Modeling Retention in the Major
Marcia J. Belcheir, Ph.D., Boise State University

**Issues with the IPEDS Retention and Graduation Cohort Model:**
- Less than a quarter of our graduates were part of the IPEDS FTFT cohort.
- Reporting to departments on the retention of their majors required the assumption that students stayed in the major they selected upon arrival. However, most students (85%) changed their major at least once before graduating.

The Enrollment Flow Model:
I used the concept of in-migration and out-migration and the same 5 years of data to model enrollment flow and address two basic questions:
- What happened to a department's fall undergraduates one year later? (Fate model that is a summative evaluation of outcomes)
- Where did a department's current fall enrollments come from and are they shifting? (Source model that is a formative approach to student types)

Other ways we have used this model:
- Model STEM vs. non-STEM majors to measure retention in STEM instead of retention in the department
- Study changes in outcomes based on academic level, e.g., Freshmen vs. Seniors outcomes

**Fate model:** What happened to a department's fall enrollees one year later?

**Source model:** What are the sources of a department's fall enrollments?

Q: Based on these outcomes, is this a healthy department?  
A: Enrollments are growing. However, the percentage of students being retained in the department is dropping and more are selecting other majors. Graduation rates are stagnant.

Q: What is the main source of this department's majors?  
A: In addition to those retained, many new students select this major upon entry to the university, indicating that this is a well-known major.