



ONLINE SEMINAR BY PROF. ARAM MEGIGHIAN

(Dipartimento di Scienze Biomediche-DSB)

May 28th, 2020 - 3:00 p.m.

<https://unipd.zoom.us/j/99210784061>; Meeting ID: 992 1078 4061

Title of the Seminar: Visuomotor control and visual place learning in flies

Abstract: Navigation plays a key role in organisms adaptive behavior. An adequate response to environmental stimuli, is fundamental for supporting food search, social interactions and mating, all of them step physiological mechanisms from the evolutionary point of view. Therefore it is not surprising to find that many basic mechanisms underlying navigation in the environment are substantially maintained from lower to higher vertebrates and from invertebrates to vertebrates.

A key point is to combine these behavioral observations with the neurophysiology of the complicated nervous circuits underlying these complex behaviors which reside in apparently so different and distant nervous systems. Are there also basic neuronal circuits which are maintained from the evolutionary point of view in both simple and complex nervous systems where they are redundant and finely tuned? Something similar to the Sherrington view about the development motor circuits which could be applied to the very complicated behavioral circuits? Or, on the contrary, is it behavior which shapes nervous system evolution by selecting specific and different circuits for driving similar responses in different and distant (from the evolutionary point of view) organisms?

The lecture will talk about visuomotor responses and place learning studies in flies made in our and other laboratories combining sophisticated quantitative behavioral techniques, fly genetic tools and optogenetics.