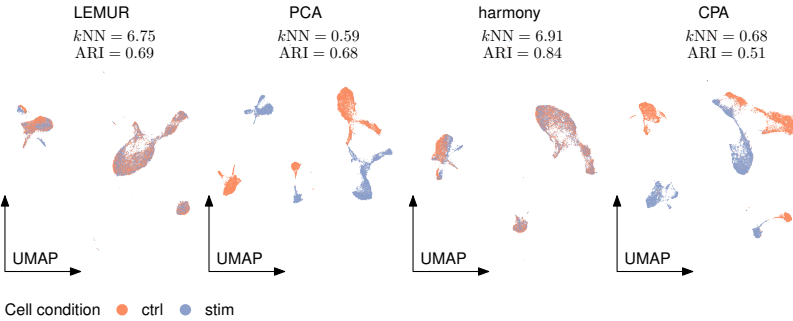
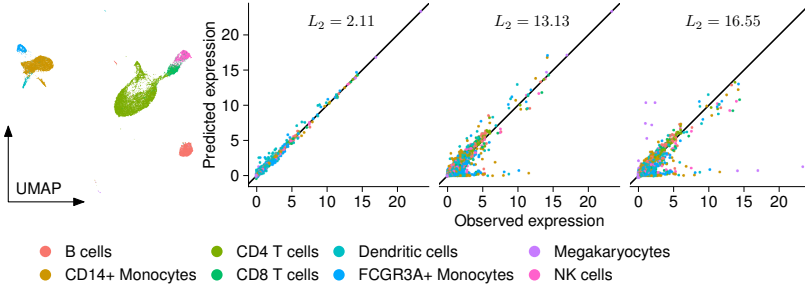


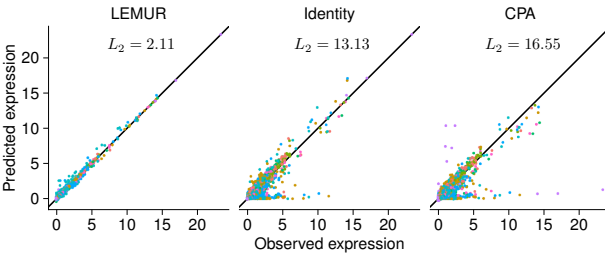
**(A) Latent space ( $Z$ ) of Lupus patient samples treated with IFN- $\beta$  (Kang)**



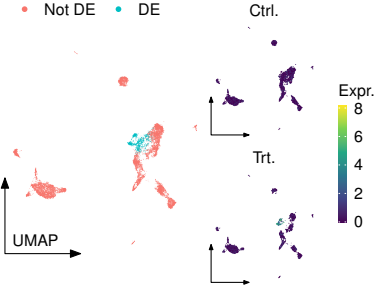
**(C)  $Z$  colored by cell type**



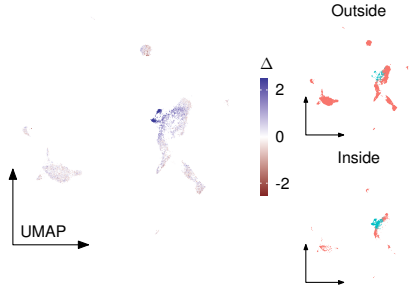
**(D) Predicted vs. observed gene expression per cell type**



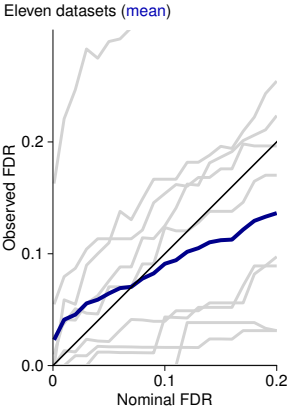
**(F) Simulated DE**



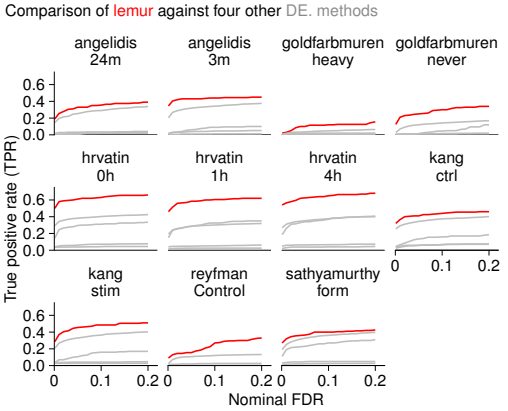
**(G) Predicted DE with neighborhood**



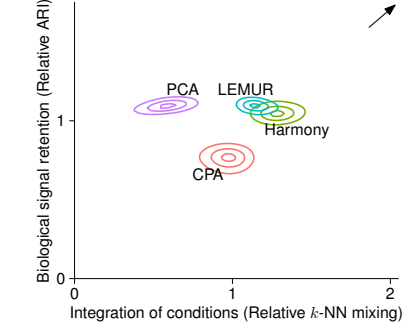
**(I) FDR control**



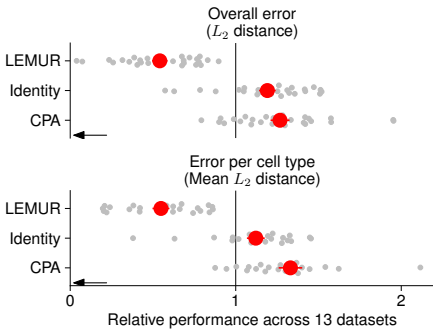
**(J) DE-test Power**



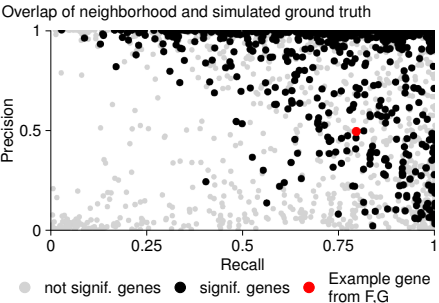
**(B) Integration Performance**



**(E) Prediction performance**



**(H) Neighborhood Precision and Recall**



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

