









# Analysis of Traffic Fatality Records

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## Authors

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- **Justin Rebholz** 
  -  [jrebholz12](#)Department of Civil and Environmental Engineering, University of Illinois
- **Cameron Kimber** 
  -  [ckimber2](#)Department of Civil and Environmental Engineering, University of Illinois
- **Hannah Daggett** 
  -  [hed2](#)Department of Civil and Environmental Engineering, University of Illinois
- **Riley Kelch** 
  -  [rileykelch](#)Department of Civil and Environmental Engineering, University of Illinois

✉ — Correspondence possible via [GitHub Issues](#) or email to Justin Rebholz <rebholz4@illinois.edu>, Cameron Kimber <ckimber2@illinois.edu>, Hannah Daggett <hed2@illinois.edu>, Riley Kelch <rjkelch2@illinois.edu>.

# Abstract

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## Description

The dataset that will be used for this project is the Fatality Analysis Reporting System created by the National Highway Safety Administration. The data will be obtained from the NHTSA's FARS database, which is publicly accessible. The FARS dataset is available in the CSV format and includes 30k+ instances and 70 columns including: location, date, conditions, and nature of the accident. The dataset our team will be analyzing is from 2015-2016.

Link: (<https://www.kaggle.com/datasets/usdot/nhtsa-traffic-fatalities/data> "Traffic Fatalities")

## Plan and Proposal

Using the FARS dataset we aim to understand the trends in traffic fatalities in a given year and what factors are affecting those trends. We will also look at how the different variables play a role in the severity of the accident and identify geographic regions that are more prone to accidents. The trends in traffic fatalities found through this project can be used to inform policy makers and ultimately decrease the number of traffic fatalities.

This manuscript is a template (aka "rootstock") for [Manubot](#), a tool for writing scholarly manuscripts. Use this template as a starting point for your manuscript.

The rest of this document is a full list of formatting elements/features supported by Manubot. Compare the input ( `.md` files in the `/content` directory) to the output you see below.

## Basic formatting

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**Bold text**

**Semi-bold text**

Centered text

Right-aligned text

*Italic text*

Combined *italics* and **bold**

~~Strikethrough~~

1. Ordered list item
2. Ordered list item
  - a. Sub-item
  - b. Sub-item
    - i. Sub-sub-item
3. Ordered list item
  - a. Sub-item

- List item
- List item
- List item

subscript: H<sub>2</sub>O is a liquid

superscript: 2<sup>10</sup> is 1024.

[unicode superscripts](#)<sup>0123456789</sup>

[unicode subscripts](#)<sub>0123456789</sub>

A long paragraph of text. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Putting each sentence on its own line has numerous benefits with regard to [editing](#) and [version control](#).

Line break without starting a new paragraph by putting two spaces at end of line.

## Document organization

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Document section headings:

# Heading 1

## Heading 2

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### Heading 3

#### Heading 4

##### Heading 5

###### Heading 6

**A heading centered on its own printed page**

Horizontal rule:

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Heading 1's are recommended to be reserved for the title of the manuscript.

Heading 2's are recommended for broad sections such as *Abstract*, *Methods*, *Conclusion*, etc.

Heading 3's and Heading 4's are recommended for sub-sections.

## Links

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Bare URL link: <https://manubot.org>

[Long link with lots of words and stuff and junk and bleep and blah and stuff and other stuff and more stuff yeah](#)

[Link with text](#)

[Link with hover text](#)

[Link by reference](#)

## Citations

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Citation by DOI [[1](#)].

Citation by PubMed Central ID [[2](#)].

Citation by PubMed ID [[3](#)].

Citation by Wikidata ID [[4](#)].

Citation by ISBN [[5](#)].

Citation by URL [[6](#)].

Citation by alias [[7](#)].

Multiple citations can be put inside the same set of brackets [[1](#),[5](#),[7](#)]. Manubot plugins provide easier, more convenient visualization of and navigation between citations [[2](#),[3](#),[7](#),[8](#)].

