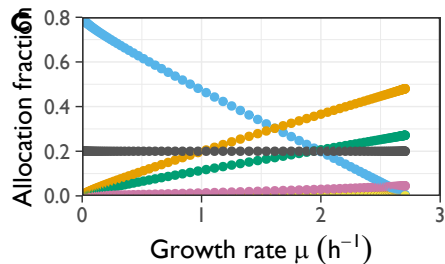
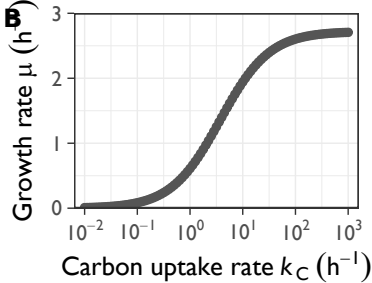
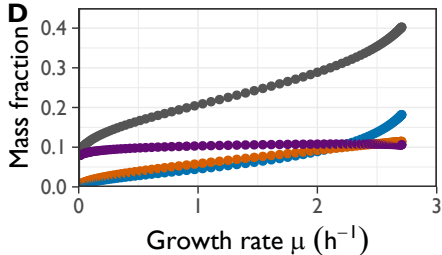


**A****Protein**

- ribosome R
- amino acid synthesis  $E_A$
- housekeeping Z
- nitrogen uptake  $E_N$
- carbon uptake  $E_C$

**B****D****Metabolite**

- total
- carbon c
- amino acid a
- nitrogen n