Article Name

2022-09-27

This is the abstract.  
1. what is the study about?  
2. what problem does it address?  
3. how did you conduct the research?  
4. what were the main findings?  
5. why is it important?

# Introduction

Setting **global options** that apply to every chunk in the file.

```{r setup, include=FALSE}  
knitr::opts\_chunk$set(echo = FALSE, message = FALSE, warning = FALSE)  
  
library(here)  
library(tidyverse)  
library(kableExtra)  
  
# displaying 20000 instead of 2 x 10^4  
options(scipen = 999)  
```

```{r}  
# import data  
data <- read\_csv(here("data", "process", "newdata.csv"))  
```

Ordered list items:

1. general information  
1. research gap  
1. research aim

The output is:

1. general information
2. research gap
3. research aim

# Materials and methods

## Adding figures

Add Fig. here.

```{r boxplot, fig.cap='A boxplot', out.height="50%", fig.align='center'}  
knitr::include\_graphics(here::here("results", "figures", "boxplot.pdf"))  
```

![Figure 2.1: A boxplot](data:application/pdf;base64,)

Figure 2.1: A boxplot

If the caption is too long (Fig. ), use [text-reference](https://bookdown.org/yihui/rmarkdown/bookdown-markdown.html#text-references).

(ref:longcaption) This is a very long caption

```{r 2021, fig.cap='(ref:longcaption', out.width="50%", fig.align='center'}  
knitr::include\_graphics(here::here("results", "pictures", "2021.png"))  
```



Figure 2.2: This is a very long caption

## Adding tables

```{r table1}  
data %>%   
 group\_by(supp) %>%  
 summarise(median = median(len),  
 mean = mean(len)) %>%   
 kable("latex",  
 booktabs = T,  
 col.names = c("Supplement type",   
 "Median",  
 "Mean"),   
 align = "cll",  
 caption = "\\label{tab:cooltable}Mean and Median")  
```

```{r table2}  
para = c("Intercept ($\\beta\_0$)",  
 "Parameter 1 ($\\beta\_1$)",  
 "Parameter 2 ($\\beta\_2$)",  
 "Hurdle probability ($\\theta$)")  
  
tab <- data.frame(  
 Parameter = para,  
 Estimate = c(1.6, 1.2, 6.2, 0.5),  
 Error = c(0.41, 0.02, 0.09, 0.07),  
 CI = c("[0.698, 2.477]",  
 "[1.123, 1.235]",  
 "[6.051, 6.423]",  
 "[0.353, 0.644]"),  
 Rhat = c(rep("1.00", 4)))  
  
kable(tab,  
 "latex",  
 align = "lcccc",  
 booktabs = TRUE,  
 escape = FALSE,  
 caption = "\\label{tab:mathtable}A table with LaTeX Math symbols")  
```

## Adding equation

1. The \_variable\_ \(x\) and the \_\_function\_\_ \(f(x)\)  
1. The \*variable\* $x$ and the \*\*function\*\* $f(x)$  
1. superscript^2^  
1. NO~2~, NO~3~, PO~4~, NH~4~  
1. 25 µL

The output is:

1. The *variable* and the **function**
2. The *variable* and the **function**
3. superscript2
4. NO2, NO3, PO4, NH4
5. 25 µL

Adding equations using the LaTeX syntax

\[Y|X \sim Bernoulli(p)\]

\begin{equation}  
\label{eq:cutoff}  
p(x) = P(Y = 1|X = x) =   
\left\{  
 \begin{array}{lr}  
 p\_1 = P(Y = 1|X \le cp), & \text{if } x \le cp\\  
 p\_2 = P(Y = 1|X > cp), & \text{if } x > cp  
 \end{array}  
\right.  
\end{equation}

$$

\begin{subequations}  
 \label{eq:model}  
 \begin{align}  
 \label{eq:modela}  
P(y|\theta, \lambda) =   
\left\{  
 \begin{array}{lr}  
 \theta & \text{if } y = 0\\  
 (1 - \theta) \frac{Poisson(y|\lambda)}{1 - PoissonCDF(0|\lambda)}   
 & \text{if } y > 0  
 \end{array}  
\right. \\  
 \label{eq:modelb}  
logit(\theta) = \alpha\_0 + \alpha\_1 \* x\_1 + \alpha\_2 \* x\_2 \\  
 \label{eq:modelc}  
log(\lambda) = \beta\_0 + \beta\_1 \* x\_1 + \beta\_2 \* x\_2 + \nu  
 \end{align}  
\end{subequations}

## Cross-reference

* figure: \ref{fig:label}
* table: \ref{tab:label}
* equation: \ref{eq:label}
* section: \ref{label}

**Note:** only alphanumeric characters (a-z, A-Z, 0-9), -, /, and : are allowed in labels.

1. Fig.\ref{fig:boxplot} and fig.\ref{fig:2021}  
1. Table. \ref{tab:cooltable}  
1. Equation \ref{eq:cutoff}, Eq. \ref{eq:model}, Eq. \ref{eq:modela}  
1. Section \ref{intro} and section \ref{figure}

The output is:

1. Fig. and Fig.
2. Table.
3. Equation , Eq. , Eq.
4. Section and section

## Citation syntax

* @Davis2009: cite directly Davis et al. (2009)
* [@Walls2018]: put citations in parentheses (Walls et al., 2018)
* [@Davis2009; @Walls2018]: cite multiple entries (Davis et al., 2009; Walls et al., 2018)
* [-@Liu2011a]: suppress the mention of the author (2011)

# Results

## Use code inline

The maximum tooth length is `r max(data$len)`.

