

WHAT IS THE "GOAL" OF MOLECULAR BIOLOGY?

- SHOW SIDE OF MECHANISM

THIS IS A MODEL OF A COMPLEX REALITY.

IMAGINE GENERIC ENZYME THAT BREAKS DOWN AB₂ CONFER^{RESISTANCE} RESISTANCE. THINK OF AS MANY MODELS AS POSSIBLE FOR THAT PROCESS.

- KIN SCHEME
- CIRCLES
- LOGIC DIAGRAM
- STRUCTURAL MODEL
- BALL AND STICK MODELS

MODELS:

- ARE APPROXIMATE AND MUST BE B/C THEY CAPTURE WHAT YOU THINK IS IMPORTANT.
- MAKE PREDICTIONS → ALLOW MANIPULATION.

- THREE BASIC CLASSES

1. REDUCTIONIST (BOTTOM UP)
2. HOLISTIC (TOP DOWN)
3. HYBRID (MACHINE LEARNING)

- TYPICAL MOLECULAR BIOLOGY:

- GENETICS (EPISTASIS, K.O)
- RECONSTITUTE TO IDENTIFY NECESSARY AND SUFFICIENT
- PREDICT HOW PERTURBING ALTERS PHENOTYPE
- MANIPULATE IN ORGANISM