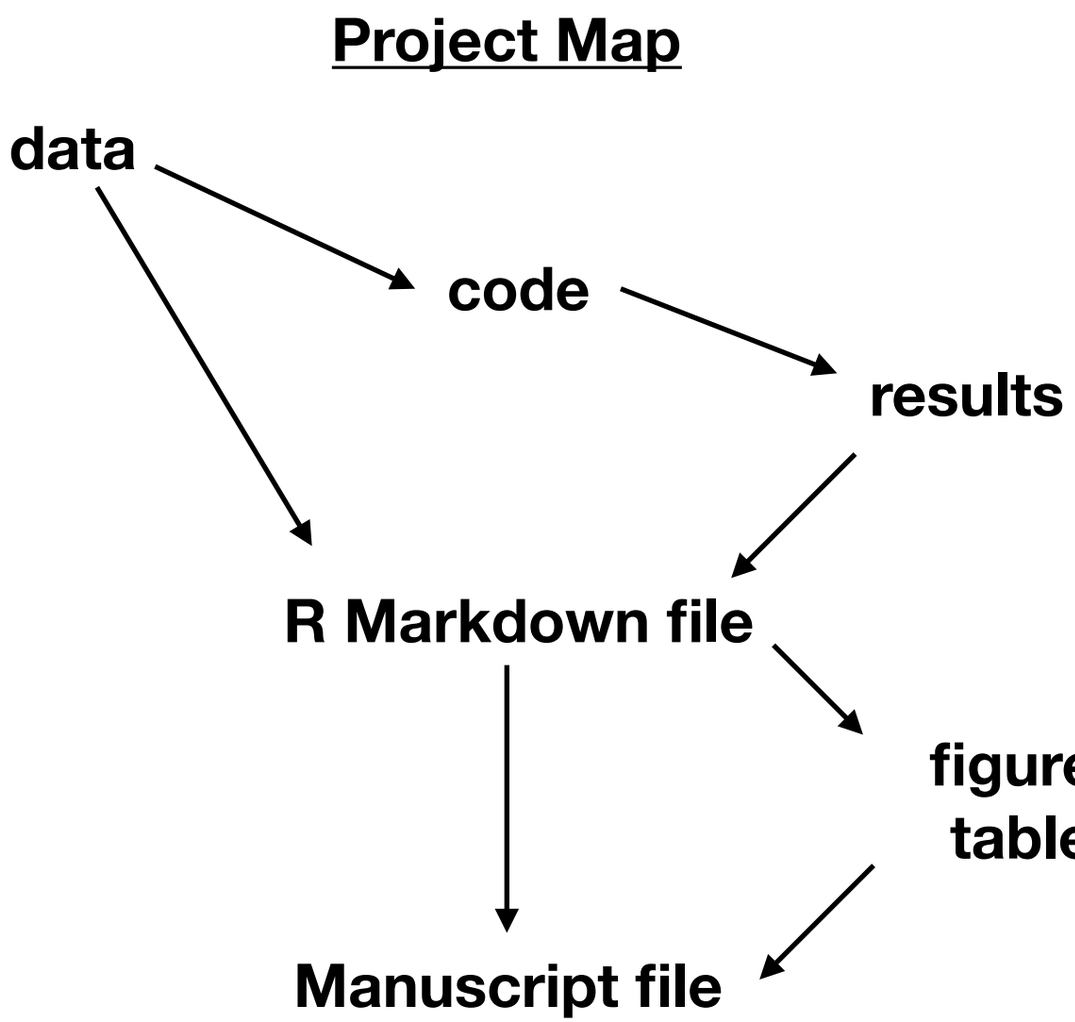
Lecture 23 – Preparing Scientific Publications

