1046-34-551 **Suzanne S Sindi*** (ssindi@dam.brown.edu), 182 George Street, Providence, RI 02912. *Modeling the Evolution of Repetitive Sequence in DNA.*

There are many nearly identical sequences within the genomes of human, fly, worm and every non-microbial genome that has been determined. Such sequences were originally hypothesized to be "junk DNA", but biologists continue to find many functions these sequences perform. I have been modeling the evolution of these sequences with dynamical systems.

Several features of repetitive DNA follow power law distributions, a natural question is how such distributions have emerged over time from individual duplication events. I will describe evolutionary models demonstrating how power law and generalized Pareto Law distributions can emerge naturally from random duplication and deletion in a genome. (Received September 07, 2008)