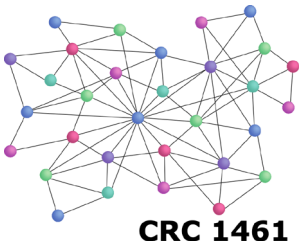

A genetically tractable jellyfish model for systems and evolutionary neuroscience

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Jellyfish are radially symmetric organisms without a brain that arose more than 500 million years ago. They achieve complex organismal behaviors through coordinated interactions between autonomously functional body parts. While jellyfish neurons have been studied using single-unit electrophysiology, it has not been possible to investigate their neural function at the systems level. Here I introduce Clytia hemisphaerica as a transparent and genetically tractable jellyfish model for systems neuroscience. I report efficient generation of stable F1 transgenic and knock-out lines for whole-organism GCaMP imaging and conditional cell ablation. Using these tools and computational analyses we find that an apparently unstructured umbrellar subnetwork of RFamide-expressing neurons gives rise to spatiotemporally structured subassemblies that control localized umbrella infolding during feeding. Looking forward, Clytia affords a platform for comparative studies of systems-level neural function, behavior, and evolution, and for better understanding the biology of a clade of organisms with growing ecological and economic importance.

CRC 1461: Neurotronics
Colloquium: 28-October-2021_010
Thursday, 3:30 pm to 5:30 pm (CET)
The colloquium will start at 4 pm, i.e. 7 a.m. PDT
Link to the zoom meeting:
https://uni-kiel.zoom.us/j/66680717743?pwd=WElXTXRnUG1IOGVMejJpT0JBR0JrZz09

Invited by Alexander Klimovich
Kiel University, Inst. of Zoology

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