rmarkdown_pdf

Sébastien Renaut

2018-09-06

Contents

Different outputs

- There are six versions of this document:
  - *.Rmd*: The `Rmarkdown` document.
  - *.html*: A Webpage as we saw in the previous section. Follow using this version.
  - *rmarkdown_word_pdf2.html*: A `radix` webpage.
  - *.docx*: A MS Word document.
  - *.tex*: A LaTeX document.
  - *.pdf*: A PDF document.

html document

```
---
title: "rmarkdown_pdf"
author: "Sébastien Renaut"
date: '2018-09-06'
output:
  html_document:
    toc: yes
---
```

Microsoft Word

```
---
title: "rmarkdown_docx"
author: "Sébastien Renaut"
date: '2018-09-06'
output:
```

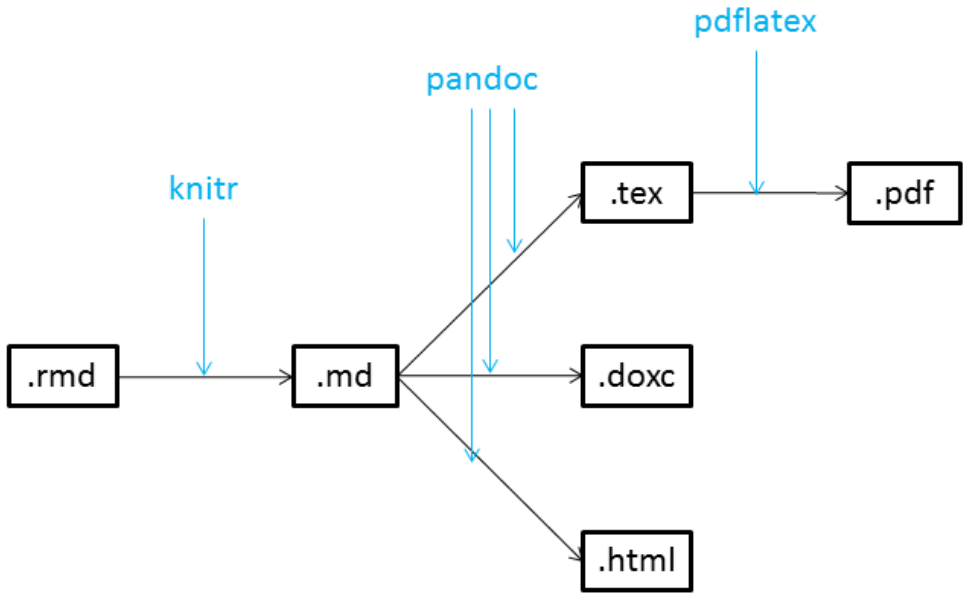
```
  word_document:
    toc: yes
---
```

- You can specify it when you create a new `Rmarkdown` document.
- You can also specify it later in the header.
- Then, it's just a matter of kniting the document!
- Little documentation, few options & configurations are possible (This is probably not the format that should be promoted, as it moves away from an open source environment).
- (FYI, there is a spellchecker in `Rstudio`: Edit >Check Spelling...)

Portable Document Format (.pdf)

```
---
title: "rmarkdown_pdf"
author: "Sébastien Renaut"
date: '2018-09-06'
output:
  pdf_document:
    keep_tex: true
    toc: yes
---
```

- You need a extra step to go from a LaTeX (*.tex*) format to a *.pdf*. This is handled by the `pdflatex` function in R.
- LaTeX software is a high-quality typesetting system.
- It is the *de facto* standard for the communication and publication of scientific documents.
- LaTeX is available as free software here.



- If interested, follow this discussion: *Why LaTeX is such a bloated system?*

- So... *TinyTeX* is a custom LaTeX distribution based on TeX Live that is small in size (~150MB) but functions well in most cases, especially for `R` users .
- `tinytex` R package is a wrapper function that installs *TinyTeX*.

Exercice 1 (10min.)

