## **Manuscript Title**

This manuscript (<u>permalink</u>) was automatically generated from <u>essink/manubot test@95195ce</u> on May 15, 2020.

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#### **Abstract**

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**

**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 0123456789

#### unicode subscripts 0123456789

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> control.

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** 



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 [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 tag [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

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.
р	011 110	9265358979323 338327950	28841971693993751 0582097494459230	78164062862089986 2803482534211706	piday.org
е		8182845904523 8747135266	24977572470936999 5957496696762772	40766303535475945 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.

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 Manubo

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* - <u>manubot.org</u>

## **1** Blue Banner

useful for important information - manubot.org

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

### **Additional Content**

This section just serves as a test.

$$\alpha = 42$$

To get github-pages working, I just had to unselect and then reselect to use the branch gh-pages in the settings. This fortunately triggered the build of the webpage.

This sentence has been contributed by a collaborator.

Nature article on collaborative writing

Article by TU Hamburg doing the same with gitlab

## PyMotW - Manubot

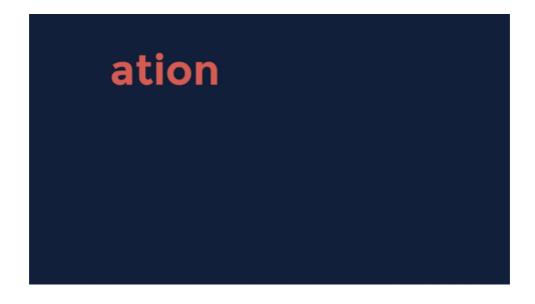
PLOS CB Paper

**Manubot Website** 

**Manubot Github** 

### Aims

- disperse teams of collaborators
  - > 10 authors



- version control
  - transparency
  - better attribution of credit
- automatization
  - build
  - bibliography
  - deploying as webpage

#### **Motivation**

- traditionally publishing manuscripts based on
  - poprietary software (e.g. .docx)<sup>1</sup>
  - offline tools (e.g. Latex )

### **Origin of Manubot**

- open review <u>7</u>
  - many authors bringing different expertise
  - hosted on Github
  - Creative Commons Attribution License (<u>CC BY 4.0</u>)
  - $\quad \circ \ \ \, \text{to support workflow} \rightarrow \textbf{manubot python package} \\$

#### **Comparison to other writing platforms**

Comparison in Table 1

- thoughts
  - o proposing changes really not possible in Overleaf?
  - o characterlevel provenance really not possible in Overleaf?
- main competitor for manubot in our case:

**OVERLEAF** 

#### Workflow

#### Illustration of Workflow

#### **Features**

#### manubot python packages

- Process manuscript content to create outputs for Pandoc consumption.
  - I think it just moves things around and merges .md files
- citations see USAGE.md
  - o pandoc-manubot-cite
  - cite-by-ID <u>Table with examples</u>

#### pandoc filters

• e.g. pandoc-xnos for referencing tables, equations (sections)

#### **Pandoc Markdown**

- citations
- table
- captions
- equations

#### html webpage

- themes → modify aesthetics
- interactive plots or mybinder
- html plugins
  - <u>hypothes.is</u> annotations/comments
- · hosted on github pages

#### **Continuous Publication / Integration**

- Cl of your choice
- default Travis
- Self-Hosted Github Actions Examples

#### **Timestamping**

#### Limitations

- require computational background
- they advise having guidelines on contributions/authorship
  - e.g. 5 commits need to get the co-authorship
- · primary output is html
  - 1. .md ightarrow .html

- 2. .html ightarrow .pdf
- no Latex support yet!
  - of course formulae etc. work via MathJax, but no use of fancy packages (e.g. braket)
  - <u>Issue on Latex output</u>
  - $\circ$  working on  $\mathsf{.md} o \mathsf{.tex}$  via pandoc
    - issue is how to do this properly in CI

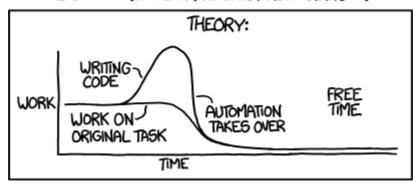
## How to set it up?

