



BIOF 085 Introduction: Day 0

Instructors: Gaby Gerlach and Roshni Bhatt

Goals for this evening session

Location of available resources and communication

Everyone has anaconda installed and working

Creation of a working directory containing the required data

Installation of packages (will discuss what these are, why we need them tomorrow)

Goals for this evening session

Difference between Python 3.7 and 3.8

Set up of effective working environment

Demo the two Interactive Development Environments (IDE) we are going to use (Spyder, Jupyter notebooks)

Location of resources: Canvas and Slack

Recordings will go here for your future use

Zoom, slack, into announcement

Data, slides, jupyter notebooks, schedule

BIOF 085 > Modules

Recent Announcements

- Slack channel for BIOF085, Please join
We will be primarily using Slack to com...
Posted on:
- Pre-work
There is a section below titled pre-wor...
Posted on:
- Zoom Link - for the entire workshop
ADD LINK
Posted on:

View Course Stream

View Course Calendar

View Course Notifications

To Do

Nothing for now

Collage All

Resources

▶ Pre-work/Pre-session March 16

▶ March 17 - Day 1

Days have sections with info and assignments

Location of resources: Canvas and Slack



Do not use the zoom chat, no one will answer your question.

The screenshot shows the Slack interface for the BIOC085-students workspace. On the left, a sidebar lists navigation options like Threads, All DMs, Drafts, Mentions & reactions, More, and Channels. Under Channels, the #class-communication-mar2021 channel is selected, indicated by a blue bar. The main area displays the channel's header: '#class-communication-mar2021' with a star icon, an 'Add a topic' button, and user counts (1 person, 24 messages, 1 info). A purple callout box highlights the channel name. Below the header, the channel description reads: 'general communication for the class'. The message list shows two messages from Gaby Gerlach: one joining the channel at 11:37 AM and another setting the channel description. A message input field at the bottom is labeled 'Message #class-communication-mar2021'.

#class-communication-mar2021

You created this channel today. This is the very beginning of the #class-communication-mar2021 channel.

Description: general communication for the class ([edit](#))

[Add an app](#) [Add people](#) [Send emails to channel](#)

Today ▾

Gaby Gerlach 11:37 AM joined #class-communication-mar2021.

Gaby Gerlach 11:37 AM set the channel description: general communication for the class

