Paper to discuss

Paper 2
“Short communication on Next-generation sequencing”
Jorge S Reis-Filho

Paper 3
“CNV-seq, a new method to detect copy number variation using high-throughput sequencing”
Chao Xie and Martti T Tammi
Writing a scientific report

Exactly what are you going to write about

**Audience** is writing for a beginner, an intermediate, or an advanced audience

**Do your research.** How well do you know the topic? Is it something you can write easily about with little or no preparation, or do you need more information from experts in the field?

**Decide on the length of the reported document.** Consider the limitations

**Compile a list of possible sources for you to consult.** This can include documents, internet research and people to talk to

**Write either an outline or a summary:** report to the sharper focus
Writing a scientific report

Write the rough draft of the report as follows

Tell your readers what you are going to tell them

*For example:*

- This report explains how to [.....]
- It covers the following information
- The information in this report is written for a beginner/an intermediate/ or an advanced

Tell your readers what you promised to tell them

Tell your readers what you just told them

*For example:*

- This report taught you how to [...]  
- You learned how to [...]
Writing a scientific report

Report should

describe the materials that were used
include results that were obtained
relate the results to existing knowledge
suggest future study
presentation of data in tables and figures

Reader should be able to

duplicate the study from the information
see a full presentation of results (Without any attached interpretations)
reach his or her own conclusions
Writing a scientific report

Check over your piece for presentation

- Check for faulty information
- Double-checked your facts

- Delete any unnecessary or contradictory information
- Eliminate anything that is just taking up space
- Don’t fill your work with fluff

- Check for grammar and spelling errors
- Read it aloud to yourself to make sure the text flows smoothly

If you need to do more research, go ahead and do it!!!!
Writing a scientific report

Specific parts of a scientific paper

The Abstract

The Introduction

The Methods and Materials

The Results

The Discussion

Acknowledgements

References
Writing a scientific report

The Abstract

Written last and is a complete summary of all section of the paper
Short section and is intended to give the potential reader an overall view of the following paper

Brief, concise summary of your results
  Purpose of the paper
  How the work was carried out
  results
  conclusions

These topics are then described in more detail in the body of the paper
Writing a scientific report

The Introduction

Historical and current state of knowledge about the topic
Bulk comes from the synthesis of previously published results
Written in third person using active voice

Should indicate the specific objectives or testable hypotheses that will be studied
Hypothesis should be either supported or refuted by the results of the reported study
Writing a scientific report

The Materials and Methods

The way the project was conducted: where, when, and how
Written in past tense as it describes what was done to generate data

Where: why was the site for the research chosen?
When: Time periods of the study (year, month, day, time of day).
   Describe any special conditions that prevailed during the study period

How: data collection, conducted experiments, and specify the equipment used
   Reference to previously published standard procedures and equipment
   Detail so the reader can duplicate the study
   State the procedures used to record, summarize, and analyze the data, including literature citations
Writing a scientific report

The results

Summarize the data and observations obtained in your study

Raw data utilizing written text, tables, and figures: text should relate the data to those of the literature

Presentation of data as a table or figure is sufficient. Same data should not be presented in both ways

Reader can observe any general patterns and gain a sense of the amount of variability within the data

Concentrate on general patterns, trends, and differences in the results

Begin with the most general features of the data and proceed toward the most specific

Any data sheets or other raw data should be included in an appendix

Data is not interpreted in the "Results" section!!!!!!
Writing a scientific report

The conclusions

Interpret the data in relation to the original objectives or hypotheses

Relate the interpretations to the present state of knowledge and future needs for research

If you can answer "Yes" then → good discussion section

1. Did you reach conclusions about the initial hypotheses?
2. Did you compare conclusions to those of others?
3. Did you identify sources of error and basic inadequacies of technique?
4. Did you speculate upon broader meanings of the conclusions reached?
5. Did you identify further steps needed in research on the problem?
6. Did you suggest improvements of methods?
Writing a scientific report

Aknowledgments

Give credit to those who helped in the project: contributing work, advice, permission, technical assistance, funds for conducting the actual work, and help with preparation of the paper.... Should not include those who contributed significantly to the paper and are listed as authors.

References

List authors alphabetically that are referred to in the text
Different types of references has their own particular format
Many journals have specific formats that must be followed
References

**Journal Article:**
Includes the name of the author or authors, the year of publication, the article title, the fully spelled journal name, and the volume and page numbers of the article itself


**Article from Proceedings of a Meeting:**
Writing a scientific report

References

**Article in Edited Volume:**
Includes the article author, date of publication, article title, pages in volume, names of volume editors, volume title, and the publisher's name and location


**Book:**
Gives the author, date of publication, title, and the publisher's name and location