Editorial

Neural networking forms the basis of learning and memory, which in turn are the foundation of intelligence. As early as the 1970s, studies in invertebrate systems revealed that structural changes at synapses are related to learning and memory storage. Invertebrate models not only provide simple systems for the studies of complex behavior, many systems are also amenable for genetic studies. While neural networking is now synonymous with computational approaches, we have yet to explore the full potential of what invertebrate neuronal systems can provide. With the advent of genomics and proteomics, it is now pertinent to have a fresh look at some of the invertebrate systems. We have gathered reviews across a wide spectrum of invertebrate systems. The cnidarians consist of organisms capable of behavior generated from simple neural net, or from centralized system, as in the case of the jellyfish. Crustaceans and insects have been useful models of understanding rhythmic behavior. Synaptic plasticity, in relation to memory, was first discovered in *Alphysia*. Cephalopods are well known for their capacity of intelligence behavior. *Drosophila*, with the advantage of genetics, is useful for the molecular study of network guidance and formation.

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