MATH and PIZZA

Lessons from the Lamprey Genome:

Origin and Evolution of Large-Scale Genomic Change

Speaker

Dr. Jeramiah Smith

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Sponsored by the
Department of Mathematics

Biography:

Dr. Smith received his BS from Black Hills State University and a Ph.D. from the University of Kentucky and completed an NIH funded postdoctoral fellowship at the University of Washington and Benaroya Research Institute. He is currently an Assistant Professor at the University of Kentucky.

The unique selective pressures and functional constraints that vertebrate lineages have experienced over deep evolutionary time have resulted in a diversity of different mechanisms that mediate recombination (meiotic and mitotic), gene duplication, and the evolution of novel functional elements and developmental mechanisms. Dr. Smith's lab is interested in understanding how vertebrate genomes evolve at the molecular level and how these changes contribute to the evolution of development. Ongoing studies take advantage of the deep evolutionary history of key vertebrate groups and the unique genome biology presented by lamprey programmed genome rearrangement to better understand how novel genomic functions arise and contribute to an organism's biology.

The work is currently funded by two grants from the National Institutes of Health.

Date: **Wednesday, October 2, 2013**

Time: **4:00pm - 5:00pm**

Room: 114, Classroom Building

Abstract:

The lamprey genome provides unique insights into the evolution of genome structure, both over the course of the last 0.5 billion years of evolution and over the first days of embryonic development. The seminar will discuss the inherent challenges of assembly and analysis of the lamprey genome, especially as they relate to the dissection of ancient genome duplication events (including statistical analysis of alternate scenarios) and large-scale restructuring of the lamprey genome during embryonic development.

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