2:50-3:15pm: Intro to Mechanistic Modeling *(White Board Exercise)*

Goal: *Have students understand a compartment model conceptually. Have them ask a mechanistic question related to their research question and draw its model diagram.*

People: Would be helpful to have one facilitator and one scribe.

2:50-3:00pm: ASK: *What do we mean by mechanism? What might be the focus of a mechanistic model?*

- Mechanistic models focus on *process* and attempt to describe *causation*
- In a statistical model, the actual "model" was an equation describing a relationship between two (or more) variables
- In a mechanistic model, the actual "model" is often a *system of equations* which require calculus-based approaches to explain the *process* of change over time.
- In short, mechanistic models are defined by *dynamic equations*
- When modeling mechanism, it's useful to think about how the major "states" of your system change through various processes
- **ASK:** *What is an example of a research question about our topic that can be tackled with a mechanistic model?*

3:00-3:05pm: ASK: *What are the* **states** *associated with this research question?*

- Brainstorm.

3:05-3:10pm: ASK: *What are the* **processes** *associated with this research question?*

- Brainstorm.

3:10-3:15pm: ASK: *What are the* **essential states and processes** *related to the very simplest system?*

- Erase all the excess stuff.
- Draw the model diagram.
- Write the system of equations.