Mathematics, Statistics, and Computer Science   **@ UIC**

# Logic Seminar

### *New results and counterexamples around dividing independence*

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**Abstract:** The starting point for this talk will be the recent discovery (initially made by Alex Kruckman) that a certain well-known basic axiom of model theoretic dividing is actually false. In the attempts to pick up the pieces around this situation, a number of new results and interesting examples have emerged, which I will discuss. One positive result from joint work with J. Hanson is a metric adaptation of PM Neumann's Lemma (in the study of finite permutation group), which is used to prove "full existence" for algebraic independence in continuous logic, answering a question of Andrews, Goldbring, and Keisler. More recently, in joint work with Kruckman, we have found a number of strange counterexamples demonstrating peculiar behavior of dividing in non-simple theories. In particular these examples give negative answers to a question of Adler (about the relationship between forking and dividing in theories where all sets are extension bases) and a question of Kaplan and Ramsey (about the relationship between forking and dividing in NSOP1 theories).

Tuesday, April 18 at 4:00 PM in 636 SEO