

The Biological and Biomedical Joint Seminar Series

(Hosted by the departments of Molecular & Cellular Biology, Chemistry & Biochemistry, Cellular & Molecular Medicine, and Plant Sciences)

*“What makes us different?
A systems biology
perspective on evolutionary
innovation”*

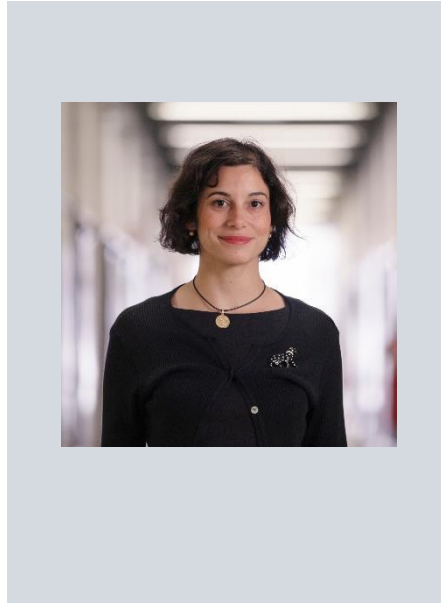
Anne-Ruxandra Carvunis

Department of Computational and Systems Biology,
Pittsburgh Center for Evolutionary Biology and
Medicine, University of Pittsburgh Medical Center

Tuesday May 7th, 2019

ENR2 Room SI07 @ IIAM

Hosted By: Megha Padi



The molecular mechanisms underlying what makes each species unique remain largely unknown. A longstanding theory has been that species evolve new traits through the natural selection of mutations occurring within the functional protein-coding regions of genes. However, this view was significantly challenged by work in recent decades showing that the number of protein-coding genes in a genome of an organism is not correlated with organismal complexity, and that organisms as different as human and chimpanzee share a nearly identical set of protein-coding genes, among other findings. The resulting, more contemporary view, is that mutations outside of established protein-coding genes may be the principal drivers of phenotypic diversity. I am exploring the evolution of non-genic sequences and how it relates to evolutionary innovation. My presentation will describe how non-genic evolution translates to regulatory changes across animal lineages, and how it occasionally triggers the emergence of new protein-coding genes with adaptive potential.

To see all upcoming seminars, please visit mcb.arizona.edu/events or join the MCB Seminar Listserv (listname: mcbjointseminar) at list.arizona.edu.



UA SCIENCE

Molecular
& Cellular Biology