

Number theory and dynamical systems

Dr. Brian Stout (USNA)

Date: Wednesday, 25 September 2013

Time: 3:45-4:45pm*

Location: Chauvenet 110

Abstract: A rational function of one variable $\phi(z)$ is a quotient of two polynomials. If this function has coefficients in the complex numbers, then the properties of points under the iteration of this map on the completed line $\mathbb{P}^1 = \mathbb{C} \cup \infty$ is the subject of classical complex dynamics. Arithmetic dynamics studies iterations of rational maps with coefficients in the rational numbers \mathbb{Q} and properties of orbits of rational points, i.e. points of \mathbb{P}^1 with rational coordinates. This relatively new field of mathematics has attracted top researchers from diophantine geometry, number theory, algebraic geometry, and algebra. This talk aims to give an introduction to the subject and present some of its common tools, new results, and exciting conjectures. The author will also present some his own results from the theory of moduli spaces in arithmetic dynamics.

*The talk will be preceded by tea and cookies starting at 3:30pm.