***Refining Research Questions for Modeling***

**Monday, December 12, 2022: 3:00-5:30pm**

**3:00-3:30pm:** Cara revisits group-chosen questions from yesterday and:

1. makes a statistical framework from the statistical question (define x and y, the model family, and the link function)
2. draws a model diagram showing the processes (flows) and influence arrows of one state on another

*This serves as an example of what we will do with each student in the small group session.*

**3:30-3:35pm:** Divide the students into five groups of five or six. Have at least one instructor accompany each group and separate out into various corners of the facility.

* Groups: (1) Gwen + Sophia (2) Michelle, (3) Andres, (4) Cara + Santino, (5) Christian

**3:35-4:50pm:** Instructor should scribe and facilitate discussion, preferably on white board or large sheets of paper.

* **Spend ~15min on each group member, one-by-one. Give 3-5 min for the statistical question and 7-10 min for the dynamical. Keep track of time or you will get behind!**
* Ask the student for his/her question statistical question and dynamical question and write at the top of the page for all to see. If the question can’t be modeled dynamically, guide the student to a complementary question that can.
* **For the statistical question, guide the student to define x and y, the model family, and the link function. Move on quickly from this model.**
* **For the dynamical question, briefly brainstorm ‘populations’ and ‘states’ and ‘processes’ and ‘influences’ for the system represented by each question**
* Guide the group into construction of a rough ‘model diagram’ that matches each research question and highlight possible states and processes within that system.

**4:50-5:15pm:** Regroup with whole group and close with brief discussion. Review ‘Make a Model Diagram’ HW.