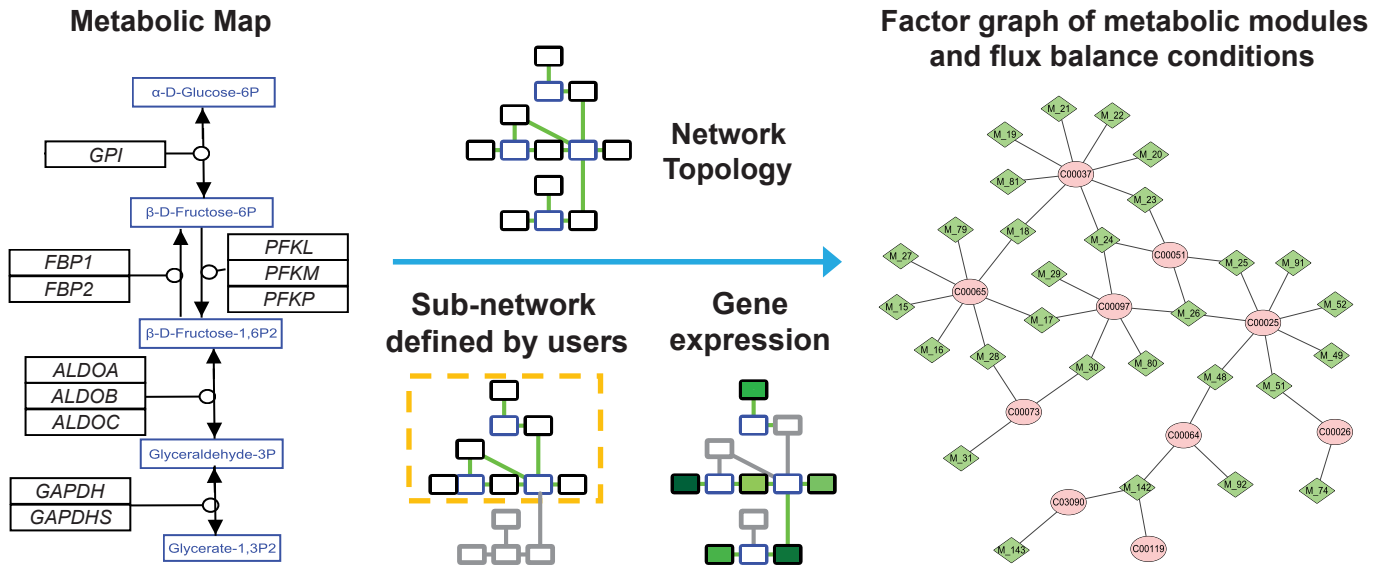
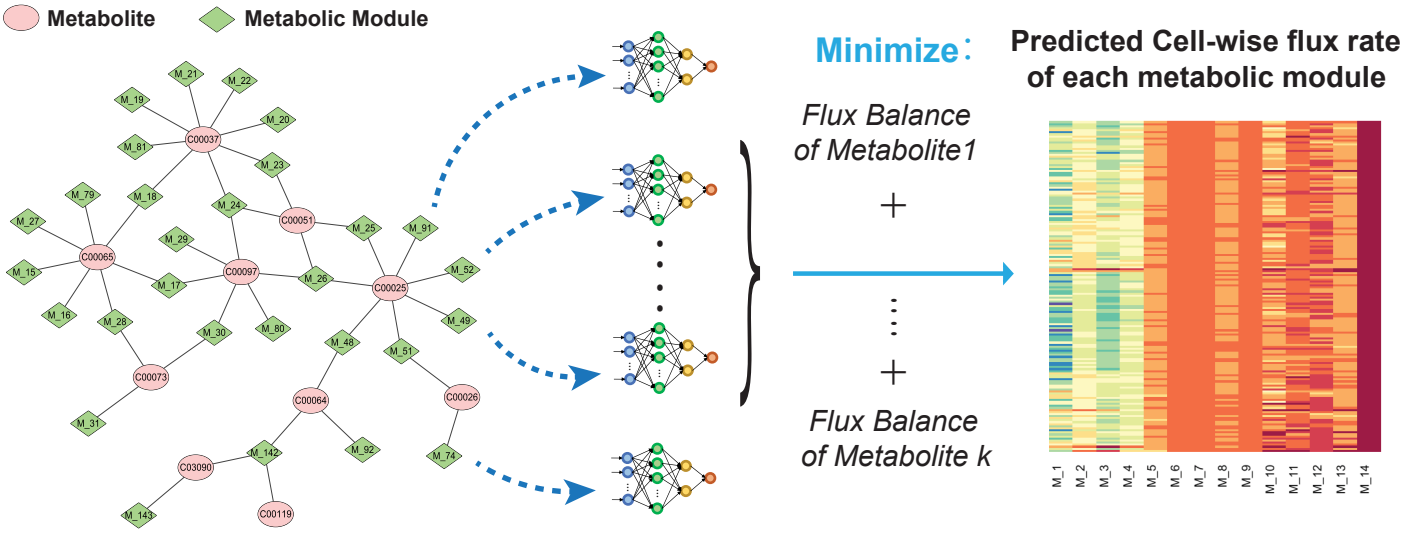
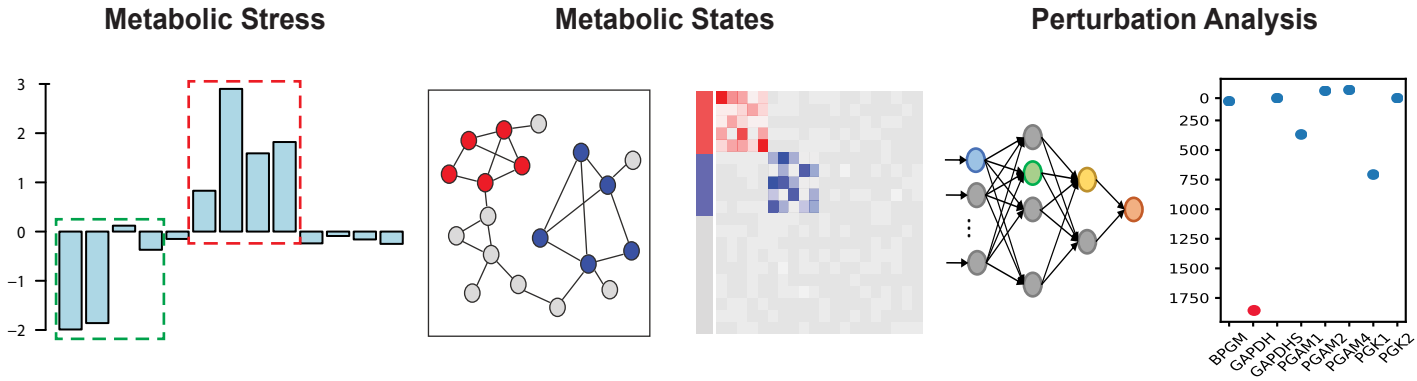
A. Network reduction and reconstruction into factor graph



B. Flux Estimation

$$L = \sum_{\text{Cells}} \sum_{\text{Metabolize}} \text{Flux Balance Loss} + \sum_{\text{Modules}} \text{Non-Negative Loss} + \sum_{\text{Modules}} \text{Inconsistency with Gene Expression} + \text{Flux Scale}$$



C. Downstream Analysis