
Woods Hole Oceanographic Institution
Biology Department Seminar



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Redfield Auditorium – 12:00 Noon

Hidden layers of the genome: The role of epigenetics in organismal responses to environmental change

Dr. Neel Aluru

Assistant Scientist

WHOI Biology Department

In eukaryotes, DNA exists in a complex with histone proteins and is packaged into a set of chromosomes. One way that genes are regulated is through remodeling of the chromatin, which is accomplished by covalent modification of the DNA and histone proteins that comprise the chromatin. The study of the patterns of these modifications that regulate gene expression is collectively termed *epigenetics*. The impact of the environment on epigenetic regulation has attracted considerable interest in recent years. Environmental chemicals and other stressors have been shown to have lasting effects on organismal health by altering epigenetic patterns not only in the exposed generation, but also in subsequent generations. Using fish as a model organism, I am studying the mechanisms by which toxicants and other stressors found in coastal environments alter the epigenetic processes that regulate gene expression. I will share some of the findings and provide a perspective on the implications of this research for long-term responses of marine organisms to environmental change.