

# Single cell RNA sequencing data analysis, 30 Jan – 3 Feb, 2023

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# National Bioinformatics Infrastructure Sweden (NBIS)

Consultations



Future compute infrastructure



Compute projects  
Software and databases



Training



Data publishing and open science  
Secure sharing of sensitive data



Efficient tools and workflows



Research support

# Need help from NBIS?

- Drop-in sessions at all universities (now online)  
14.00 Tuesdays
- Consultations
- Courses
- Support:
  - Long-term support (Peer reviewed)
  - Fee-for-service support, hourly fee
  - Partner projects
- Data center

[www.nbis.se](http://www.nbis.se)

# Practical information - Slack

- Communication around the course will be handled via slack.
- Please add picture and brief description
- Channels:
  - #general – general information about the course
  - #exercises – questions during exercises
  - #installation\_issues – questions about the installations

## Practical information

- All code and links to lectures etc. via our github page: <https://github.com/NBISweden/workshop-scRNAseq>
- Lunches: In Café Delta – we have reserved tables. Just queue up and say that you are from the course.
- Course Dinner – we will send around the menu and a form to fill out what dish you want.

# scRNA-seq overview



- What method....

- Smartseq2/3
- 10x
- CITE-seq
- SPLIT-seq
- ....

Raw data:  
fastq files

Data analysis

# scRNA-seq analysis overview

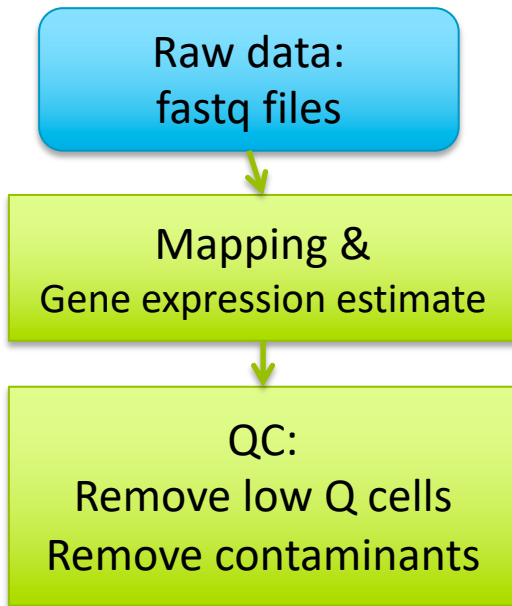
Raw data:  
fastq files



Mapping &  
Gene expression estimate

- Cellranger (10x)
- Dropseq - Alevin/Kallisto Bustools (transcriptome only)
- Dropletutils
- nf-core/scrnaseq
- ....

