

Whole brain approaches to *C. elegans* neuroscience



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APER0
after the
colloquium

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Small animals like nematodes and fruit flies permit whole-brain approaches to measuring the neural dynamics and mapping the circuits that give rise to behavior. Whole-brain activity is mutually contingent on behaviour itself, especially for natural behaviours which require dynamic interaction between the animal, its environment and other animals. Many of the signalling and feedback pathways that animals use to guide behaviour only occur in freely moving animals. Recent technological advances have enabled whole-brain recording during behavior and whole-brain connectomics in *Caenorhabditis elegans*. I will discuss new experimental opportunities and challenges in this emerging field of systems neuroscience.