



## Butterfly Wing Patterning: Establishment of the Compartment Boundary and Development of Transparency and Structural Coloration

Dec. 14<sup>th</sup> (Tuesday): 4-5pm ET

Join us at **Maxwell Dworkin G125** or on **Zoom!**

**Prof. Nipam Patel**



The existence of an anterior-posterior compartment boundary has been well documented in the wing of *Drosophila melanogaster*, and this boundary in *Drosophila* is known to play an important role in maintaining the Decapentaplegic signaling center at the middle of the wing. By analyzing the patterns of gynandromorph butterflies, we define the position of the compartment boundary in this group of insects. We then provide evidence that this boundary does define an early signaling center, but also reveal some interesting differences in the molecular nature of the boundary between *Drosophila* and butterflies. I will also discuss ongoing work to understand the developmental basis for transparency in butterflies, which is often used as a camouflage mechanism. Finally, green and blue coloration in butterflies is usually generated not by pigments, but rather by structural mechanisms, and I will discuss our progress in understanding how these nanostructures are created.

Nipam H. Patel is Director of the Marine Biological Laboratory (MBL) and a Professor at the University of Chicago. He joined the MBL in 2018 from University of California, Berkeley. Prof. Patel grew up in El Paso, Texas, and received an A.B. from Princeton and a Ph.D. from Stanford. He is a developmental biologist who is interested in the changes that have occurred during evolution to generate animal diversity. His lab works with the crustacean, *Parhyale*, to study the evolutionary diversification of appendage patterning. The lab also investigates the cellular and genetic basis for structural coloration and transparency in butterflies and moths.

Hosted by the [Soft Math Lab](#).

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