

CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, March 10

2:00 – 3:00 PM

Maria Sanford, Room 101

**DO DEVELOPMENTAL MATHEMATICS PROGRAMS HAVE A
CAUSAL IMPACT ON STUDENT RETENTION?
AN APPLICATION OF DISCRETE-TIME SURVIVAL AND
REGRESSION-DISCONTINUITY ANALYSIS**

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ABSTRACT

The impact of academic programs – such as developmental mathematics programs – on student retention, has been a controversial topic for administrators, policy makers, and faculty in higher education. Despite deep interest in the effectiveness of these programs in retaining students, scholars have been unable to determine whether such programs have a causal impact on student retention. Rather than assigning students to a developmental program based on a random assignment process as in a true experiment, most of the existing research up to this point has been non-experimental and has focused exclusively on whether student background and demographic characteristics are statistically significant predictors of dropout. Furthermore, prior research is also limited by its reliance on cross-sectional, retrospective designs despite the longitudinal nature of the dropout phenomenon.

In this paper, we report the results of a unique piece of research which embeds a regression-discontinuity research design within the framework provided by discrete-time survival analysis. By combining these two approaches, we were able to obtain an unbiased estimate of the causal impact of a developmental program in mathematics, and confirm that the risk of leaving college among students who participate in developmental mathematics programs was significantly lower than for equivalent students who did not participate in such programs.

AFTERMATH:

**Refreshments will follow the colloquium at Castaneda's
(1590 Stanley St. – across from the administration building)**