Denksport
Padraig Ó Catháin
WPI
Discussion of the William Putnam Mathematical Competition
Monday, October 29, 2018
4:00PM-5:50PM
Stratton Hall 308

Seminar on Numerical Methods
Jiayu Zhai
UMass Amherst
Title: Convergence Analysis of a Finite Element Approximation of Minimum Action Methods
ABSTRACT: The Freidlin-Wentzell (F-W) theory of large deviations is a rigorous mathematical tool to study small-noise-induced transitions in a dynamical system as rare events. In this work, we address the convergence of a finite element approximation of the minimizer of the F-W action functional for non-gradient dynamical systems perturbed by small noise.

Thursday, November 1, 2018
11:00AM-11:50AM
Stratton Hall 203

Levi Conant Lecture
Henry Cohn
Microsoft Research New England and MIT
Title: A conceptual breakthrough of sphere packing
ABSTRACT: What is the densest packing of congruent spheres in euclidean space? This problem arises naturally in geometry, number theory, and information theory, but it is notoriously difficult to solve, and until recently no sharp bounds were known above three dimensions. In 2016 Maryna Viazovska found a remarkable solution of the sphere packing problem in eight dimensions, which is much simpler than the proof in three dimensions but tells us nothing about dimensions four through seven. In this talk Cohn describes how her breakthrough works and where it comes from, as well as follow-up work extending it to twenty-four dimensions (joint work with Kumar, Miller, Radchenko, and Viazovska).

Friday, November 2, 2018
4:00PM
Higgins Labs 218