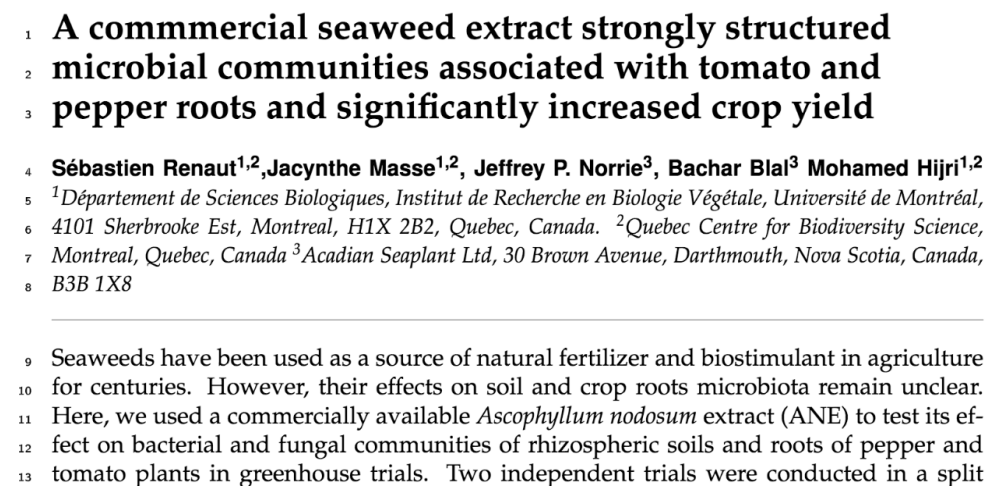
- Install the `tinytex` R package from the console. It may take a few minutes to download and compile (~150MB)

```
install.packages("tinytex")
library(tinytex)
install_tinytex()
```

- Create a new document, compile it as *.pdf*.
  - Add a Table of Content.
  - Add a graphic.
- Now compile it as a Word document (*.docx*)
- Add some reference by specifying the `csl: ../csl/peerj.csl` and `bibliography: ../biblio/test_library.bib` in the header

LaTeX template

- This allows further options in the *.Rmd* file when going from *.tex* file to *.pdf*.
- You can build your own *.tex* template if you know LaTeX...
- There are many templates available on the web that you can use.
- Here is one I like for manuscripts (Thanks svmiller on )
  - Using this (sligthly modified) template, I am writing my first *.Rmd* manuscript.



A commmercial seaweed extract strongly structured microbial communities associated with tomato and pepper roots and significantly increased crop yield

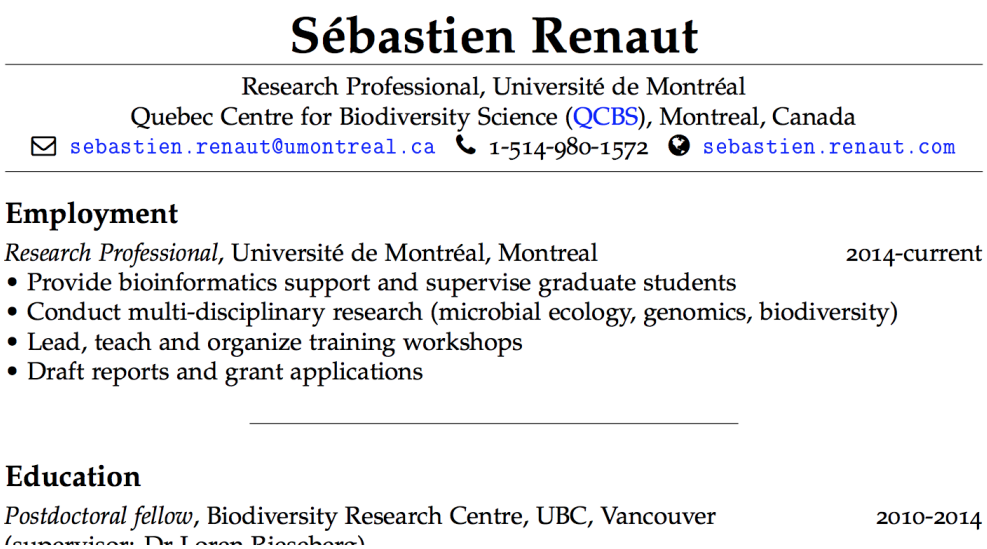
Sébastien Renaut[1,2],Jacynthe Masse[1,2], Jeffrey P. Norrie[3], Bachar Blal[3] Mohamed Hijri[1,2]