Citation tags (i.e. aliases) can be defined in their own paragraphs using Markdown's reference link syntax:

## Referencing figures, tables, equations

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Figure [1](#)

Figure [2](#)

Figure [3](#)

Figure [4](#)

Table [1](#)

Equation [1](#)

Equation [2](#)

## Quotes and code

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Quoted text

Quoted block of text

Two roads diverged in a wood, and I—  
I took the one less traveled by,  
And that has made all the difference.

Code `in the middle` of normal text, aka `inline code`.

Code block with Python syntax highlighting:

```
from manubot.cite.doi import expand_short_doi

def test_expand_short_doi():
    doi = expand_short_doi("10/c3bp")
    # a string too long to fit within page:
    assert doi == "10.25313/2524-2695-2018-3-vliyanie-enhansera-copia-i-
        insulyatora-gypsy-na-sintez-ernk-modifikatsii-hromatina-i-
        svyazyvanie-insulyatornyh-belkov-vtransfetsirovannyh-geneticheskikh-
        konstruktsiyah"
```

Code block with no syntax highlighting:

```
Exporting HTML manuscript
Exporting DOCX manuscript
Exporting PDF manuscript
```

## Figures

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**Figure 1: A square image at actual size and with a bottom caption.** Loaded from the latest version of image on GitHub.



**Figure 2: An image too wide to fit within page at full size.** Loaded from a specific (hashed) version of the image on GitHub.



**Figure 3: A tall image with a specified height.** Loaded from a specific (hashed) version of the image on GitHub.



**Figure 4: A vector `.svg` image loaded from GitHub.** The parameter `sanitize=true` is necessary to properly load SVGs hosted via GitHub URLs. White background specified to serve as a backdrop for transparent sections of the image. Note that if you want to export to Word ( `.docx` ), you need to download the image and reference it locally (e.g. `content/images/vector.svg` ) instead of using a URL.

## Tables

**Table 1:** A table with a top caption and specified relative column widths.

| <i>Bowling Scores</i> | Jane | John | Alice | Bob |
|-----------------------|------|------|-------|-----|
| Game 1                | 150  | 187  | 210   | 105 |
| Game 2                | 98   | 202  | 197   | 102 |
| Game 3                | 123  | 180  | 238   | 134 |

**Table 2:** A table too wide to fit within page.

|    | Digits 1-33                        | Digits 34-66                      | Digits 67-99                      | Ref.                      |
|----|------------------------------------|-----------------------------------|-----------------------------------|---------------------------|
| pi | 3.14159265358979323846264338327950 | 288419716939937510582097494459230 | 781640628620899862803482534211706 | <a href="#">piday.org</a> |
| e  | 2.71828182845904523536028747135266 | 249775724709369995957496696762772 | 407663035354759457138217852516642 | <a href="#">nasa.gov</a>  |



**Table 3:** A table with merged cells using the `attributes` plugin.

|       | Colors     |                  |
|-------|------------|------------------|
| Size  | Text Color | Background Color |
| big   | blue       | orange           |
| small | black      | white            |

## Equations

A LaTeX equation:

$$\int_0^\infty e^{-x^2} dx = \frac{\sqrt{\pi}}{2}$$

(1)

An equation too long to fit within page:

$$x = a + b + c + d + e + f + g + h + i + j + k + l + m + n + o + p + q + r + s + t + u + v + w + x + y + z + 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9$$

(2)

## Special

**⚠ WARNING** The following features are only supported and intended for `.html` and `.pdf` exports. Journals are not likely to support them, and they may not display correctly when converted to other formats such as `.docx`.

LINK STYLED AS A BUTTON

Adding arbitrary HTML attributes to an element using Pandoc’s attribute syntax:

Manubot Manubot Manubot Manubot Manubot. Manubot Manubot Manubot Manubot. Manubot Manubot Manubot. Manubot Manubot. Manubot.

