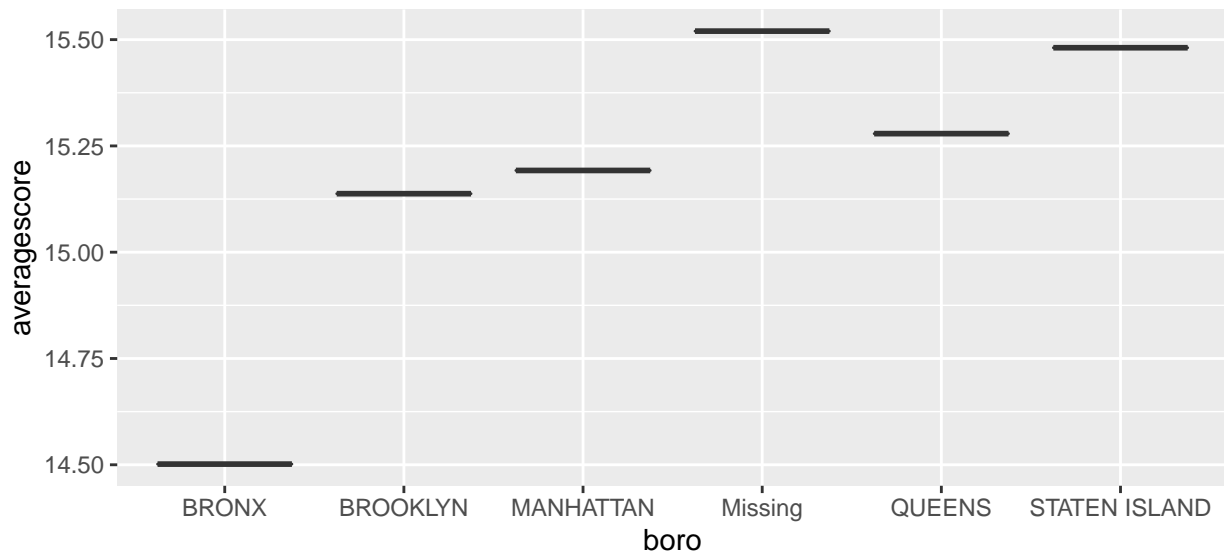
Figure 1: This is a sample figure caption that should interpret the figure!

```
    averagescore = mean(score, na.rm = TRUE),
    .groups = "drop"
) %>%
ggplot(aes(x = boro, y = averagescore)) +
geom_boxplot()
```

Figure 1 displays the average inspection score by borough.

Figure 2 displays a campus map.

The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog.
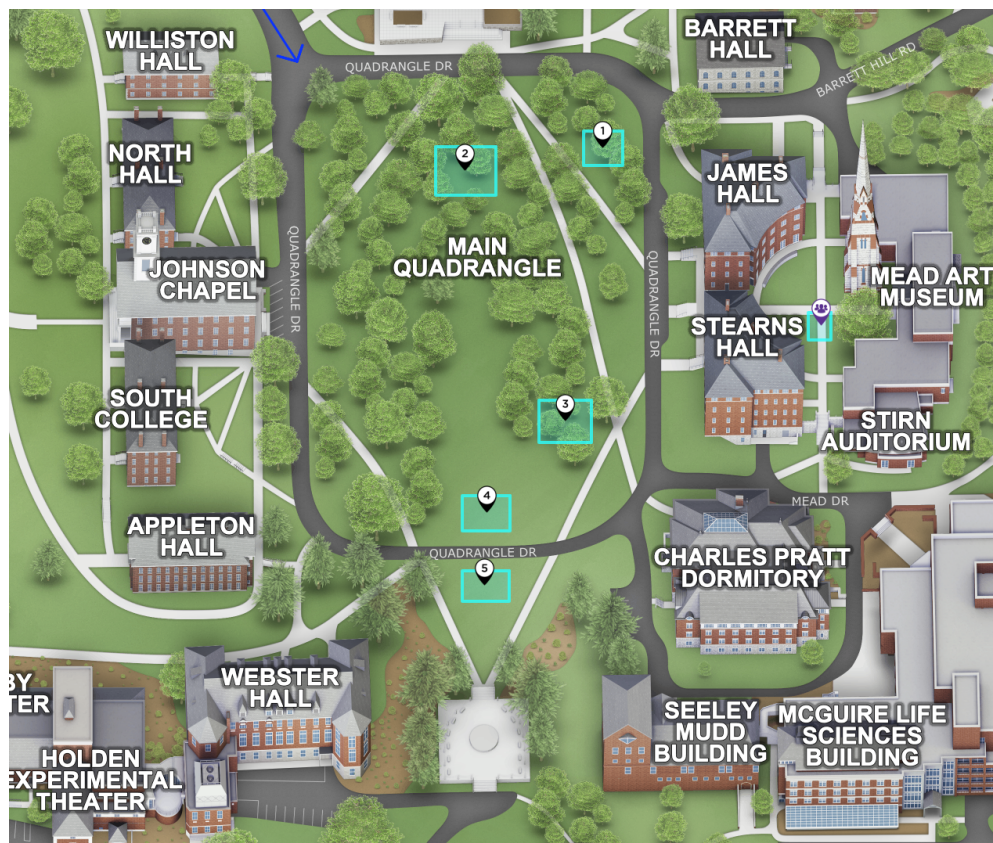
The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog.

Figure 2: XX another sample figure caption

5 Your Choice of Structure

You are responsible for choosing the structure you want for the report, i.e. what sections and their names. Here are some examples that you could adapt, as appropriate. These are just examples - the first has more sections, some of which may make more sense as sub-sections of others. I'm just trying to give you examples. You don't have to have a conclusion or an introduction, etc. You'll need to find what works for you.

5.1 Example 1

- Introduction
- Background
- Topic X (Main exposition section)
- Applications in Literature
- Application to Data (your data)
- Conclusion

5.2 Example 2

- Introduction (including any relevant Background)
- Topic X (exposition and examples)
- Simulation

References

Campbell, J. I. & Austin, S. (2002), 'Use of Python and R to assess effects of response time deadlines on adults' strategy choices for simple addition', *Memory & Cognition* **30**(6), 988–994.

Chi, M. T., Feltovich, P. J. & Glaser, R. (1981), 'Categorization and representation of physics problems by experts and novices', *Cognitive Science* **5**(2), 121–152.

Galyardt, A. (2012), Mixed Membership Distributions with Applications to Modeling Mul-

tiple Strategy Usage, PhD thesis, Carnegie Mellon University, Pittsburgh, PA 15213.

URL: *https://nas.edu/envisioningds*

Galyardt, A. (2014), Interpreting mixed membership models: Implications of erosheva's representation theorem, *in* E. M. Airoldi, D. Blei, E. Erosheva & S. E. Fienberg, eds, 'Handbook of Mixed Membership Models in R', Chapman and Hall.

Schubert, C. C., Denmark, T. K., Crandall, B., Grome, A. & Pappas, J. (2013), 'Characterizing novice-expert differences in macrocognition: an exploratory study of cognitive work in the emergency department', *Annals of Emergency Medicine* **61**(1), 96–109.