

UNL Department of Physics and Astronomy presents:
**Equity & Efficacy: Why Structural Change is Needed in Intro
STEM Courses**

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ABSTRACT

Foundational STEM courses at research universities often adopt a shared set of structures, including large class sizes, passive lectures, high stakes, inauthentic examinations, extensive content coverage, and more. Decades of research suggest that many of these structures are both less effective and less equitable than alternative approaches. Continued reliance on them has earned these courses a long-standing, nation-wide reputation as exclusionary; as driving away capable students interested in STEM disciplines and constructing inequitable barriers to success for a variety of student groups. In this talk, I will review some of this research, including new multi-institutional, multi-disciplinary results from the SEISMIC collaboration, and argue that increasing the efficacy and equity of these courses requires structural change. Structural change is challenging, and often requires institutional support. I will discuss examples of reform efforts that have successfully encouraged and enabled lasting change.