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The Evolution of Sexual Development in Arthropods

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Deadline for manuscript submissions:

closed (20 April 2021)

Message from the Guest Editors

The genetic control of insect sexual development, first uncovered in *Drosophila*, is now beginning to be elucidated in other, distantly related lineages. Investigations in a number of insect orders have shown that sexual differentiation is based on a deeply conserved regulatory module that functions via sex-specific alternative splicing of three genes: transformer, doublesex, and fruitless. However, this module responds to different upstream sex determination signals, controls different target genes, and generates different sex-specific traits in different insect species. Research in non-insect arthropods suggests that the splicing-based mechanism of sexual differentiation may be unique to insects, and that other arthropod groups rely on different mechanisms. These observations raise a number of evolutionary questions. Why is there such a diversity of sex determining primary signals? How did the insect sexual differentiation pathway evolve? What are the key features of sexual development in non-insect arthropods? Experts in the fields of arthropod development and evolution are invited to contribute original articles, reviews, and hypothesis papers to this special issue.



mdpi.com/si/51313

Special Issue



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Message from the Editor-in-Chief

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