Message #class-communication-mar2021

Aa @ ⓘ

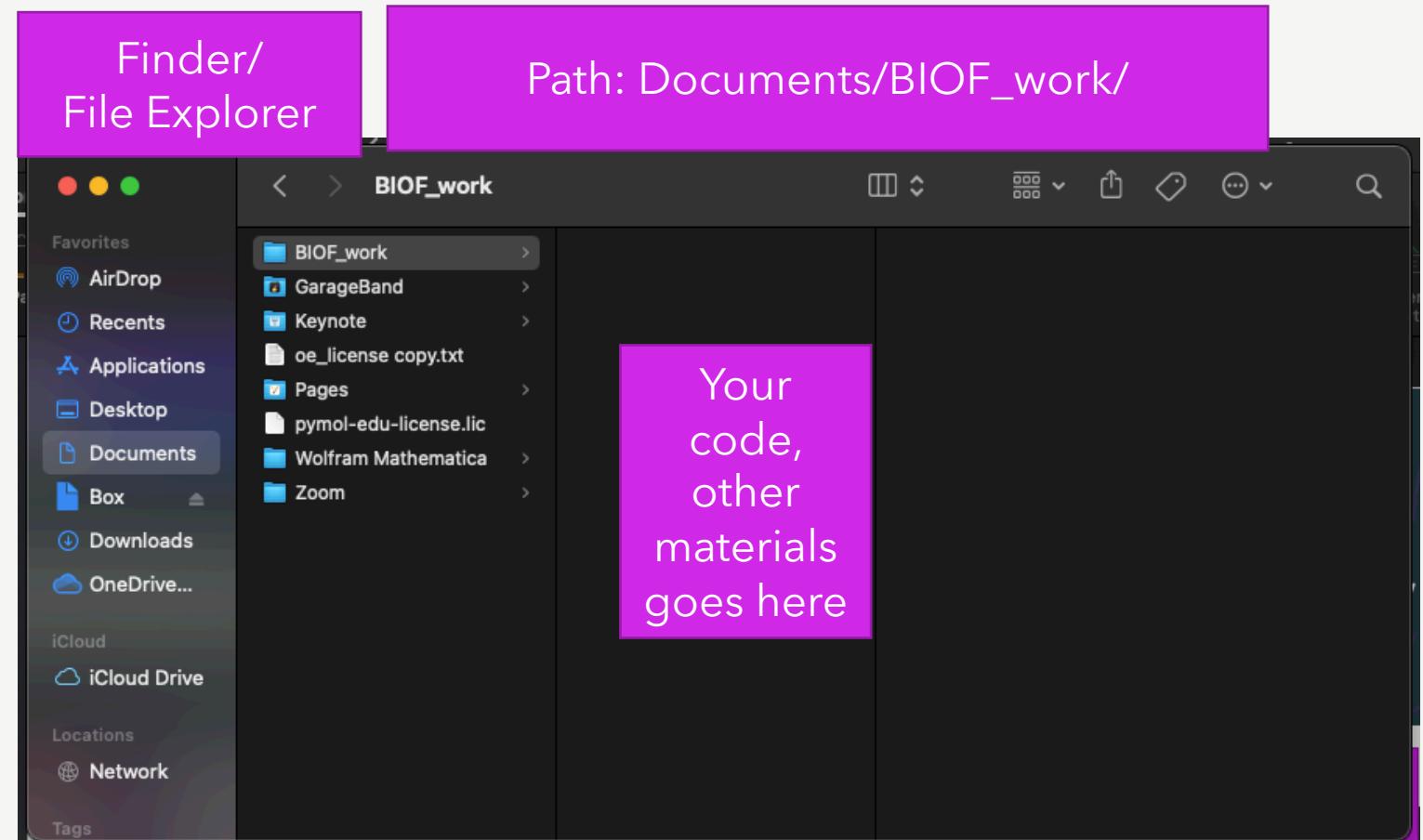
direct message instructors/ other students

Anaconda Installation?

- Let us know if anyone has had issues so we can individually help you!

Working Directory

- All the materials and work for the course should be in a single directory called something like BIOF_work
- Can save it somewhere convenient this example is in my Documents folder, but what ever works for you
- *Documents/BIOF_work/* is the way you type the path that you click through in finder

