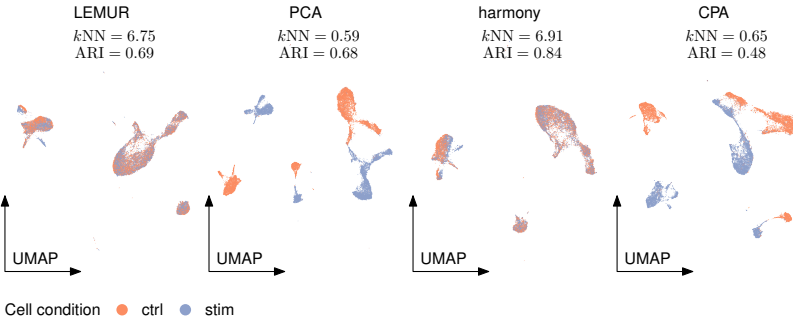
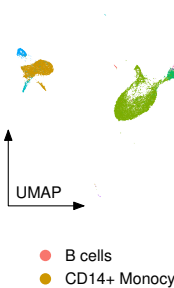


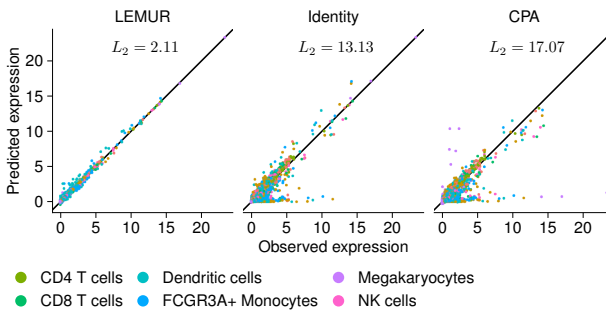
# (A) Latent space ( $Z$ ) of Lupus patient samples treated with IFN- $\beta$ (Kang)



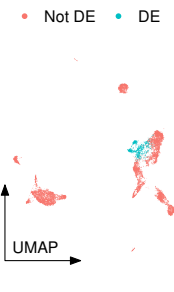
## (C) $Z$ colored by cell type



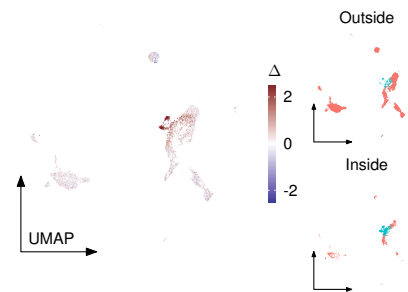
## (D) Predicted vs. observed gene expression per cell type



## (F) Simulated DE

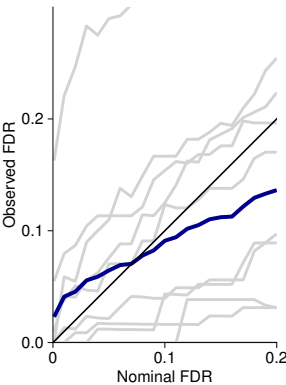


## (G) Predicted DE with neighborhood



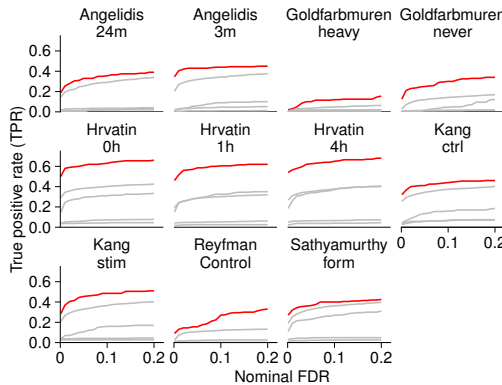
## (I) FDR control

Eleven datasets (mean)

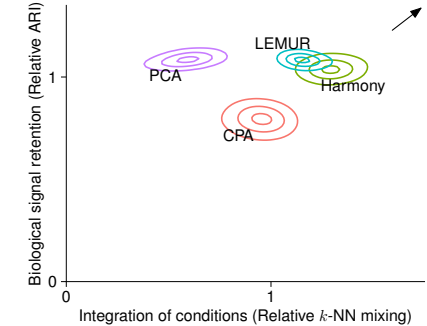


## (J) DE-test Power

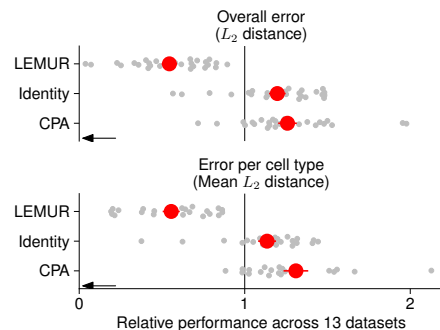
Comparison of LEMUR against four other DE. methods



## (B) Integration Performance

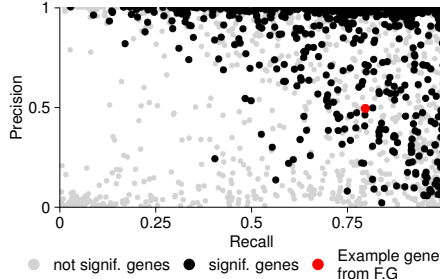


## (E) Prediction performance



## (H) Neighborhood Precision and Recall

Overlap of neighborhood and simulated ground truth



## (K) Power by no. cell with expr. change

Fraction of simulated genes (grey) with  $\min FDR_g < 0.1$  (blue)