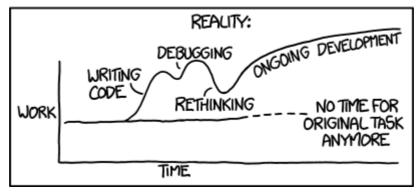
• Manubot rootstock

#### **PyMotW - Manubot**

- manubot
  - Github Actions CI with self-hosted runner
    - use local conda environment
    - sync final .pdf to remarkable :P
- zotero
  - BibORB brain.bib imported
  - collection for manubot manuscript
  - BetterBibtex for Zotero
    - automatized export of collection to csl json with correct key (raw: <key>) that is recognized by manubot
- Atom
  - packages
    - markdown-preview-enhanced for live preview
    - language-pfm for syntax highlighting (Pandoc Flavored Markdown)
    - zotero-citation
  - nice github integration
  - o can use local builds
    - either bash build/build.sh
    - or bash build/autobuild.sh which triggers a run whenever a saved file shows changes → view complete document live in browser
- mathpix
  - snapshot formulae from photo/handwriting/papers and convert to latex
- whenever I start working with this great setup I end up improving the workflow and don't get anything done ...

# "I SPEND A LOT OF TIME ON THIS TASK. I SHOULD WRITE A PROGRAM AUTOMATING IT!"





The sad truth...

# HOW LONG CAN YOU WORK ON MAKING A ROUTINE TASK MORE EFFICIENT BEFORE YOU'RE SPENDING MORE TIME THAN YOU SAVE? (ACROSS FIVE YEARS)

	HOW OFTEN YOU DO THE TASK						
		50/ <sub>DAY</sub>	5/DAY	DAILY	WEEKLY	MONTHLY	YEARLY
	1 SECOND	1 DAY	2 HOURS	30 MINUTES	4 MINUTES	1 MINUTE	5 SECONDS
	5 SECONDS	5 DAYS	12 HOURS	2 HOURS	21 MINUTES	5 MINUTES	25 SECONDS
	30 SECONDS	4 WEEKS	3 DAYS	12 Hours	2 HOURS	30 MINUTES	2 MINUTES
HOW		8 WEEKS	6 DAYS	1 DAY	4 HOURS	1 HOUR	5 MINUTES
Time You	- Palling 11 E 1	9 MONTHS	4 WEEKS	6 DAYS	21 HOURS	5 HOURS	25 MINUTES
SHAVE OFF			6 MONTHS	5 WEEKS	5 DAYS	1 DAY	2 Hours
	1 HOUR		IO MONTHS	2 MONTHS	IO DAYS	2 DAYS	5 HOURS
	6 HOURS				2 монтня	2 WEEKS	1 DAY
	1 DAY					8 WEEKS	5 DAYS

SEE, I'VE GOT A REALLY GOOD SYSTEM:
IF I WANT TO SEND A YOUTUBE VIDEO
TO SOMEONE, I GO TO FILE→SAVE, THEN
IMPORT THE SAVED PAGE INTO WORD. THEN
I GO TO "SHARE THIS DOCUMENT" AND
UNDER "RECIPIENT" I PUT THE EMAIL
OF THIS VIDEO EXTRACTION SERVICE...



I'LL OFTEN ENCOURAGE RELATIVES TO TRY TO SOLVE COMPUTER PROBLEMS THEMSELVES BY TRIAL AND ERROR

HOWEVER, I'VE LEARNED AN IMPORTANT LESSON: IF THEY SAY THEY'VE SOLVED THEIR PROBLEM, NEVER ASK HOW.

#### References

#### 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 · PMID: 29424689 · PMCID: PMC5832410

#### 2. Reproducibility of computational workflows is automated using continuous analysis

Brett K Beaulieu-Jones, Casey S Greene

Nature biotechnology (2017-04) <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6103790/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6103790/</a>

DOI: 10.1038/nbt.3780 · PMID: 28288103 · PMCID: PMC6103790

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Douglas Heaven

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

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#### 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 (2020-01-14) 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

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

PLOS Computational Biology (2019-06-24) https://doi.org/c7np

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

#### 1. At least in the biology community ←