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

Departmental Colloquium

All Roads Lead to Rome, and Many Models Lead to Taylor's Power Law of Fluctuation Scaling

Professor Joel E. Cohen (Rockefeller University & Columbia University)

Abstract: ''Taylor's law'' asserts that, in sets of samples of a nonnegative quantity (e.g., insect population abundance), the sample variance is approximately proportional to some power of the sample mean. Taylor's law has been verified for hundreds of species and in many fields beyond ecology, including physics and finance. As scientific motivation, I will show some empirical examples of Taylor's law from my own work. The main focus of my talk is the different mathematical interpretations of Taylor's law and the great diversity of theoretical models (from stochastic processes, differential equations, and number theory, among other areas of mathematics) that lead to Taylor's law.

Tea at 300 SEO at 4:15PM

Friday, February 12 at 3:00 PM in SEO 636