UCCS Department of Mathematics Math Colloquium Series





<u>DATE:</u> MARCH 23, 2017

<u>TIME:</u> 12:30PM-1:30PM (REFRESHMENTS AT 12:15PM)

LOCATION: UNIVERSITY CENTER ROOM #122

The Toda lattice and semiclassical orthogonal polynomials

Abstract: The Toda lattice is an (infinite!) system of nonlinear differential equations introduced by Morikazu Toda in 1967. It arises in several branches of mathematics and physics, including integrable systems, solitons, Bäcklund and Darboux transformations, inverse scattering, quantum mechanics, Lie groups, etc.

It is also related to the theory of orthogonal polynomials, where the solutions appear as coefficients in the three-term recurrence equation. In this talk, we will develop the basic properties of the Toda system and underline a few connections with some families of discrete semiclassical orthogonal polynomials. We hope to interest a broad mathematical audience and will not assume any previous knowledge of the subject.

For More Information please contact the UCCS Math Department at (719) 255-3311 www.uccs.edu/math