[1]Département de Sciences Biologiques, Institut de Recherche en Biologie Végétale, Université de Montréal, 4101 Sherbrooke Est, Montreal, H1X 2B2, Quebec, Canada. [2]Quebec Centre for Biodiversity Science, Montreal, Quebec, Canada [3]Acadian Seaplant Ltd, 30 Brown Avenue, Darthmouth, Nova Scotia, Canada, B3B 1X8

Seaweeds have been used as a source of natural fertilizer and biostimulant in agriculture for centuries. However, their effects on soil and crop roots microbiota remain unclear. Here, we used a commercially available *Ascophyllum nodosum* extract (ANE) to test its effect on bacterial and fungal communities of rhizospheric soils and roots of pepper and tomato plants in greenhouse trials. Two independent trials were conducted in a split

- Here is one I like for *Curriculum Vitae*

– Using this template, I re-wrote my CV to give it a fresh look!



Sébastien Renaut

Research Professional, Université de Montréal
Quebec Centre for Biodiversity Science (QCBS), Montreal, Canada
sebastien.renaut@umontreal.ca 1-514-980-1572 sebastien.renaut.com

Employment

Research Professional, Université de Montréal, Montreal 2014-current
- Provide bioinformatics support and supervise graduate students
- Conduct multi-disciplinary research (microbial ecology, genomics, biodiversity)
- Lead, teach and organize training workshops
- Draft reports and grant applications

Education

Postdoctoral fellow, Biodiversity Research Centre, UBC, Vancouver 2010-2014

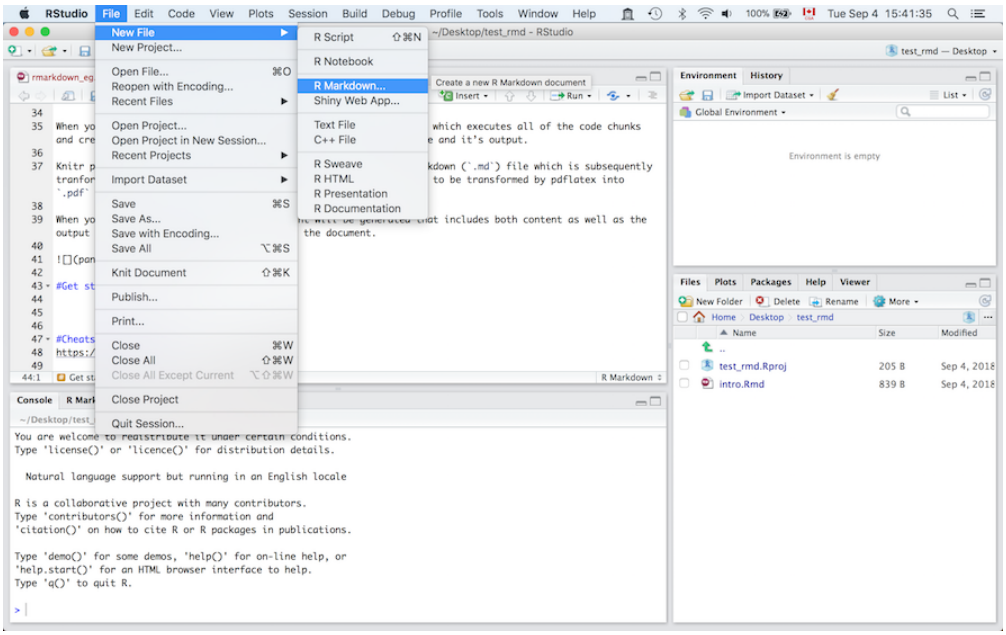
- Download template and add it to the header. Not however that you should download or at least take a look at the *.Rmd* to see options, and *.pdf* to see output.

