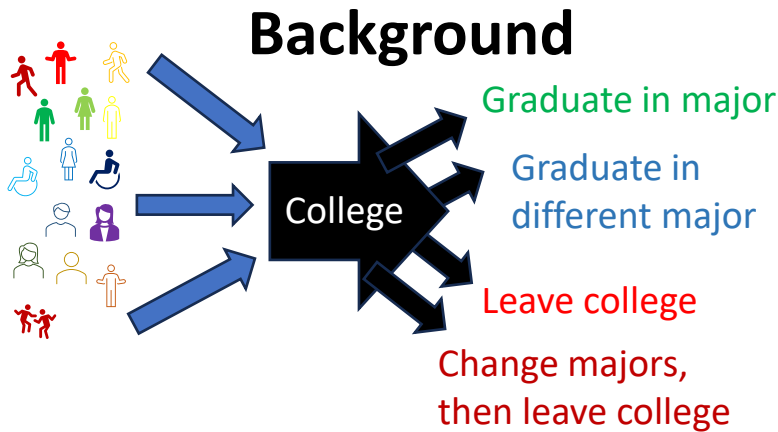
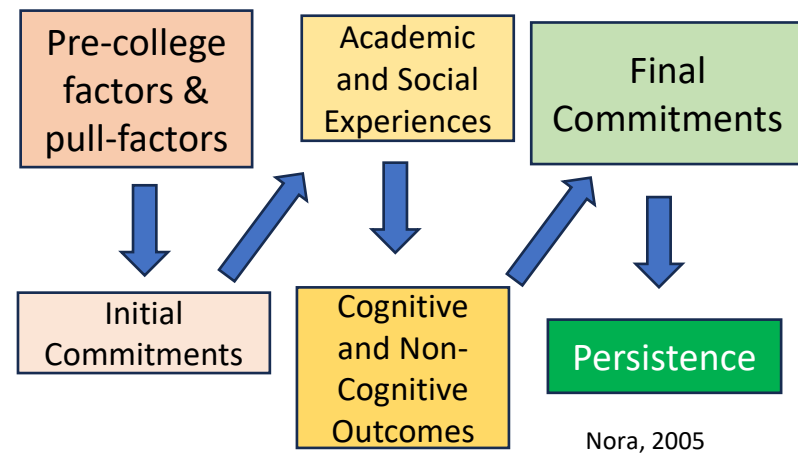


What factors influence undergraduate student retention, centering STEM?

#2422358: Developing Advanced Statistical Modeling Skills to Understand the Complexities of Student Persistence in STEM



Theoretical Framework: Conceptual Model of Student Persistence



Methods

- Secondary analysis of data from the Higher Education Research Institute (HERI), 2015-2023
 - Paired Freshman and Senior Data
 - Faculty and Staff Data
- Generalized hierarchical linear models with effects coding and structural equation models

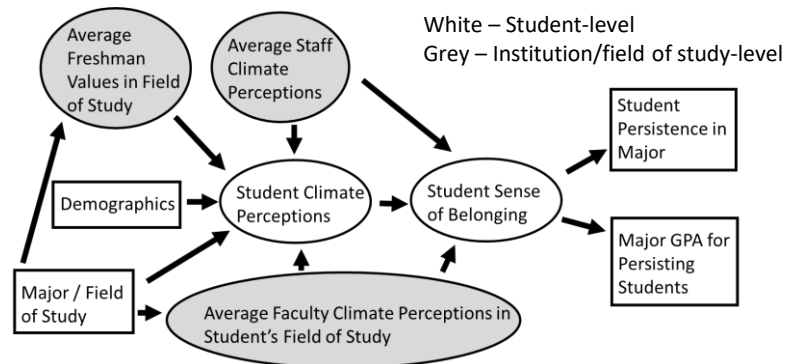
What is Not Yet Known

- What can we learn from modeling all students and majors more granularly than "STEM" and "non-STEM," not just focusing on STEM?
- How can we support all students by understanding how experiences impact students differently across a range of backgrounds and experiences?
- What is the relationship between staff and faculty climate perceptions and student persistence?

My hypothesized HGLM: Student-level factors influencing persistence, clustered by institution



My hypothesized SEM: Social experiences influence on cognitive and non-cognitive outcomes on persistence



Challenge Area

Modeling

- Selecting variables (>100!)
- Possible subsets of models by background or experience to better support all students?
 - First generation and continuing generation
 - Large university, small college