Department of Mathematical Sciences

Fall 2018

Colloquium Series

November 30, 2018 at 3pm in Bell Hall 143

Dr. Anne Shiu

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Dynamics of biochemical reaction systems

Reaction networks taken with mass-action kinetics arise in many settings, from epidemiology to population biology to systems of chemical reactions. This talk focuses on certain biological signaling networks, namely, phosphorylation networks, and their resulting dynamical systems. For many of these systems, the set of steady states admits a rational parametrization (that is, the set is the image of a map with rational-function coordinates). We describe how such a parametrization allows us to investigate the dynamics, including the emergence of bistability in a network underlying ERK regulation, and the capacity for oscillations in a mixed processive/distributive phosphorylation network.

For further information, please contact Drs. Emil Schwab or Xiaogang Su, eschwab@utep.edu or xsu@utep.edu