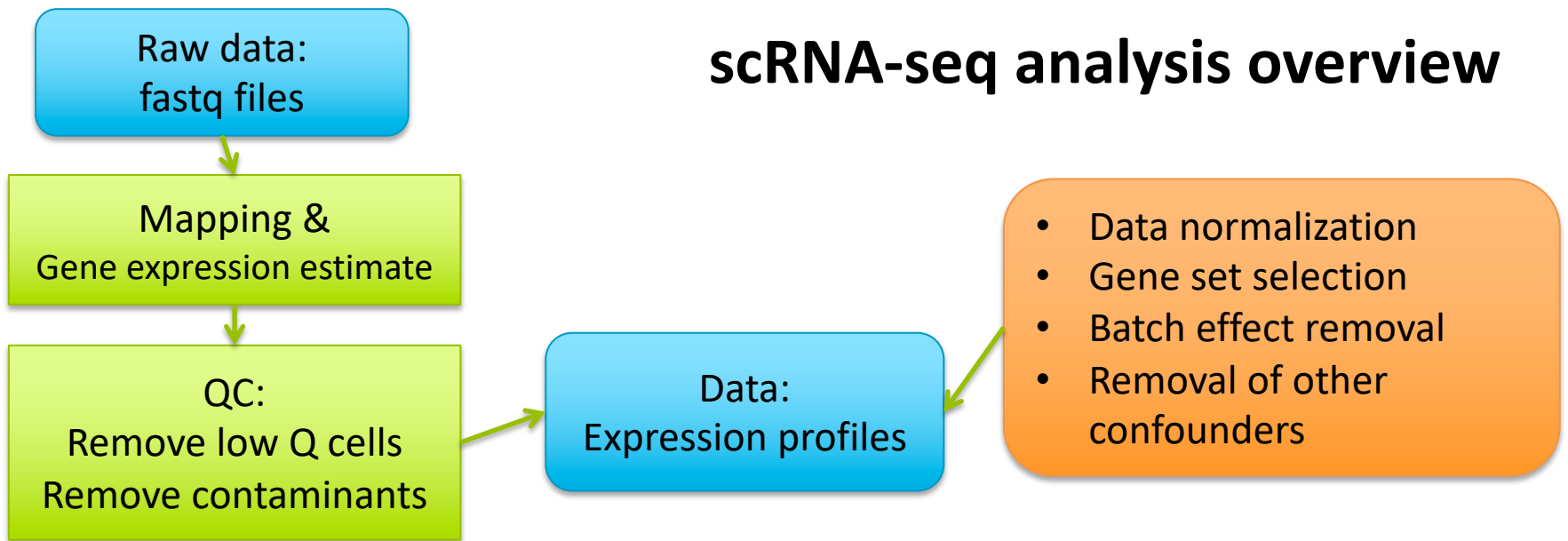
# scRNA-seq analysis overview



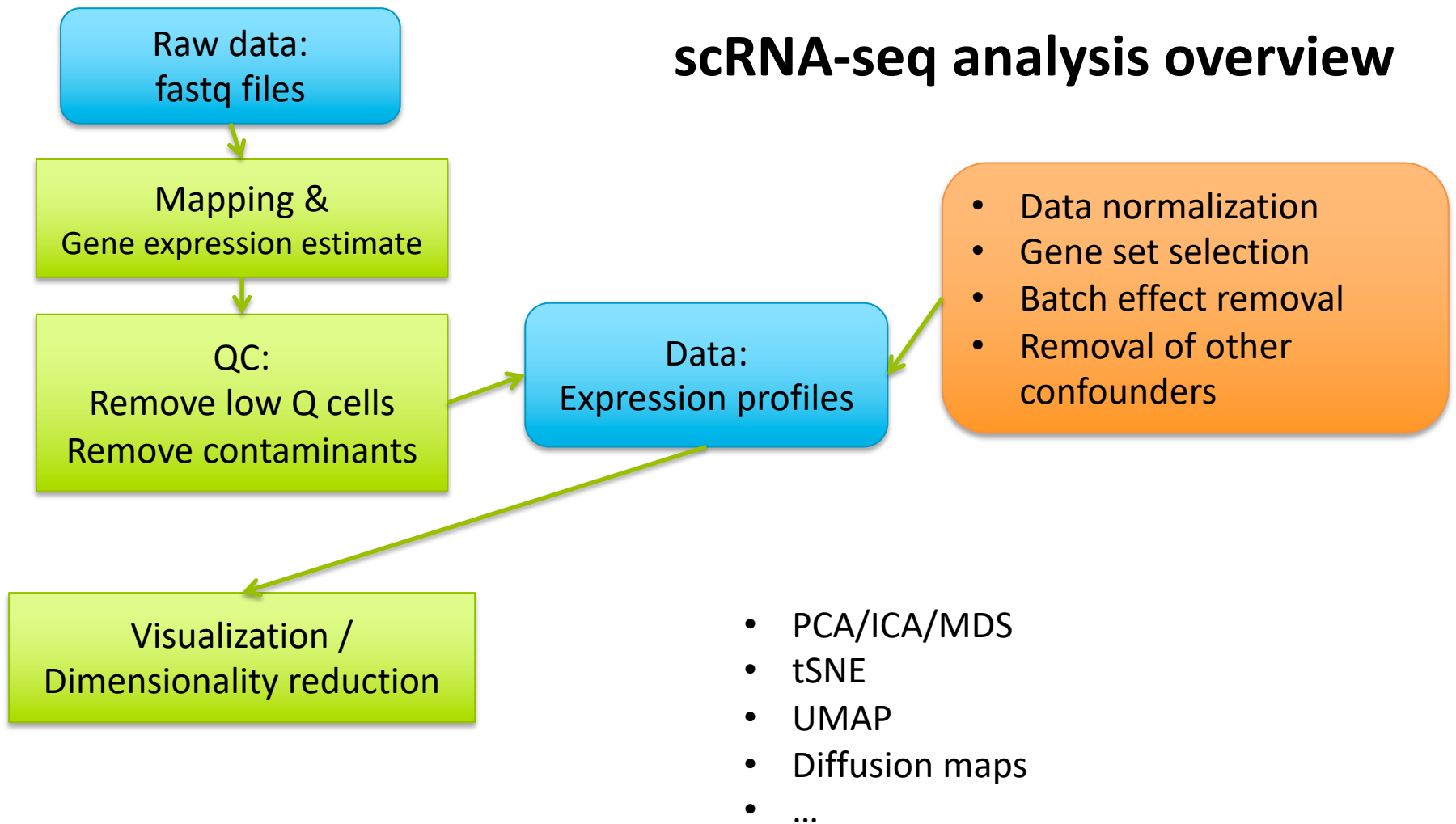
- Low/high number of reads
- Low/high number of genes
- Intronic reads
- Mitochondrial content
- Mapping stats
- ...



