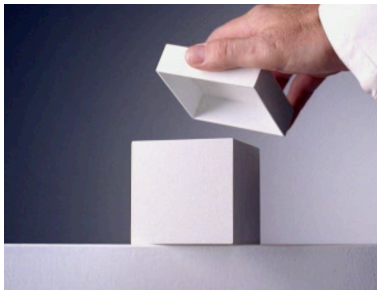


System Engineering

20.109(F09)
M2D2 lecture
10.20.09

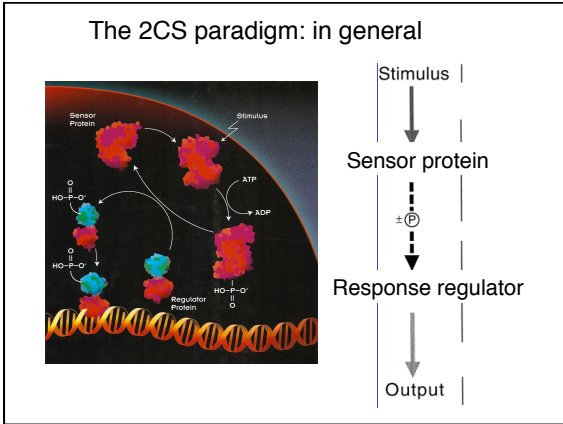
Biology as technology

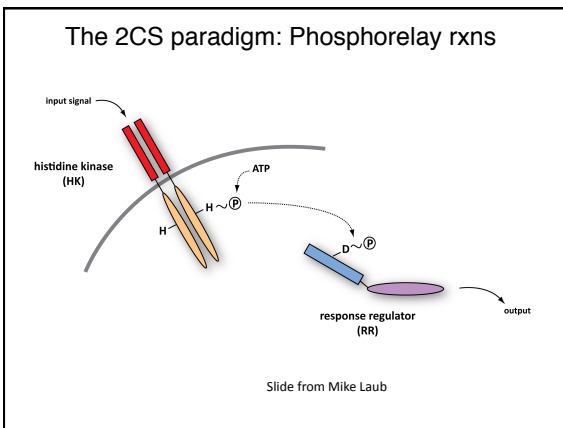


PHILIPS
sense and simplicity

As simple as the box it comes in...

Stimulus	Response
carbon source	motility, chemotaxis
pH	stress, virulence
oxidative stress	superoxide dismutase
temperature	heat shock proteins syn
bacterial density	quorum response
nitrogen	metabolic changes
osmotic stress	uptake/output changes
...	





The 2CS paradigm: Phosphorelay rxns

RXN 1: Autophosphorylation in response to stimuli

RXN 2: Phosphotransferase from Sensor to Response regulator

RXN 3: Phosphatase inactivates Response regulator, resets system