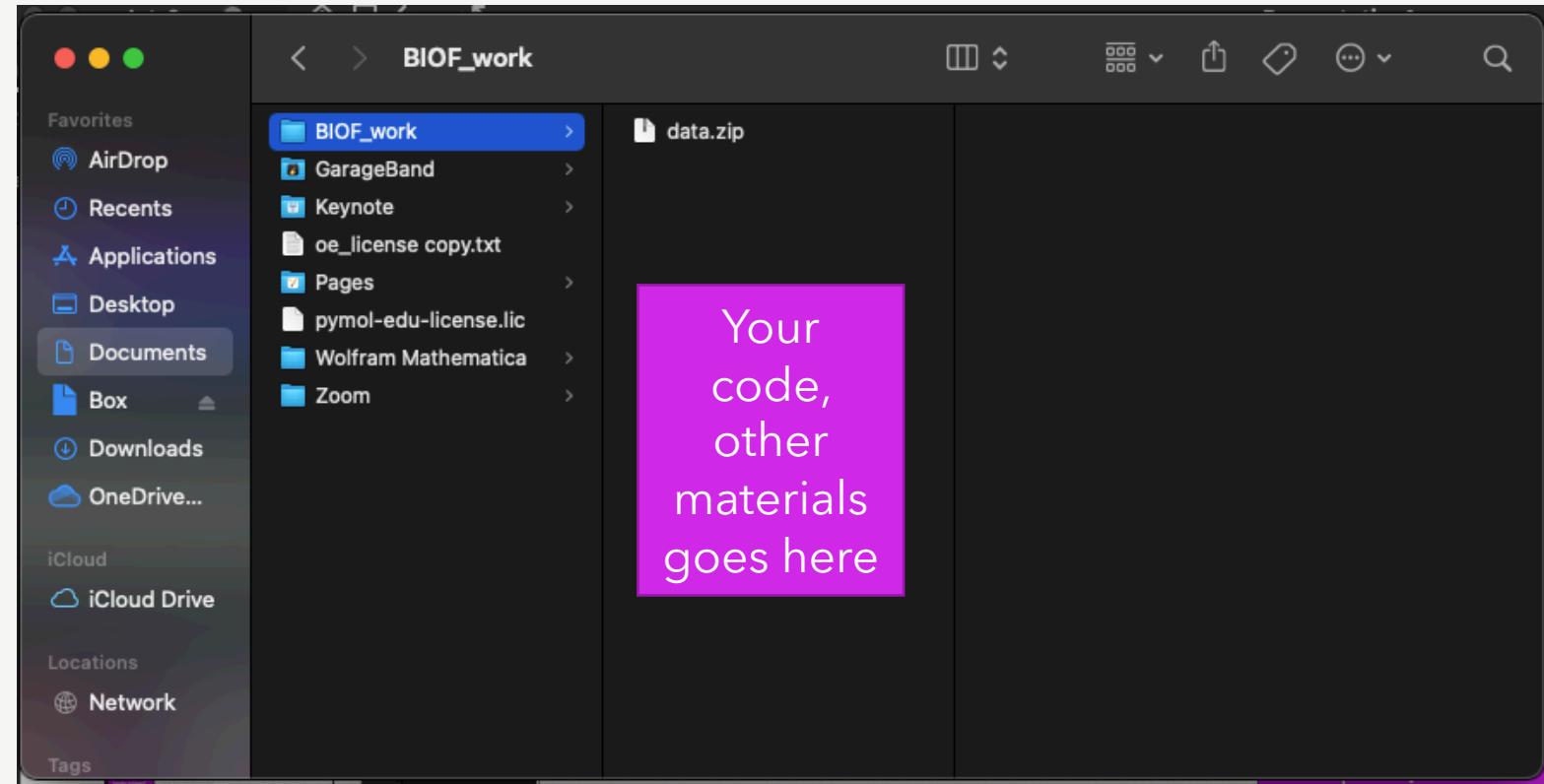


Data download

Finder/
File Explorer

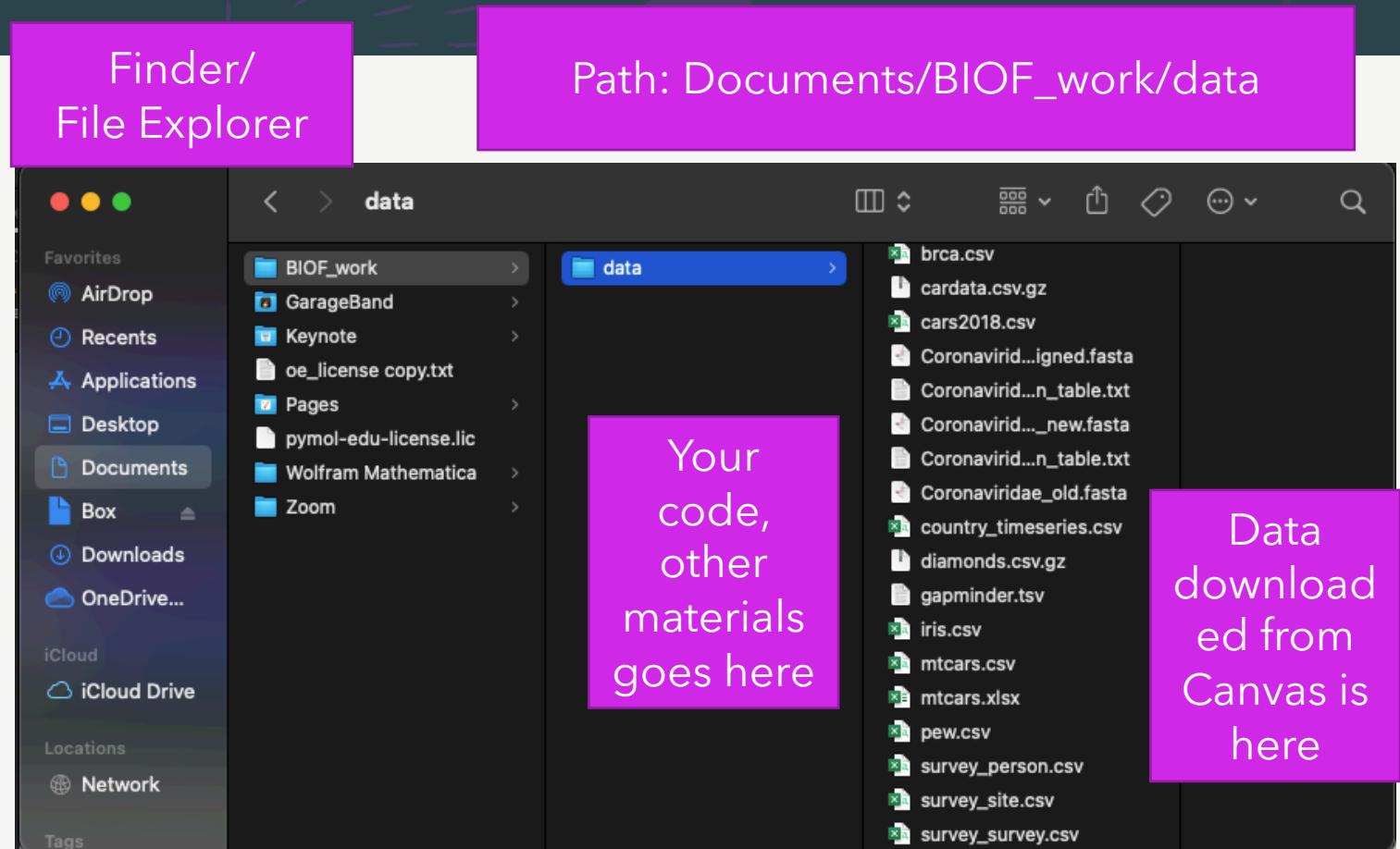
Path: Documents/BIOF_work/

- You will download a compressed file called data.zip from canvas
- It then needs to be decompressed
 - Mac: Double click
 - Windows: right click select decompress
- If you are using a computer owned by the NIH you may have issues, let us know if this doesn't work



Data download

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- Should look like this when completed.



Installation of packages

- Packages are like extras to make python more powerful and specific; we will talk more about how they work and what they are tomorrow
- There are a couple of options to do this part
- (1) Use the anaconda navigator GUI to download necessary packages (I will demo this)
- (2) If you are comfortable with Bash (and using Mac or Linux) there is a script on Canvas called “create_env.bash” that you can run on the command line which will download the packages we need and create a python environment for the course (it only has the required modules)
- Both methods will accomplish the same goal, we will talk about python environments a little bit - but its like creating a bag with all the tools you need for a specific project

Packages to Install

Required:

