

JHU BIOLOGY DEPARTMENT SPECIAL SEMINAR

Evolutionary innovations in eukaryotic histone repertoires drive biological novelties

Guest Speaker

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Host: Erik Andersen

Abstract:

Genetic and epigenetic information is faithfully transmitted over cell divisions and generations to determine form and function in eukaryotes. Despite their essentiality, epigenetic factors can vary dramatically across taxa. My research program is focused on revealing how epigenetic changes influence fundamental biological processes and what drives their evolutionary innovation. I have discovered unexpected gene divergence, gain, and loss of histone repertoires in multiple eukaryotic lineages and use genetic, genomic, and molecular biology approaches in yeast and flies to reveal their biological consequences. My lab will build on these discoveries and expand to discover chromatin innovation across the deep evolution of eukaryotic genomes and the shallow evolution of cancer genomes. These evolutionary innovations reveal the versatility of chromatin proteins and their functional adaptations to alter genome compaction and fundamental biological processes like gene regulation or DNA damage response.



Tuesday, February 5th, 2024
1:30 pm - Mudd 100