



biology



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Neurogenetics of Behaviour

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Message from the Guest Editors

More than 50 years ago, Benzer and Suzuki initiated a new approach to dissecting the function of the nervous system by using genetics and behaviour. This approach was called ‘neurogenetics’, and was initially applied to *Drosophila*. The fly has seen the most breath-taking advances in the development of a molecular genetic toolkit that can be applied to studying brain and behaviour in ways that would have appeared inconceivable in 1970, culminating with the 2017 Nobel Prize in Physiology or Medicine awarded to Hall, Rosbash and Young for their neurogenetic dissection of the fly’s circadian behaviour. However, work in other genetic model species, particularly nematodes and mice, has also made significant advances in the neurogenetic analysis of behavioural phenotypes and includes the use of flies, worms and mice as powerful models for studying human neurodegenerative disorders. Non-model species, often of more ecological interest, where the underlying genetics is less tractable, can now also be studied with ‘omic’ approaches. Understanding relationship between brain and behaviour will provide one of the most difficult challenges to 21st century biology.



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