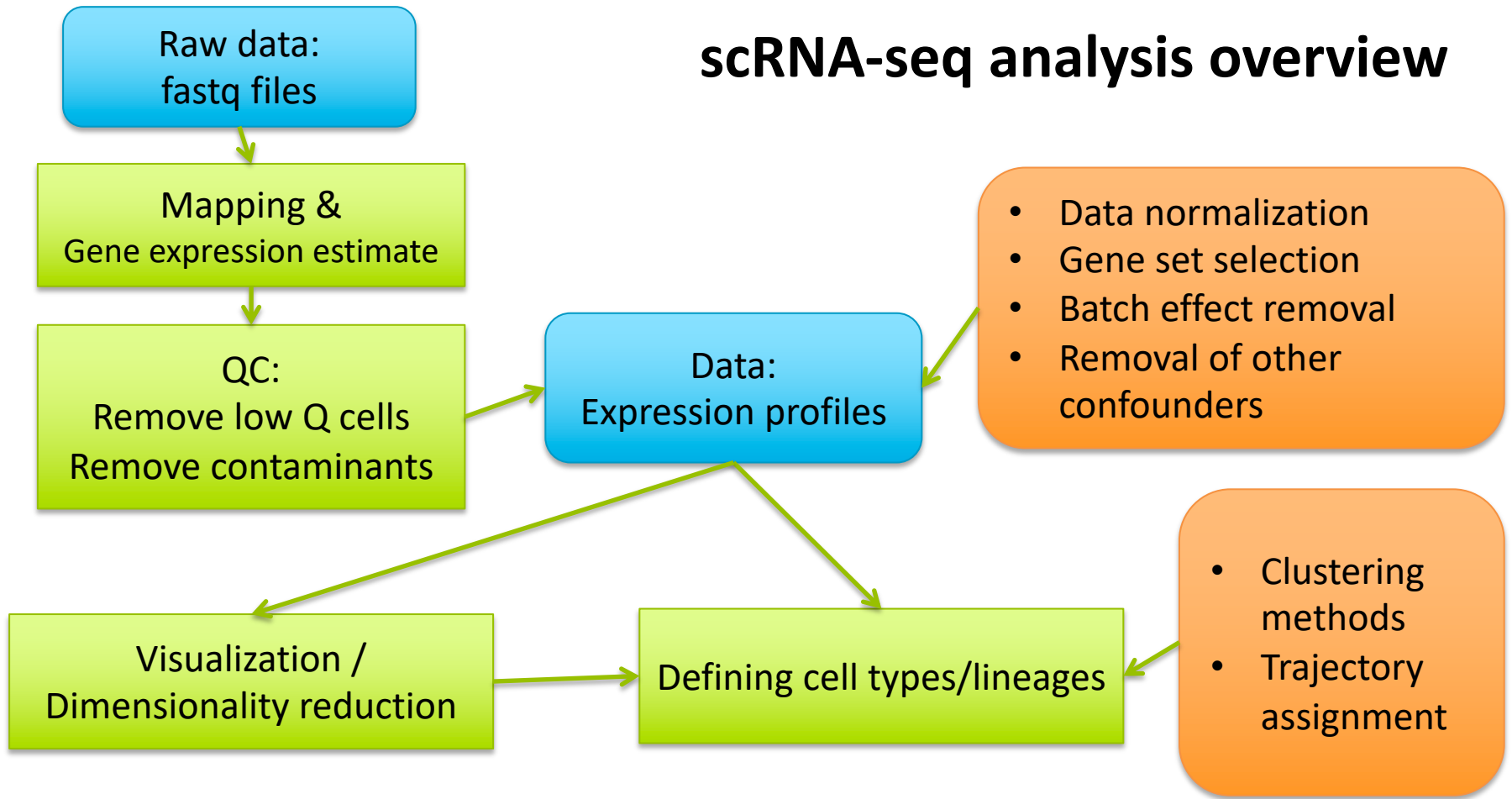
# scRNA-seq analysis overview



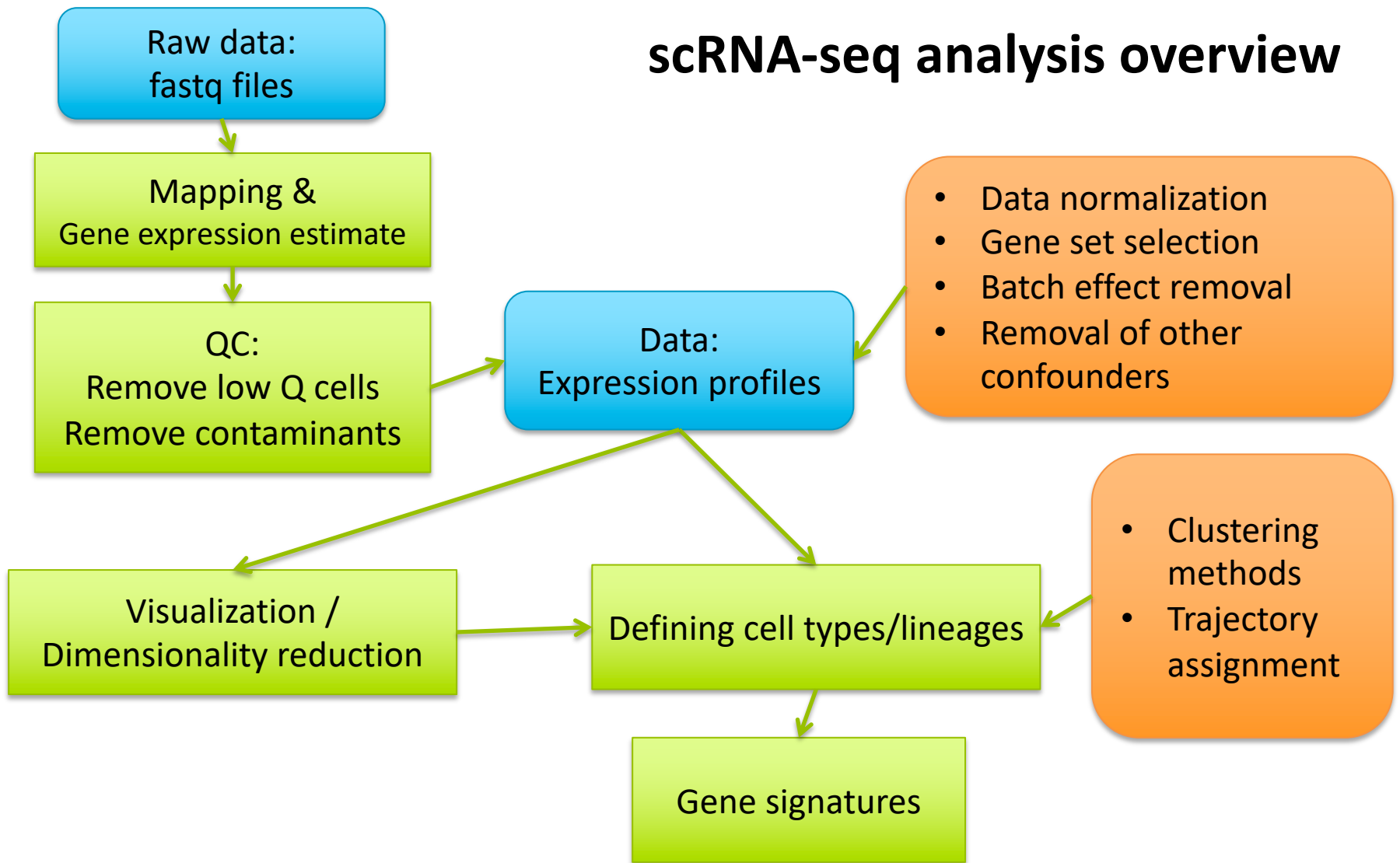
# scRNA-seq analysis overview