Adding arbitrary HTML attributes to an element with the Manubot `attributes` plugin (more flexible than Pandoc’s method in terms of which elements you can add attributes to):

Manubot Manubot Manubot Manubot Manubot. Manubot Manubot Manubot Manubot. Manubot Manubot Manubot. Manubot Manubot. Manubot.

Available background colors for text, images, code, banners, etc:

white lightgrey grey darkgrey black lightred lightyellow lightgreen lightblue lightpurple red orange yellow green blue purple

Using the [Font Awesome](#) icon set:

✓ ? ★ 🔔 ⛔ …



### Light Grey Banner

useful for *general information* - [manubot.org](https://manubot.org)



### Blue Banner

useful for *important information* - [manubot.org](https://manubot.org)



### Light Red Banner

useful for *warnings* - [manubot.org](https://manubot.org)

- 1. Sci-Hub provides access to nearly all scholarly literature**  
Daniel S Himmelstein, Ariel Rodriguez Romero, Jacob G Levernier, Thomas Anthony Munro, Stephen Reid McLaughlin, Bastian Greshake Tzovaras, Casey S Greene  
*eLife* (2018-03-01) <https://doi.org/ckcj>  
DOI: [10.7554/elife.32822](https://doi.org/10.7554/elife.32822) · PMID: [29424689](https://pubmed.ncbi.nlm.nih.gov/29424689/) · PMCID: [PMC5832410](https://pubmed.ncbi.nlm.nih.gov/PMC5832410/)
- 2. Reproducibility of computational workflows is automated using continuous analysis**  
Brett K Beaulieu-Jones, Casey S Greene  
*Nature biotechnology* (2017-04) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6103790/>  
DOI: [10.1038/nbt.3780](https://doi.org/10.1038/nbt.3780) · PMID: [28288103](https://pubmed.ncbi.nlm.nih.gov/28288103/) · PMCID: [PMC6103790](https://pubmed.ncbi.nlm.nih.gov/PMC6103790/)
- 3. Bitcoin for the biological literature.**  
Douglas Heaven  
*Nature* (2019-02) <https://www.ncbi.nlm.nih.gov/pubmed/30718888>  
DOI: [10.1038/d41586-019-00447-9](https://doi.org/10.1038/d41586-019-00447-9) · PMID: [30718888](https://pubmed.ncbi.nlm.nih.gov/30718888/)
- 4. Plan S: Accelerating the transition to full and immediate Open Access to scientific publications**  
cOAlition S  
(2018-09-04) <https://www.wikidata.org/wiki/Q56458321>
- 5. Open access**  
Peter Suber  
*MIT Press* (2012)  
ISBN: 9780262517638
- 6. Open collaborative writing with Manubot**  
Daniel S Himmelstein, Vincent Rubinetti, David R Slochower, Dongbo Hu, Venkat S Malladi, Casey S Greene, Anthony Gitter  
*Manubot* (2020-05-25) <https://greenelab.github.io/meta-review/>
- 7. Opportunities and obstacles for deep learning in biology and medicine**  
Travers Ching, Daniel S Himmelstein, Brett K Beaulieu-Jones, Alexandr A Kalinin, Brian T Do, Gregory P Way, Enrico Ferrero, Paul-Michael Agapow, Michael Zietz, Michael M Hoffman, ... Casey S Greene  
*Journal of The Royal Society Interface* (2018-04) <https://doi.org/gddkhn>  
DOI: [10.1098/rsif.2017.0387](https://doi.org/10.1098/rsif.2017.0387) · PMID: [29618526](https://pubmed.ncbi.nlm.nih.gov/29618526/) · PMCID: [PMC5938574](https://pubmed.ncbi.nlm.nih.gov/PMC5938574/)
- 8. Open collaborative writing with Manubot**  
Daniel S Himmelstein, Vincent Rubinetti, David R Slochower, Dongbo Hu, Venkat S Malladi, Casey S Greene, Anthony Gitter

