

Diverse multimodal single-cell data



Various combinations of multimodal data

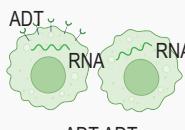
Single dataset & multimodalities



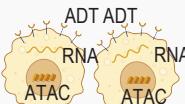
Multiple datasets & non-overlapping multimodalities



Multiple datasets & overlapping multimodalities

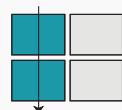


Multiple datasets & fully matched multimodalities

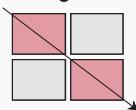


Lead to different integration strategies

Vertical



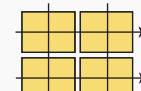
Diagonal



Mosaic



Cross



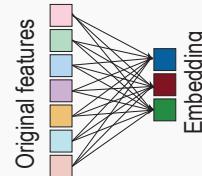
Multitask benchmark



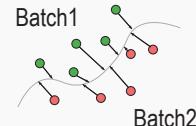
github.com/PYangLab/scMultiBench/
shiny.maths.usyd.edu.au/scMultiBench/

Lead to different analytical tasks

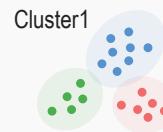
1 Dimension reduction



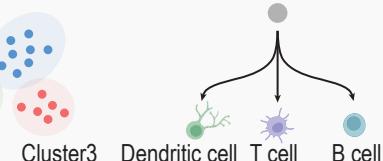
2 Batch correction



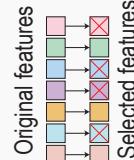
3 Clustering



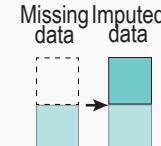
4 Classification



5 Feature selection



6 Imputation



7 Spatial registration

