



Multidimensional Approach to Decoding the Mysteries of Animal Development

Presented by

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Abstract

Development and evolution are controlled, to a large degree, by regions of genomic DNA called enhancers that encode binding sites for transcription factor proteins. The binding of activators and repressors increases and reduces gene expression levels, respectively, but it is not understood how combinations of activators and repressors generate precise patterns of transcription during development. Towards this aim, we have developed novel methods to dissect transcriptional enhancers to understand their role in determining patterns of gene expression in the fruit fly, a classic model system. I will discuss how robustness and evolvability may be encoded in developmental networks using our high-throughput robotics and multiomics combined with synthetic biology and experimental evolution.

Biography

Justin Crocker received his Ph.D. in 2010 from Dartmouth College. Following a postdoctoral fellowship at Princeton University and Howard Hughes Medical Institute's Janelia Research Campus, he became a group leader at EMBL Heidelberg in 2017.

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