Guidance for producing images and creating a further reading list

Producing and referencing images

Images can be tremendously useful when trying to convey scientific concepts to any audience. For example, images can allow you to describe a biological process more succinctly or highlight features of a cell or organism. Images can also increase the audience's engagement with and understanding of the topic.

However, when using third-party images such as logos, images, diagrams and tables, copyright is an issue that must be considered. Therefore, for the Science Communication Prize, we strongly encourage the use of self-produced images.

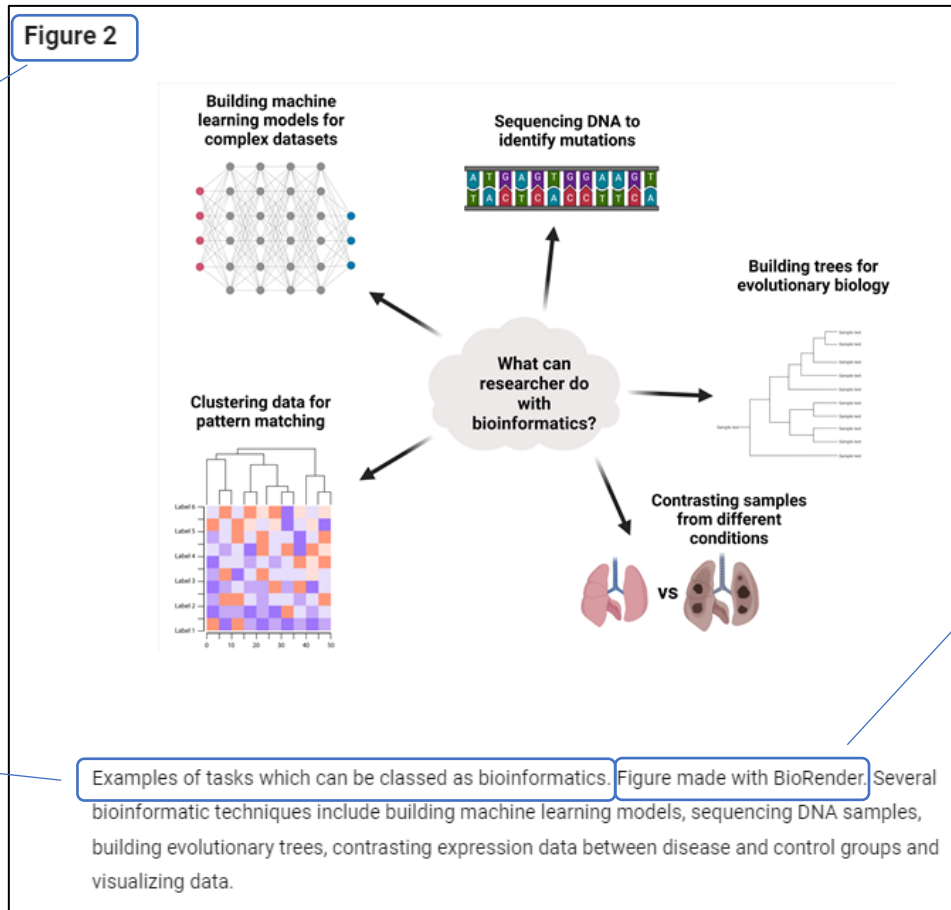You can create your own images in a number of ways, including:

- Drawing an image and taking a photograph or scan.
- Creating an image using desktop software.
- Creating an image using free online software such as:
    - [Biorender](#)
    - [Bioicons](#)
- Creating an image using AI software.

When an image is used in a publication, it is often called a 'figure'.

You must acknowledge where the figure has come from, even if it is your own work. For example, you should acknowledge the AI platform or online software you have used.

You should also include a title for your figure, and you can also include an optional figure legend. The purpose of a figure legend is to explain the image to the reader to help the reader understand what is being shown.

An example from an article in *The Biochemist* magazine is shown below. You can find the full article, with more examples [here](#).

Figure 2

This is the second figure in the article, so is called 'Figure 2'.

'Figure 2' is commonly written in the figure legend itself.

Building machine learning models for complex datasets

Sequencing DNA to identify mutations

Building trees for evolutionary biology

What can researcher do with bioinformatics?

Clustering data for pattern matching

Contrasting samples from different conditions

vs

Acknowledgment of where the figure has come from.

Title of figure.

'Figure 2:' is commonly written before the title.

Examples of tasks which can be classed as bioinformatics. Figure made with BioRender. Several bioinformatic techniques include building machine learning models, sequencing DNA samples, building evolutionary trees, contrasting expression data between disease and control groups and visualizing data.

A figure legend, explaining the figure.

You should also reference your figure in the text of your article, when you first want the reader to look at it.

For the example above, the author writes '(Figure 2)' in the text after they talk about what is shown in the figure. You can see this in the text below. This directs the reader to the figure, to help explain the text from the article.

Why is bioinformatics necessary in biological sciences?

Bioinformatics supports every aspect in modern biological research. In some ways bioinformatics is not a useful term for the vast array of different tasks that can be performed for uses in biology (**Figure 2**). Illustrated in **Figure 2** is a portfolio which shows the range of tasks from distinct disciplines within biological research that require an expert in bioinformatics. Building machine

Creating a further reading list

For the Science Communication Prize, you **do not** need to reference in the text of your article. Instead, you should create a 'further reading' list at the bottom of your article, which should be beneficial to readers wanting to know more about the topic.

For each item in your further reading list, you should include:

- The author(s).
- The title.
- Where it was published – for example, *The Biochemist* or *Nature Reviews Genetics.*
- The year it was published.
- The page numbers.
- A link to the content online (if appropriate).

An example from *The Biochemist* is shown below, and the article can be found here.

Further Reading

Further reading on the current demand on bioinformatics in life science

- Attwood, Teresa K., et al. "A global perspective on evolving bioinformatics and data science training needs." Briefings in Bioinformatics20.2 (2019): 398-404. **https://doi.org/10.1093/bib/bbx100**

- Gauthier, Jeff, et al. "A brief history of bioinformatics." Briefings in bioinformatics20.6 (2019): 1981-1996. **https://doi.org/10.1093/bib/bby063**

- Kanehisa, Minoru, and Peer Bork. "Bioinformatics in the post-sequence era." Nature genetics33.3 (2003): 305-310. **https://doi.org/10.1038/ng1109**

You **will not** be judged on your referencing for the further reading list.

You can use software such as 'citethisforme' or 'mybib' to help with formatting your references in the reading list. This will not be judged in the competition.

For further support, please contact our Education department.