Title: Searching for Treasure: An Information Theoretic Linear Programming Approach
Speaker: Dr. Jillian Cannons, Cal Poly Pomona
Date: Wednesday May 3rd, 2017
Time and Location: 1:00-1:50pm in 3-2643

Abstract: Ancient treasure maps are notoriously unreliable. Fortunately, modern technology can assist in our quest for riches by allowing us to employ a group of robots to seek out the promised fortunes. This talk will present an algorithm, based on work by Berger et al., for planning the paths the robots should take to search for the target treasure. The goal of the approach is to direct the robots so as to minimize the expected amount of uncertainty, or entropy, in the system. Using the expected entropy as the objective function, the path planning problem can be formulated as a linear programming (LP) problem similar in style to the LP treatment of the maximum flow problem. In this talk we will develop this information theoretic LP approach and discuss its benefits over a heuristic, greedy tactic.