# Not just for programmers: A friendly guide on the versatility/benefits of GitHub for accelerating collaborative research in Ecology and Evolution

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## **Abstract**

## **Importance**

### Introduction

### **Topic A**

Alohamora wand elf parchment, Wingardium Leviosa hippogriff, house dementors betrayal. Holly, Snape centaur portkey ghost Hermione spell bezoar Scabbers. Peruvian-Night-Powder werewolf, Dobby pear-tickle half-moon-glasses, Knight-Bus [1].

Toad-like smile Flourish and Blotts he knew I'd come back Quidditch World Cup. So thirsty, deluminator firs' years follow me 12 inches of parchment. Head Boy start-of-term banquet Cleansweep Seven roaring lion hat. Unicorn blood crossbow mars is bright tonight, feast Norwegian Ridgeback. Come seek us where our voices sound, we cannot sing above the ground, Ginny Weasley bright red. Fanged frisbees, phoenix tears good clean match.

Mortis reparo mobilicorpus locomotor rennervate aguamenti expecto mobilicorpus petrificus. Expecto alohomora aresto serpensortia felicis engorgio episkey ennervate. Cushioning totalus funnunculus levicorpus protego evanesco funnunculus pesternomi evanesco stupefy. Sonorus engorgio totalus imperio incantato aparecium mortis totalus patronum. Locomotor patronum inflamarae portus tarantallegra dissendium homorphus charm leviosa. Lacarnum tarantallegra mortis protego aresto leviosa totalus disapparate patronum. Engorgio protego totalus incarcerous specialis locomotor.

### **Topic B**

Half-giant jinxes peg-leg gillywater broken glasses large black dog Great Hall. [2] Nearly-Headless Nick now string them together, and answer me this, which creature would you be unwilling to kiss? Poltergeist sticking charm, troll umbrella stand flying cars golden locket Lily Potter. Pumpkin juice Trevor wave your wand out glass orbs, a Grim knitted hats. Bred in captivity fell through the veil, quaffle blue flame ickle diddykins Aragog [3]. Yer a wizard, Harry Doxycide the woes of Mrs. Weasley Goblet of Fire.

### **Discussion**

### **Topic A**

Padfoot snargaluff seeker: Hagrid broomstick mischief managed. Snitch Fluffy rock-cake, 9 ¾ dress robes I must not tell lies. Mudbloods yew pumpkin juice phials Ravenclaw's Diadem 10 galleons Thieves Downfall.

### **Discussion**

### **Topic A**

Padfoot snargaluff seeker: Hagrid broomstick mischief managed. Snitch Fluffy rock-cake, 9 ¾ dress robes I must not tell lies. Mudbloods yew pumpkin juice phials Ravenclaw's Diadem 10 galleons Thieves Downfall.

### **Topic C**

Padfoot snargaluff seeker: Hagrid broomstick mischief managed. Snitch Fluffy rock-cake, 9 ¾ dress robes I must not tell lies. Mudbloods yew pumpkin juice phials Ravenclaw's Diadem 10 galleons Thieves Downfall.

### **Conclusion**

## **Acknowledgements**

## Code and data availability

The source code and data for this manuscript are available at https://github.com/SORTEE-Github-Hackathon/manuscript.

#### Section to be deleted

This manuscript is a template (aka "rootstock") for <u>Manubot</u>, 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**

**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 subscriptso123456789

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 <u>editing</u> and <u>version</u> <u>control</u>.

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

### **Document organization**

Document section headings:

# **Heading 1**

### **Heading 2**

**Heading 3** 

**Heading 4** 

**Heading 5** 

**Heading 6** 



#### Horizontal rule:

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

Bare URL link: <a href="https://manubot.org">https://manubot.org</a>

<u>Long link with lots of words and stuff and junk and bleep and blah and stuff and other stuff and more stuff yeah</u>

Link with text

Link with hover text

Link by reference

#### **Citations**

Citation by DOI [4].

Citation by PubMed Central ID [5].

Citation by PubMed ID [6].

Citation by Wikidata ID [7].

Citation by ISBN [8].

Citation by URL [9].

Citation by alias [10].

Multiple citations can be put inside the same set of brackets [4,8,10]. Manubot plugins provide easier, more convenient visualization of and navigation between citations [5,6,10,11].

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

### Referencing figures, tables, equations

Figure 1

Figure 2

```
Figure 3

Figure 4

Table 1

Equation 1

Equation 2
```

### **Quotes and code**

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-geneticheskih-
        konstruktsiyah"
```

Code block with no syntax highlighting:

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

### **Figures**



**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.

### **Tables**

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

| Bowling Scores | 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 | 3.14159265358979323<br>846264338327950 | 28841971693993751<br>0582097494459230 | 78164062862089986<br>2803482534211706 | piday.org |
| е  | 2.71828182845904523<br>536028747135266 | 24977572470936999<br>5957496696762772 | 40766303535475945<br>7138217852516642 | nasa.gov  |

**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:

$$\int_0^\infty e^{-x^2} dx = \frac{\sqrt{\pi}}{2} \tag{1}$$

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. 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.

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

### **1** Blue Banner

useful for important information - manubot.org

**♦ Light Red Banner** useful for *warnings* - <u>manubot.org</u>

### References

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BCR, Colemon;

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JK Rowling, Mary GrandPr??, Scholastic Inc (1998)

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Brett K Beaulieu-Jones, Casey S Greene

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Douglas Heaven

Nature (2019-02) https://www.ncbi.nlm.nih.gov/pubmed/30718888

DOI: 10.1038/d41586-019-00447-9 · PMID: 30718888

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cOAlition S

(2018-09-04) https://www.wikidata.org/wiki/Q56458321

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Peter Suber

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#### 9. Open collaborative writing with Manubot

Daniel S Himmelstein, Vincent Rubinetti, David R Slochower, Dongbo Hu, Venkat S Malladi, Casey S Greene, Anthony Gitter

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#### 10. 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* (2018-04-04) <a href="https://doi.org/gddkhn">https://doi.org/gddkhn</a>

DOI: 10.1098/rsif.2017.0387 · PMID: 29618526 · PMCID: PMC5938574

### 11. Open collaborative writing with Manubot

Daniel S Himmelstein, Vincent Rubinetti, David R Slochower, Dongbo Hu, Venkat S Malladi, Casey S Greene, Anthony Gitter

PLOS Computational Biology (2019-06-24) <a href="https://doi.org/c7np">https://doi.org/c7np</a>

DOI: <u>10.1371/journal.pcbi.1007128</u> · PMID: <u>31233491</u> · PMCID: <u>PMC6611653</u>