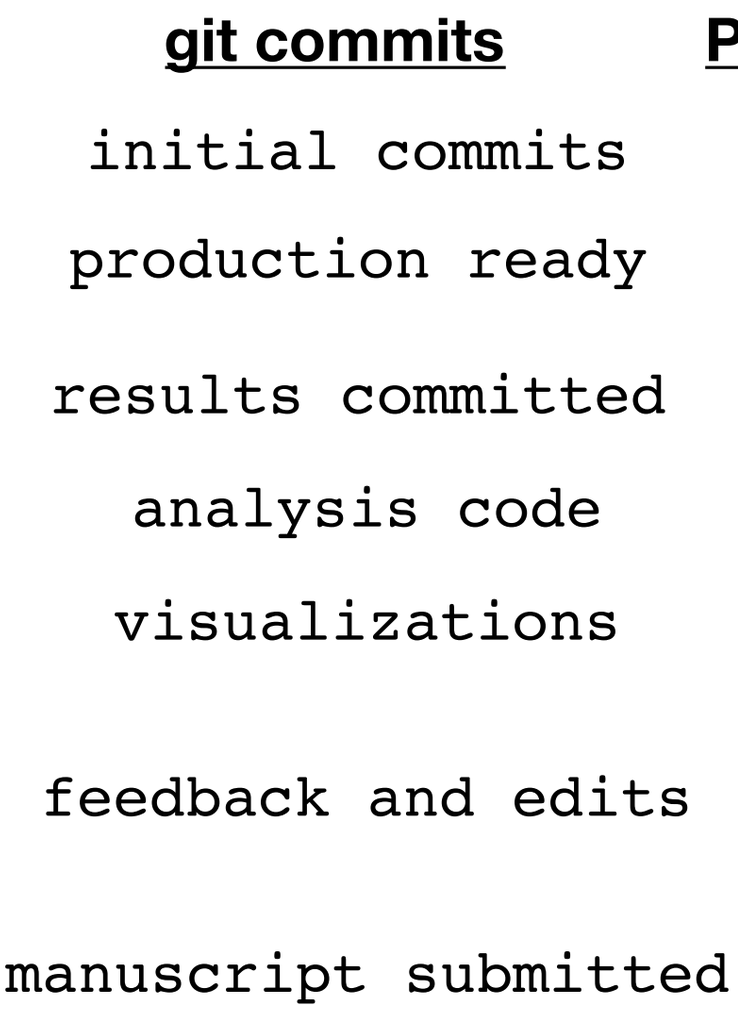
Learning Objectives:

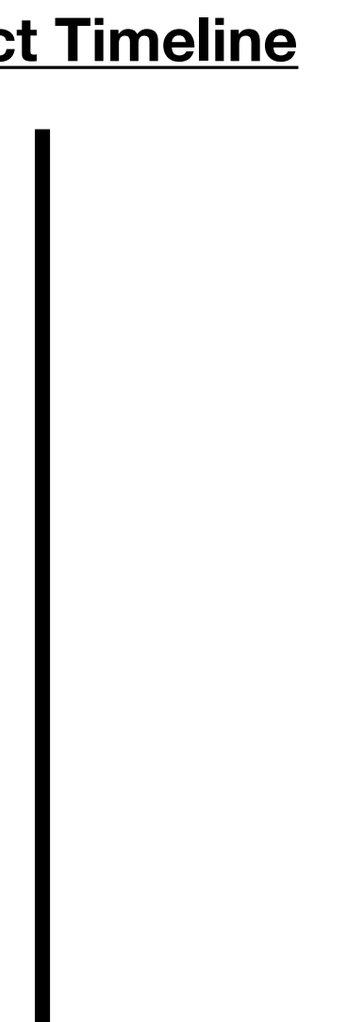
6. **Learn how to document your work and prepare scientific publications.**