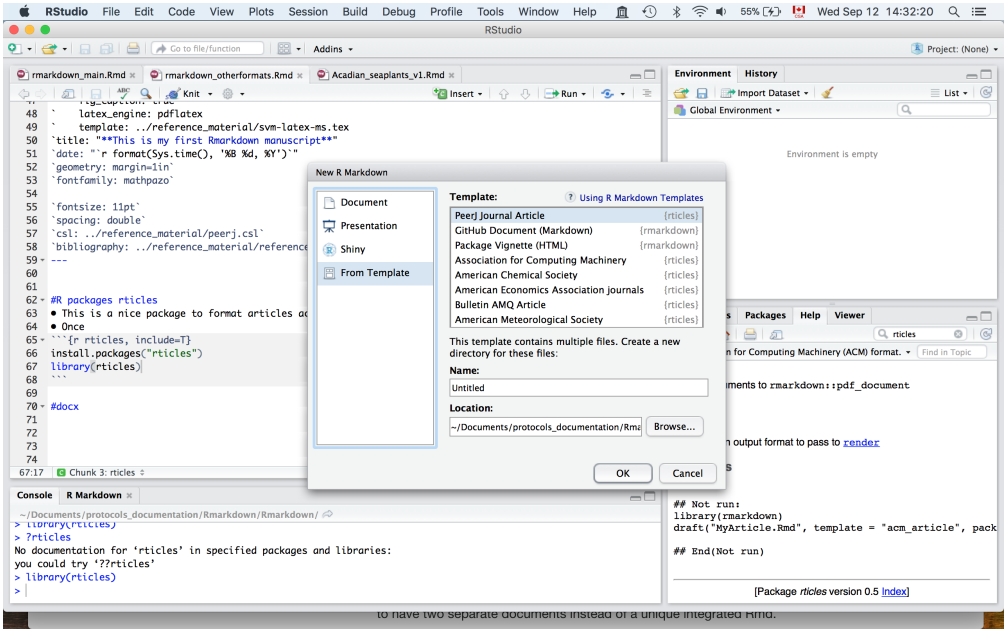
```
---
output:
  pdf_document:
   keep_tex: true
   fig_caption: true
   latex_engine: pdflatex
   template: ../reference_material/svm-latex-ms.tex
title: "**This is my first Rmarkdown manuscript**
#many more options can go here which will be using by pdflatex.
---
```

- You should know have all the tools to generate your fully reproducible manuscripts from `R`. The only objection I see is formatting manuscript this way is integrating comments from co-authors who do not use `R`, `R markdown`, `git` or `github`.

Exercice 2 (10min.)

- R packages `rticles` is (potentially) a nice package to format articles according to the specification of a journal.
- But first, you need to install it in the R console.
- Once installed, try starting a new R markdown document according to your journal of interest.



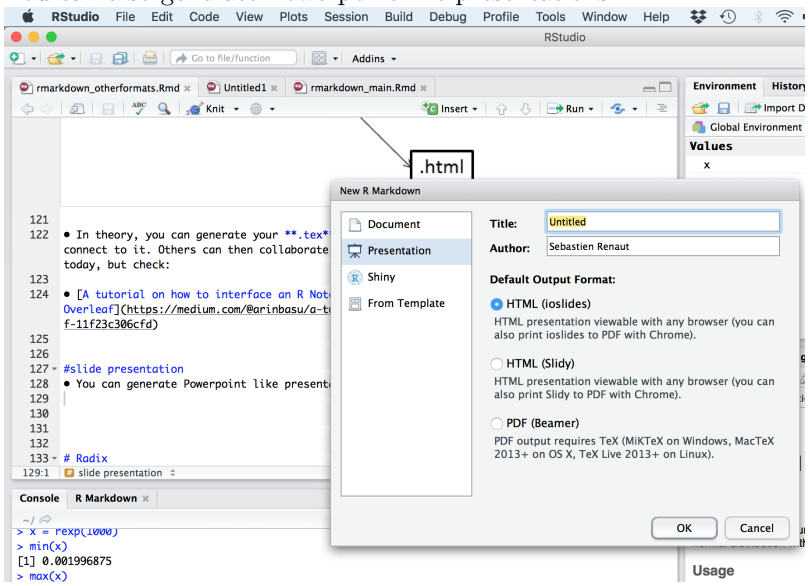


- Right now, few templates available.
- Some templates may be slower to render, depending on what *LaTeX* package they depend on and need to be downloaded (e.g PNAS).

