Final Paper Guidelines

As you know, your final paper for the course is due on Dean's Date (5PM). By university regulations, the course instructors cannot give extensions beyond this date.

We ask that you prepare your paper with a structured abstract of less than 250 words (with background, results and conclusion), and background, results, discussion and conclusion sections. Please also include Author Contributions, Acknowledgements and References sections. See https://genomebiology.biomedcentral.com/submission-guidelines/preparing-your-manuscript/research for a description of what goes in these sections. Please upload your final paper as either a Microsoft Word document or a PDF to Canvas (just like the homework), and please include your full name in the title of the document.

For projects that recapitulate an existing research paper, the write up should focus on the portions of the paper that you focused on.

For projects done in groups, the write up should be done individually, focusing on the portion you did. Author contributions should specify the division of workload (i.e. "so-and-so did this analysis," etc.). The caption to each figure should indicate which individual created the figure.

We recommend a length of five pages with 11-point font, 1.5-spaced excluding figures and references. The introduction and discussion should each be less than one page. The paper may not be longer than eight pages (excluding figures and references). Each paper must have a title.

At the end of this announcement is the rubric that will be used to grade your paper.

Please submit Python or R code *you wrote* as Supplementary Files, as a method of showing your work on the project. Please note the following guidelines:

1) The code can be messy or disorganized- there is no need to clean it up or worry about whether it's presentable, you can simply send it as you currently have it.
2) Do not include code that others wrote (e.g., authors of the paper you are trying to replicate)
3) Compress any code you wish to send into a ZIP archive (do not upload it as multiple loose files!) and upload it along with your final paper. It must be no larger than 5 MB.
4) If you have intermediate data sets (matrices, tables, .RData files), you're welcome to include them as long as the total size of the .zip file does not exceed 5 MB.

Rubric

Final paper grading: (out of 100)

Abstract: 5

Background: 10

Results & Figures: 25

Discussion: 15

Methods: 25

References: 5

Author Contributions: 15

Abstract

1 The main point of the project is not clearly articulated.

3 Abstract describes the background, results and conclusions of the projects, but could be improved with respect to clarity or organization.

5 Author clearly and concisely describes the Background, Results and Conclusions.

(For replication projects, please state in the abstract whether you recapitulated or refuted the main results of the paper.)

Background

2 The author does not adequately describe the rationale behind the study, and describes very little of the relevant literature.

5 The author has mastered the background material and has integrated it to highlight open questions that led to the rationale behind the project.

10 This section is a model of impeccable scholarship. The author has mastered the salient issues and integrated them to make an original, complete, and concise introduction. The goal of the project is clear.

Results & Figures

5 This section does not clearly describe the results, is poorly structured, and/or figures are unclear, unreadable, or incomplete. Attribution of who wrote the code to generate each figure is missing.

15 The section adequately describes the results, but is difficult to follow (e.g., without reading the methods section first). Figures are difficult to understand and minimal explanations of figures are given.

20 The main results are clearly organized and described. Figures and associated captions complement results and are interpretable.

25 The main results are clearly organized and described. Figures are high-quality and include descriptive captions that make them easy to interpret in the context of the results. For replication projects, it is clear whether the figures for the project are consistent with the original publications.

Discussion (15 points total)

5 points each for addressing 1) interpretations of results (including success or failure to recapitulate results, if a replication project); 2) potential pitfalls of the approach; 3) implications & future work.

Methods

5 The student supplied a minimal explanation of the rationale and methods. Code was not provided.

10 This section lacks a complete summary of the methods. In some cases the relevant details were inaccurate or missing, making it difficult for another researcher to replicate the work.

15 A reasonable summary of the experimental methods. Student provided some level of detail, and another researcher would potentially be able to reproduce the experiments.

20 A good summary of the experimental methods. Other readers could easily understand the experimental methods and could replicate the experiments.

25 This section is an exceptional description of the methods and could be used in a publication. Code is provided and can be easily viewed.

Author contributions

Up to 10 points reflecting each student's individual contribution to the success of the project and 5 points for the overall scope of the project.

References (see Genome Biology for format)

1 The citations were lacking; three of the following were true (a) a few key facts were not properly referenced, (b) references were missing from the list, (c) references were in the list, but not cited, (d) the references were not listed in an accepted scientific format, (e) the student relied almost exclusively on non-peer reviewed Internet sources.

3 The citations and references were acceptable; however two of the following were true (a) a few key facts were not properly referenced, (b) references were missing from the list, (c) references were in the list, but not cited, (d) the references were not listed in an accepted scientific format, (e) the student relied almost exclusively on non-peer reviewed Internet sources.

4 Most citations were accurate; however one of the following was true (a) a few key facts were not properly referenced, (b) references were missing from the list, (c) references were in the list, but not cited, (d) the references were not listed in an accepted scientific format, (e) the student relied almost exclusively on non-peer reviewed Internet sources.

5 The citations were completely accurate. Each factual statement was referenced to the appropriate primary source. The reference list contained only the articles mentioned in the student’s paper. Each reference was listed completely in the bibliography.