# BINF90004 Single cell RNA-seq case study

## Week1 - Overview & motivating examples

Dr Jiadong Mao

Sep 2023

# Welcome!

- About me.
- About you.

# Course information

- Lectures
  - 1.5h on Mon & Wed; 1h on Tue & Thur;
  - Lab session will be incorporated into the lectures.
- Consultation hours
  - Your preference?
- Q&A out of consultation hours: Ed.
- 3 quizzes, 5 assignments: goal is to monitor learning, will involve R programming (no more than what appeared in the lectures).
- Mid-term exam, final exam: mainly about understanding, some derivagions, no programming.
- Any question?

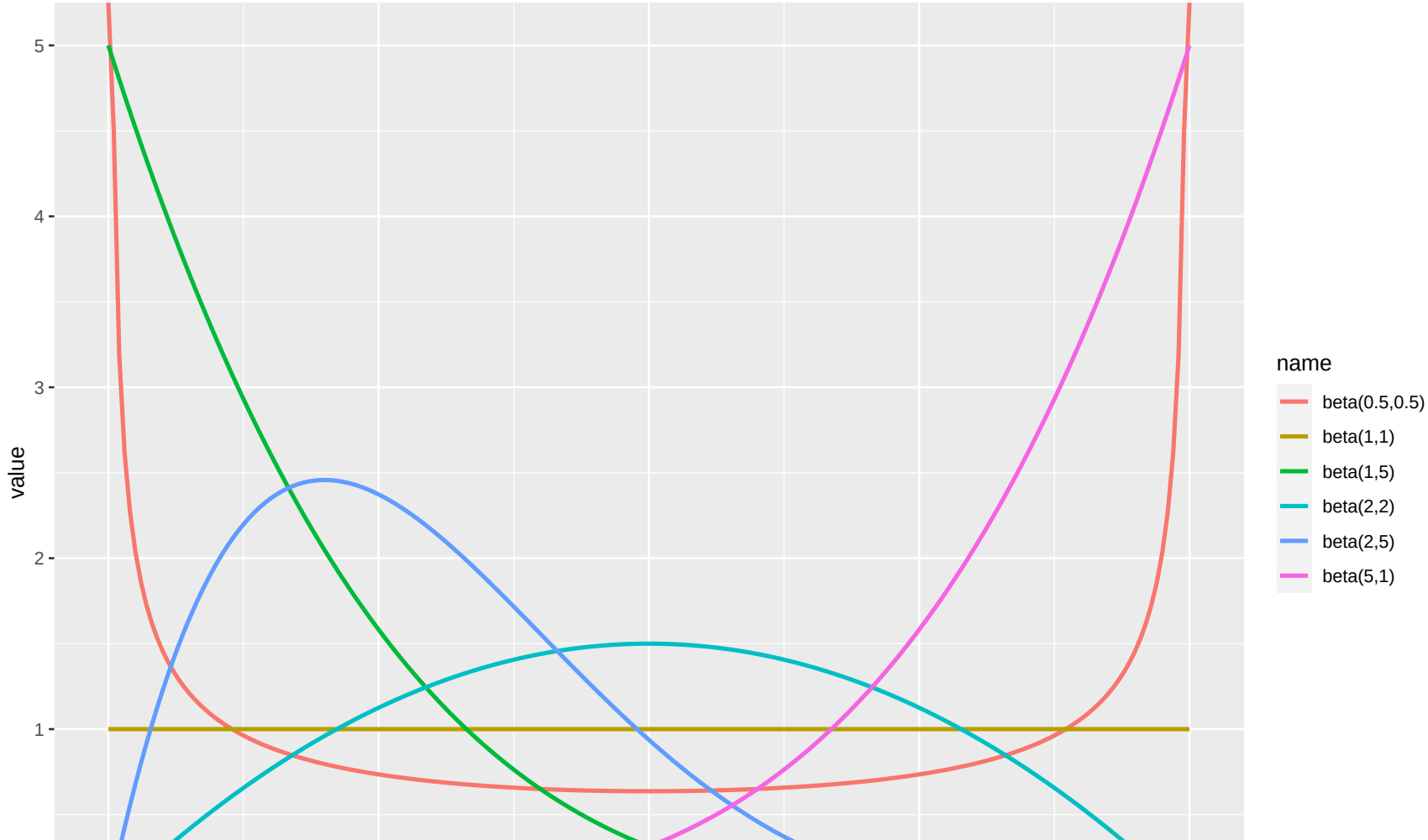
# Course overview

```
knitr::opts_chunk$set(cache=T, message = F, echo=T)
```

- What the course is about?
  - Bayesian inference: a Bayesian version of undergraduate level mathematical statistics;
  - Topics include: fitting distributions to data, group comparisons, linear models, generalised linear models;
  - Learn to appreciate advantages of Bayesian approaches.
- Mathematics: will involve a lot of derivations; but much has been seen in prerequisite courses.

# Example (contd)

```
## Warning: Using `size` aesthetic for lines was deprecated in g
## i Please use `linewidth` instead.
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_lifecycle_warnings()` to see where this
## generated.
```



# Posterior

- How data change belief: eg $a = 2, b = 20, y = 0$