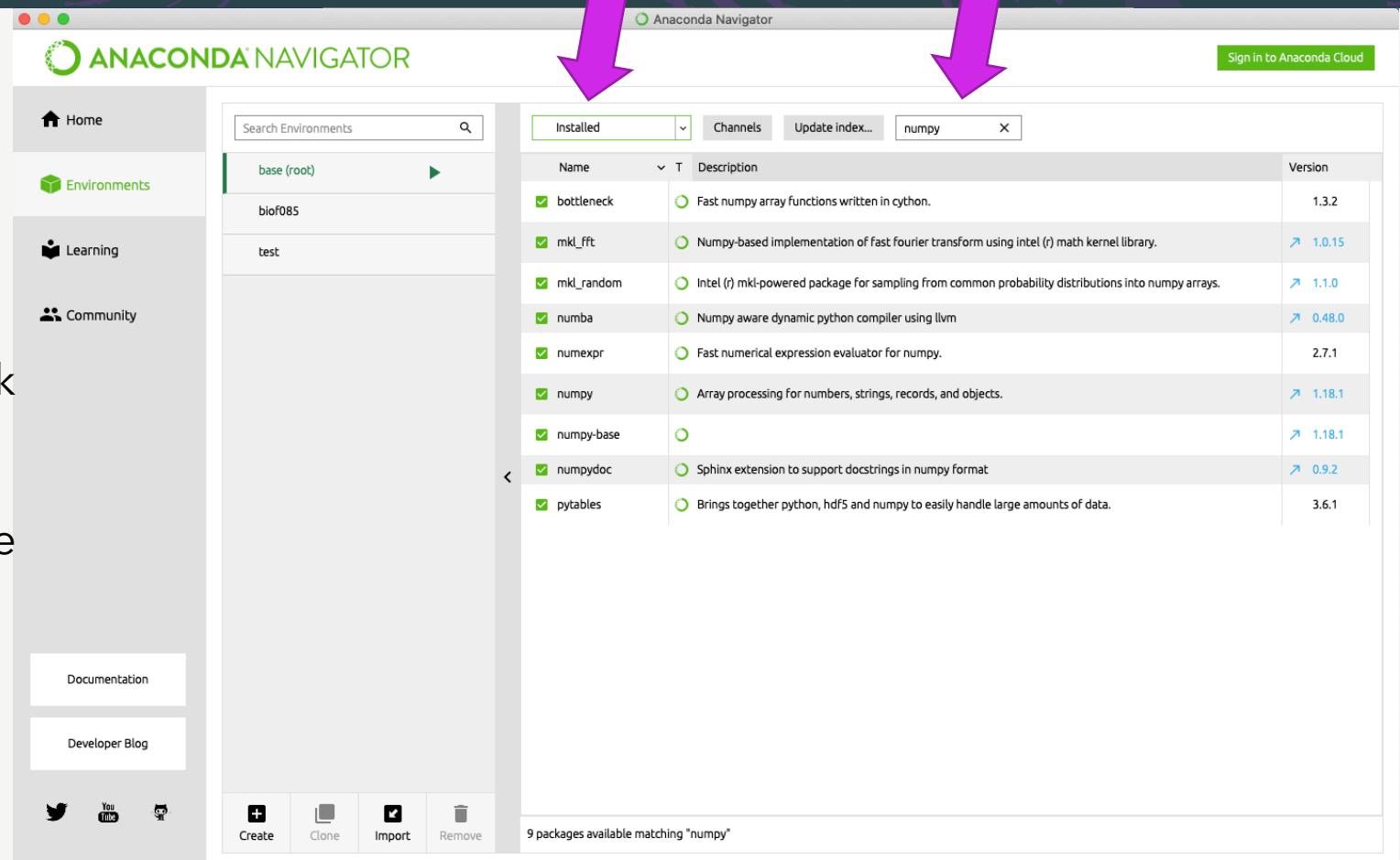
- numpy
- pandas
- matplotlib
- biopython
- scikit-learn
- seaborn
- scipy

Optional for plotting:

- To run the 03_python_vis notebook you will need these, but not for any of the independent work
- Plotnine
- Plotly.
- Bokeh
- Altair
- graphviz

Installation of packages: Through the GUI

- anaconda navigator->environments->base(root)
- Search each name if they come up when the dropdown menu says 'Installed` - you are good
- If they come up with `not installed` click the box on the left and press apply It will appear green box bottom right
- If they still dont come up press "update index" try again
- If that still doesn't work talk to the instructors



Python 3.7 and 3.8

- One major downfall of python is compatibility issues
- There is one location in this workshop on day 2 relating to seaborn that it makes a difference if you have 3.7 or 3.8 (it will be noted then as well)
- If you used the bash script to use an environment, you have 3.8 otherwise it is the version you downloaded
- Either is totally fine just make a note of it to avoid future confusion

Effective work environment

The image shows a desktop setup with several windows open:

- Spyder**: An IDE window titled "Spyder (Python 3.7)". It displays code in a text editor and a console window labeled "Console 1/A".
- Path to your working directory**: A file browser window showing a folder structure. The path "/Users/gabygerlach/Box/Class_working_directory" is highlighted with a pink arrow.
- Folder with data and code files**: A file browser window showing a folder named "data" containing a file "coding_day1.py".
- PDF for section**: A PDF viewer window titled "00_python_primer.pdf (page 2 of 26)" showing two questions related to Python syntax.
- Ideally Zoom will be on another monitor/Ipad**: A text overlay at the bottom left.
- Status Bar**: At the bottom, it shows system information: Kite: indexing, conda: base , Python 3.7.6, Line 2, Col 24, UTF-8, LF, RW, Mem 66%.

Quick Demo of Spyder and Jupyter