Other possibilities

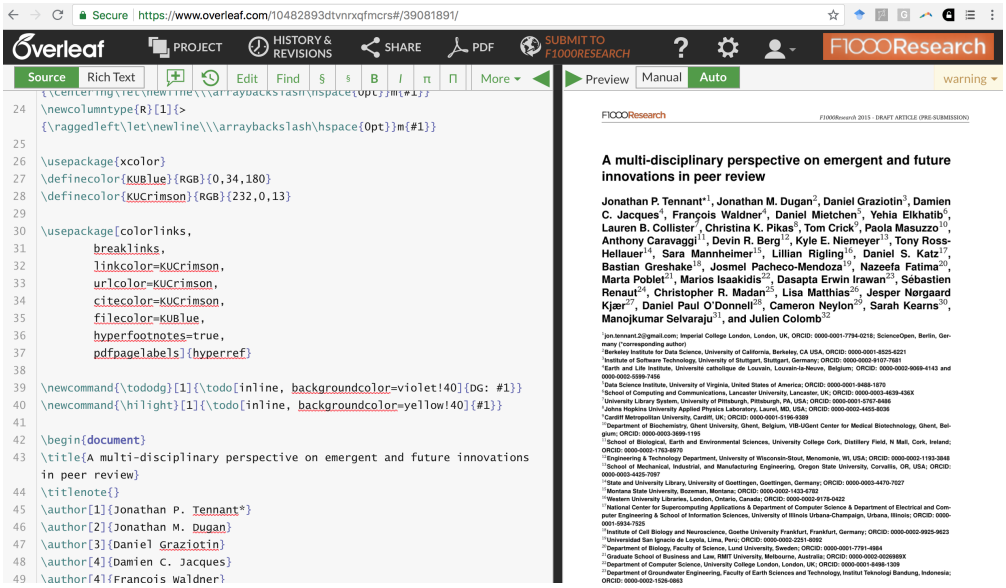
Presentations

- You can also generate Powerpoint-like presentations.

