MULTI-SUBSTRATE REACTIONS

- So far, we have only considered simple enzymatic reactions
  - AKA , one substrate interacting with the enzyme

- Reactions that involve multiple substrates are way more common
  - In general, these types of reactions can be classified into one of three categories
    - Random Substrate Binding
    - Ordered Substrate Binding
    - The Ping-Pong Mechanism
  - We will not cover these in this class, but be aware they exist

THINGS TO KNOW

- The Major Players :
  - Enzyme
  - Substrate
  - Enzyme-Substrate Complex
  - Enzyme-Product Complex
  - Rate Constants

- What is a Rate Limiting Step ?

- Michaelis-Menten Kinetics
  - General Assumptions
  - What is the Equation
  - k_{cat} = ?
  - K_M = ?
  - $\frac{k_{cat}}{K_M}$ = ?
  - V_{max} = ?
    - How can these numbers be used to further our understanding of enzyme characteristics?
    - How do mutations affect these values?