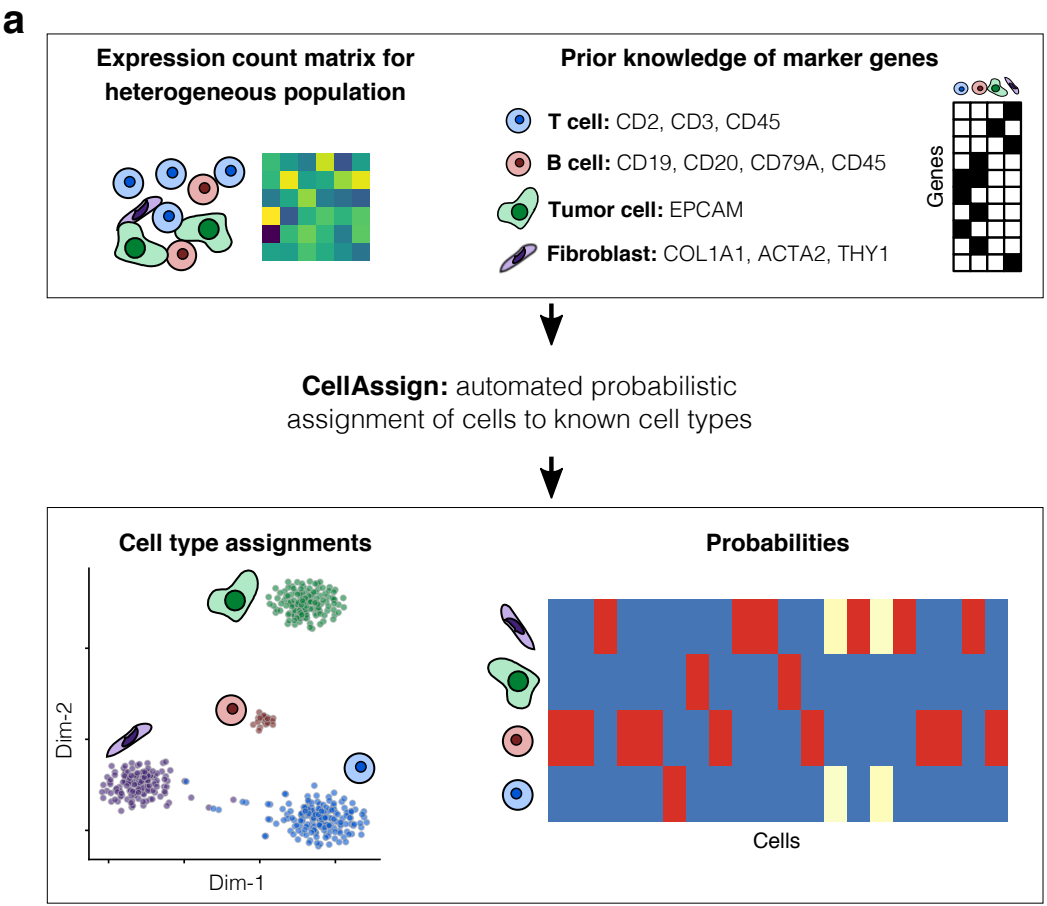

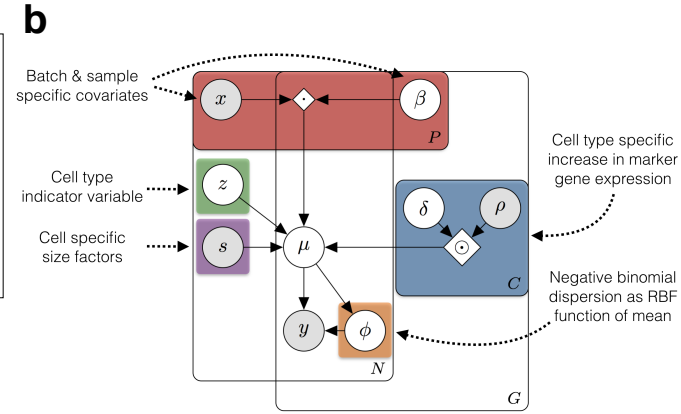

c

Variable	Distribution	Description
y_{nc}	Negative Binomial	Single-cell counts
s_n	None	Cell size factor
z_n	Categorical	Cell type indicator
ϕ_{ngc}	Deterministic f^n	Negative binomial dispersion
δ_{gc}	Log-Normal	Marker over-expression
ρ_{gc}	None	Marker-cell type matrix
x_{np}	None	Covariates (batch or sample)
β_{pg}	Gaussian	Covariate coefficients
a, b	None	Dispersion basis coefficients