   6.4 Learn how to create a publication-quality document with R Markdown.

Integrating analysis, version control, and manuscript



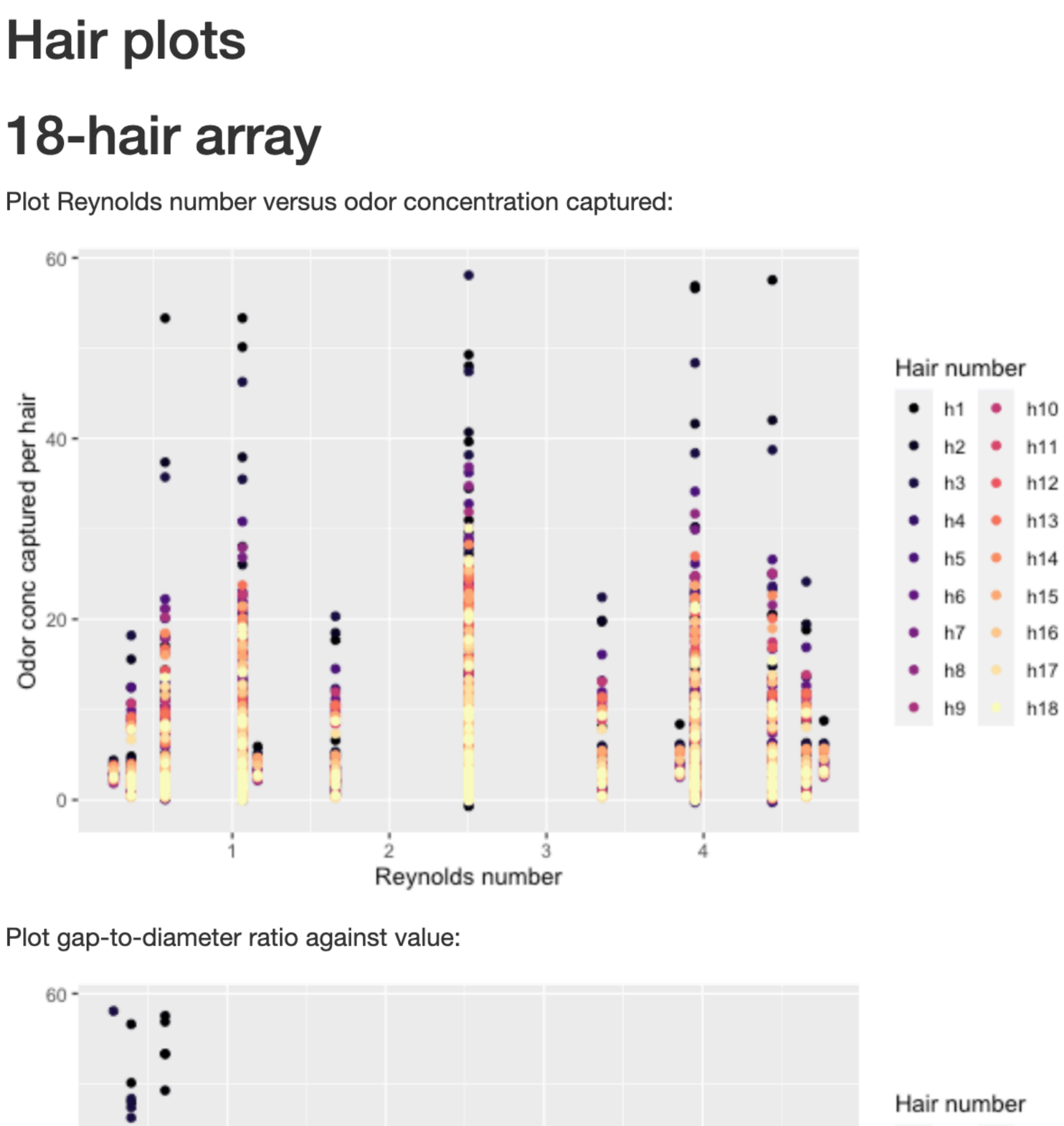




Documenting work with R Markdown Notebook

Prelim analyses can be organized with a R Markdown Notebook.

- Keeps track of all code to load, clean, and plot results directly from data files.
- Keeps a clear record of your analyses as it evolves, so you don't repeat work.
- Helps you visualize data and decide which plots are meaningful.
- Can be easily rerun if data are updated.
- Easy to show progress to your adviser!
- Easy to transfer to a manuscript!



Bibliographies in R Markdown

- **Use just about any style of bibliography file:** json, mods, bib, bibtex, ris, enl, xml, wos, medline, copac.

```
---
title: “Sample Document”
output: word_document
bibliography: BibLaTex.bib
---
```

- **Define journal style using CSL:** download csl files here https://www.zotero.org/styles

```
---
title: “Sample Document”
output: word_document
bibliography: BibLaTex.bib
csl: journal-of-the-royal-society-interface.csl
---
```

- **In-text reference:** `[@Baird:2014]` or `[e.g. @Baird:2014]`

The Process of Scientific Publication

- **Publication is a fundamental unit of science.** Peer-reviewed publications are used as a basic unit of evaluation, basis for promotion, and merit. Important for dissemination of research.

- **The process:**

1. **Preparing a manuscript for submission.** Basically a souped-up lab report, most follow standard form. Heavily edited and revised before submission.

2. **Journal editor chooses peer reviewers and sends out the manuscript.** Usually between 2 and 5 other scholars with expertise in the subject matter of the paper. Peer reviewers will assess the methods, rigor, novelty, and appropriateness of the results and submit reports with specific recommendations for improvement.

3. **Journal editor makes a decision based on reviews and sends to authors.** These can range from “accept as-is”, “resubmit with minor or major revisions”, or “reject.”

4. **Authors make changes to manuscript based on referee feedback.** Authors must address every point of feedback, no matter how mundane or difficult. If invited, authors can submit again to the same journal.

5. **If editor is satisfied with changes, they can accept, or send back for another round of review.** This can be the same referees or different people.

6. **Once accepted, the journal copy edits the manuscript and publishes.**

Additional Resources

https://rmarkdown.rstudio.com/authoring_bibliographies_and_citations.html – Citations and biblographies in R Markdown

https://www.zotero.org/styles – Zotera CSL Style File Repository

https://rmd4sci.njtierney.com/ –
***R Markdown for Scientists*, by Nicholas Tierney**