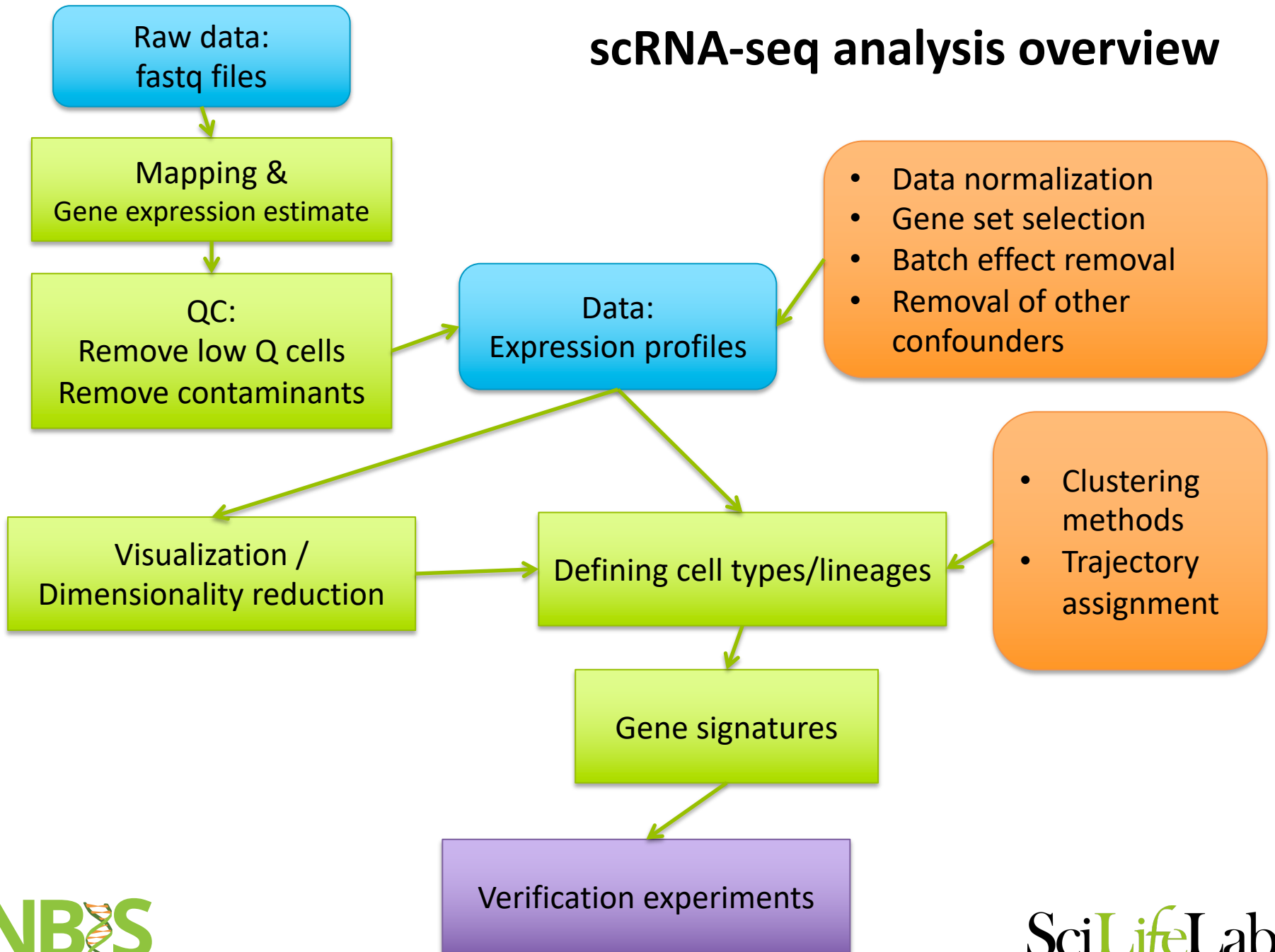
# scRNA-seq analysis overview



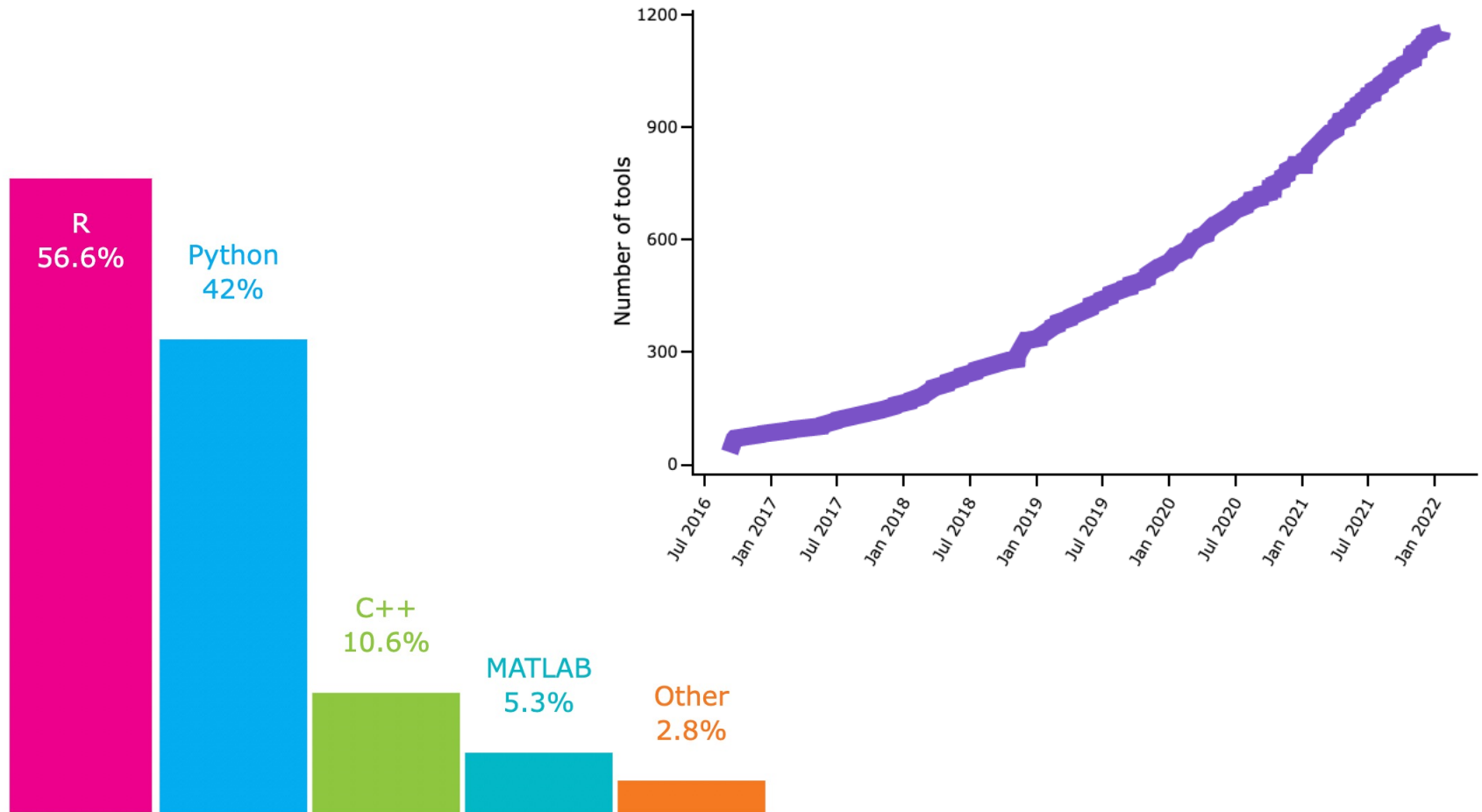
# scRNA-seq analysis overview



# scRNA-seq analysis overview



# Many available tools for analysis



## In this course

- We have selected a set of tools/pipelines that we think are relevant for most cases.
- Cannot cover all tools that are out there.
- Use your common sense to select methods for your problem.

# PLEASE ASK QUESTIONS!