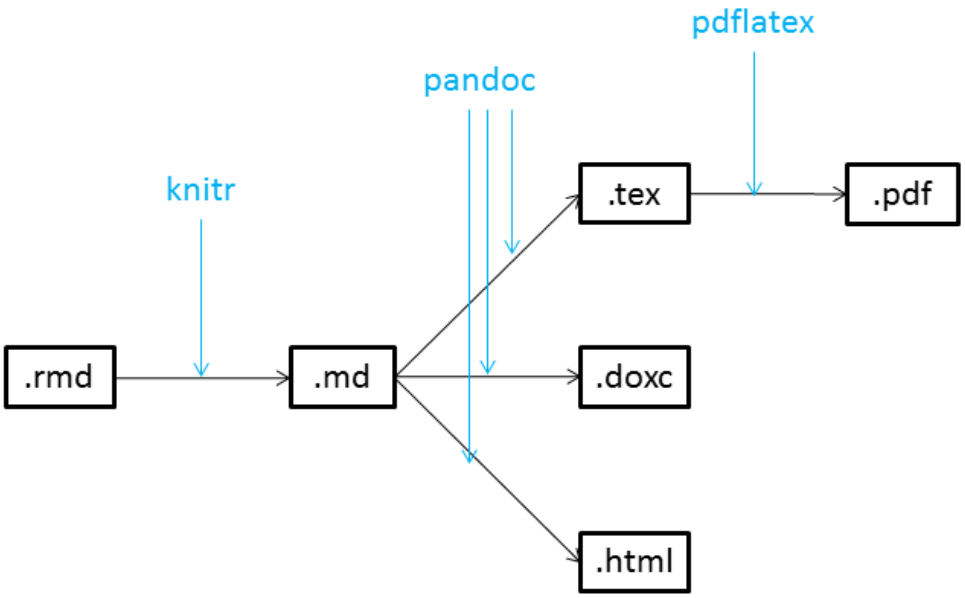


Overleaf

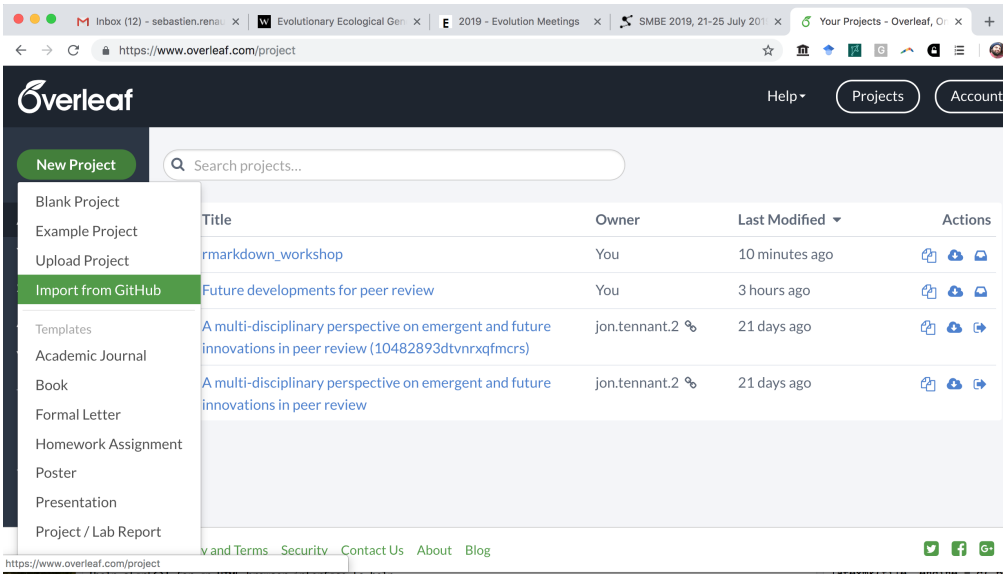
- Overleaf is an online LaTeX and Rich Text collaborative writing and publishing tool that makes the whole process of writing, editing and publishing scientific documents much quicker and easier.



- Remember this:



- So you can generate your *.tex* file, upload it to a github repo and Overleaf will connect to it. Others can then collaborate and modify the *.tex* file.
- Let's take a quick look at overleaf. Once you have an overleaf account, you can connect it to a github repository. You can then pull/push from overleaf to github, allowing others to modify your *.tex* file.



- A tutorial on how to interface an R Notebook with Overleaf
- How do I connect an Overleaf project with a repo on GitHub, GitLab or BitBucket?

Bookdown

- Bookdown is an open-source R package that facilitates writing books and long-form articles/reports with R Markdown.

