NORTHERN ARIZONA UNIVERSITY

Department of Mathematics and Statistics

COLLOQUIUM
Tuesday, March 29th, 2016
4:00 – 5:00 pm, Adel Mathematics Bldg., Room 164
(refreshments at 3:45)

John Neuberger
NAU

Derivatives, Difference Matrices, and Differential Equations (Calculus)

Abstract: In connection with several of my classes and many of my mentored student projects, I have lately been applying numerical methods to a wider class of problems than just the nonlinear elliptic PDE of my core research. In this talk I will introduce difference matrices as a way to work with derivatives, and present a number of examples from MAT 362, MAT 661, MAT 690, and from student research projects (MAT 485, MAT 685, and MAT 699). In particular, we will see how linear problems from ODE and PDE can generally be expressed and solved as a single linear system, and how nonlinear problems can be generally investigated via Newton's method.

Algebra Combinatorics Geometry and Topology (ACGT) Seminar meets Tuesdays, 12:45 – 2:00 pm, AMB 164.
      Steve Wilson will continue speaking for the next several meetings.
Applied Math Seminar (AMS) meets Thursdays 12:45 – 1:45 pm, AMB 164. Holtzworth is scheduled to speak this
      Thursday March 31st over his research with Falk. Volunteers for any of the next several talks are requested.
Friday Afternoon Undergraduate Mathematics Seminar (FAMUS) meets Fridays, 3pm, AMB 164.