

Author: Jesse Gunn Cheu
Contact: jjgc001@bucknell.edu
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This tutorial will help you through the process of conducting a blast and graphing it easily in R. Whether an expert or a beginner, this tutorial should help you create a visually appealing graph of the data you have collected. At the bottom of this tutorial are examples of graphs that you can make.

Part 1 - Conducting Blasts

All blast formats will work with this tutorial except the out format is important. When running your blast, ensure that the following flag is included...

```
-outfmt "6 qseqid sseqid sstart send length evalue"
```

This will provide key information that will be used in graphing your blasts later on.

Part 2 - Organizing Blast Output

Here we will take the blast outputs that we have gathered and concatenate them into one CSV file that would be easy to use in R.

Download these files into one directory:

[PYTHON](#)

Example files are not needed but are recommended to understand the code

[Example 1](#)

[Example 2](#)

[Example 3](#)

Instructions :

Following the docstrings and comments in the python file, you will be able to concatenate all of your blast outputs into a single CSV that will be used for graphing in R.

Part 3 - Graphing in R

Finally we will visualize all of the blast data through R.

Download this file:

[R-Notebook](#)

Instructions:

Following the comments in the notebook, you should be able to make graphs that are similar to the ones shown on the following page.