The maximum tooth length is 33.9.

## Random things

* download .csl file at [Zotero Style Repository](https://www.zotero.org/styles)
* *References* section is created at the end of the document by default. To put *References* section in a specific place (e.g. before Supplementary Materials):

# References  
<div id="refs"></div>  
# Supplementary Materials

* check spelling in rmarkdown: F7
* [word count addin](https://github.com/benmarwick/wordcountaddin)

# Discussion

# Conclusions

# Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

# CRediT authorship contribution statement

**Author One:** Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Visualization, Writing - Original Draft, Writing - review & editing. **Author Two:** Supervision, Project administration, Funding acquisition, Conceptualization, Resources, Writing - Review & Editing. **Author Three, Author Four:** Investigation.

Further information [here](https://www.elsevier.com/authors/policies-and-guidelines/credit-author-statement).

# Acknowledgements

This work was supported by ...

# References

Davis, T.W., Berry, D.L., Boyer, G.L., Gobler, C.J., 2009. The effects of temperature and nutrients on the growth and dynamics of toxic and non-toxic strains of Microcystis during cyanobacteria blooms. Harmful Algae 8, 715–725. <https://doi.org/10.1016/j.hal.2009.02.004>

Liu, X., Lu, X., Chen, Y., 2011. The effects of temperature and nutrient ratios on Microcystis blooms in Lake Taihu, China: An 11-year investigation. Harmful Algae 10, 337–343. <https://doi.org/10.1016/j.hal.2010.12.002>

Walls, J.T., Wyatt, K.H., Doll, J.C., Rubenstein, E.M., Rober, A.R., 2018. Hot and toxic: Temperature regulates microcystin release from cyanobacteria. Science of the Total Environment 610-611, 786–795. <https://doi.org/10.1016/j.scitotenv.2017.08.149>

# Appendix

# Supplementary materials A

## A cool figure

Fig. is in Supplementary materials.



Figure 6.1: A plot in Supplementary Materials

## An awesome table

Table. is in Supplementary materials.

Table 6.1: This table again

|  |  |  |
| --- | --- | --- |
| Supplement type | Median | Mean |
| OJ | 22.7 | 20.663 |
| VC | 16.5 | 16.963 |

# Supplementary materials B

## Some random code

Some random SAS code

PROC MCMC   
 data=Data outpost=Dataoutput   
 nbi=1000000   
 nmc=1000000  
 thin=10  
 seed=1  
 diag=all  
 monitor=(p1 p2 cp I w);

## A green photo

Figure 7.1: A green photo

Figure 7.1: A green photo

# Highlights

Short collection of bullet points: novel results + new methods  
- submitted: separate editable file -> online submission system.  
- file name: 'Highlights'  
- 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point)

# Graphical abstract

Delete eval=FALSE before run the code chunk

# Cover letter

### New submission

Month Day, Year

Dear Dr. AAA,

I am happy to submit my manuscript, **article\_name**, for your consideration at *journal\_name*. This work *did sth interesting*. The main conclusion is that *sth cool*.

All of the authors have read and approved the paper and it has not been published previously nor is it being considered by any other peer-reviewed journal.

The manuscript has also been submitted to bioRxiv as a preprint.

Sincerely,

Author\_name, PhD  
Professor

### Resubmissions

Month Day, Year

Dear Dr. BBB,

I am happy to resubmit my manuscript, **article\_name**, for your reconsideration at *journal\_name*. I am grateful to you and the reviewers who were very encouraging about the content of the manuscript.  
I apologize for taking so long to resubmit.  
Too many things got in the way over the past few months.

All of the authors have read and approved the paper and it has not been published previously nor is it being considered by any other peer-reviewed journal.

The manuscript was previously submitted to bioRxiv as a preprint.

Sincerely,

Author\_name, PhD  
Professor

# Response to reviewers

### Reviewer #1 (Comments for the Author):

**copy the comment of the reviewer here**

We have revised the sentence to the following: "sth you revised"

### Reviewer #2 (Comments for the Author):

**copy the comment of the reviewer here**

Your response here

A great example [here](https://github.com/SchlossLab/Tomkovich_PEG3350_mSphere_2021/blob/master/submission/response_to_reviewers.md).