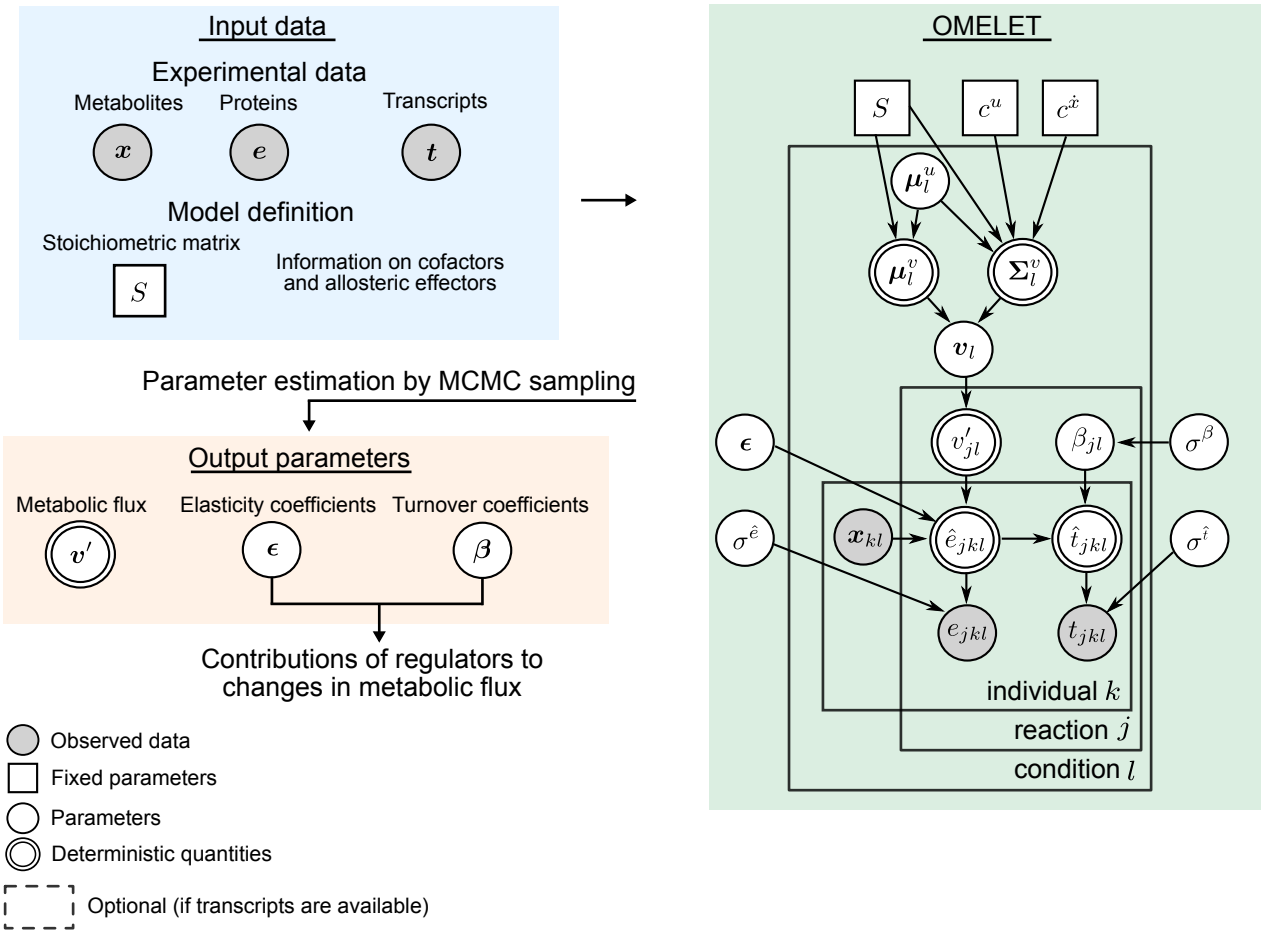

Figure S2. Overview and the graphical model depiction of OMELET. Related to Figure 3.
The inputs of OMELET were the experimental data of the amounts of metabolites ***x***, proteins ***e*** and transcripts ***t*** from the same individual mice in each condition as well as model definitions including stoichiometric matrix and information on cofactors and allosteric effectors. The outputs were metabolic fluxes in the glucose metabolism ***v'*** in each condition, elasticity coefficients ***ε*** and protein turnover coefficients ***β***. In the graphical model, the plate indicates that the group-level structure holds for all the reactions $j = 1,...,r$, individuals $k = 1,...,n_l$, and conditions $l=1,...,g$. The arrows denote conditional dependences between two nodes representing the generating processes (STAR Methods). Shaded circles, unshaded squares, single-bordered circles and double-bordered circles represent observed data, fixed parameters, parameters and deterministic quantities, respectively. Using the elasticity coefficients and turnover coefficients, we can calculate contributions of regulators to changes in metabolic flux between conditions.