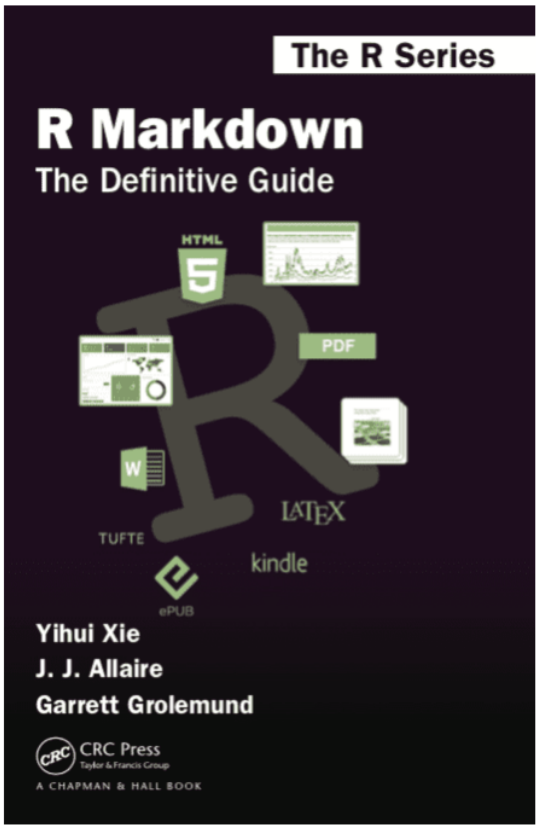
R Markdown: The Definitive Guide

Yihui Xie, J. J. Allaire, Garrett Grolemund

2019-01-29

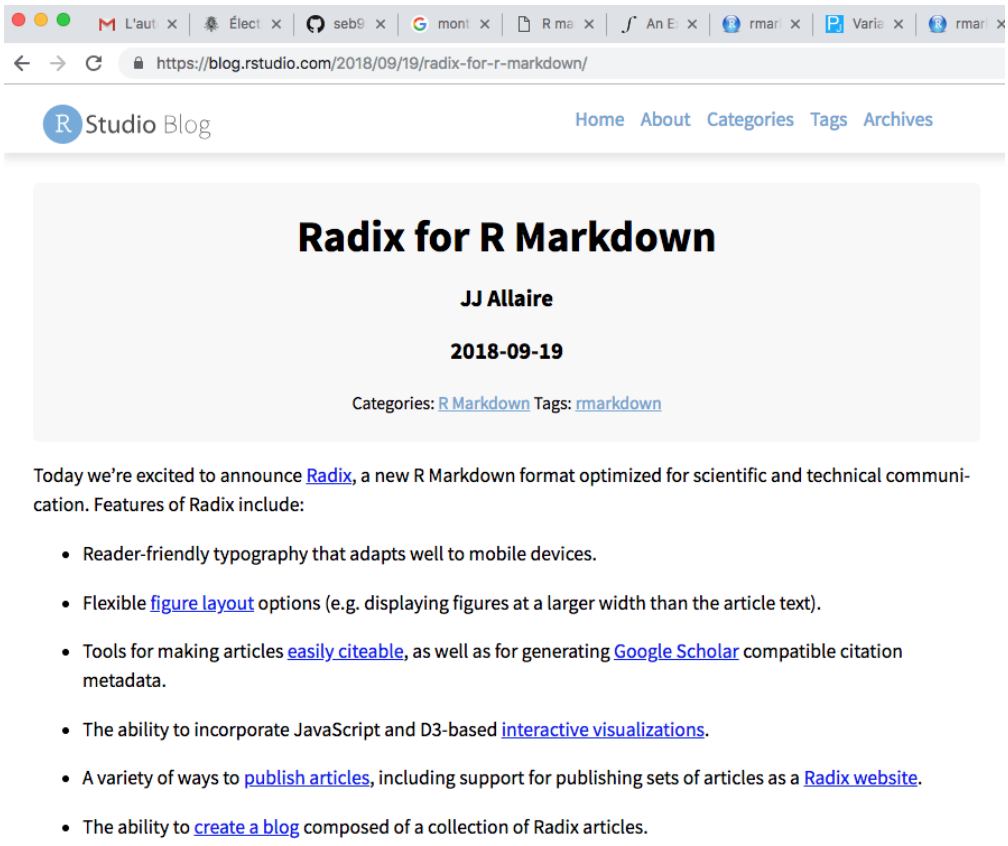
Preface

Note: This book has been published by Chapman & Hall/CRC. The online version of this book is free to read here (thanks to Chapman & Hall/CRC), and licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.



Radix

- Radix offers a better look for publishing blog, webpages, adapted to mobile devices.



- You will need Rstudio v1.2, `radix` and `leaflet`.

```
install.packages("radix")
install.packages("leaflet")
```

- Change output in header to:

```
---
title: "Rmarkdown: radix"
author: "Sébastien Renaut"
output: radix::radix_article
---
```

- Then you can start playing with the `radix` options, such as in this example below (full width figures):

```
#Note that you may need to set eval = F for some formats (pdf, docx) to compile properly

```{r radix_example, echo = F, eval = T, layout='l-screen-inset'}
library(leaflet)
leaflet() %>%
addTiles() %>%
addMarkers(lng=174.768, lat=-36.852,popup="The birthplace of R")
```
```

Exercice 3

- Use a previously generate document to generate a `radix` html output.
- What does it look like? Better?