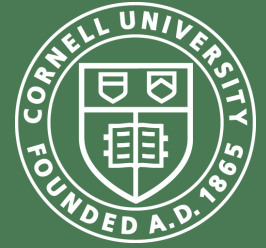# Mathematics Awareness Month

Public Lecture - Friday, April 20, 2018 - 4:30 PM

Robert Kleinberg, Cornell University

Card Games, Inevitable Patterns, and Computation

Math entices us with games and puzzles, inspires us to discover absolute truths about numbers, spaces, and symmetries, and furnishes us with methods for tackling practical problems. Every so often, these three roles converge.

In the summer of 2016 mathematicians solved the "cap set problem," a famous open question in additive combinatorics that can be explained using a generalization of the card game SET. The solution astonished the mathematical world with its simplicity and sparked a frenzy of research applying the new discovery to other problems, including the seemingly unrelated question of how rapidly one can multiply matrices on a computer. I will explain what the cap set problem is, why the solution is considered surprising and beautiful, and what it teaches us about computation.

Refreshments will be served at 4:00 p.m. in the Gates Hall atrium.

Gates Hall, room G01 - 107 Hoy Road, Cornell University

Parking information and directions: www.cornell.edu/maps