

## AXE NEUROSCIENCES

CONFÉRENCIER

Zoom : <https://us06web.zoom.us/j/86538119591?pwd=ToaTLI6a2IaPEAkOLefcLIIs4xEbGZe.1>

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### ***The role of astroglia-neuron interactions in generation and spread of seizures***

Astroglia-neuron interactions are involved in multiple processes, regulating development, excitability and connectivity of neural circuits. Accumulating number of evidences highlight a direct connection between aberrant astroglial genetics and physiology in various forms of epilepsies. Using zebrafish seizure models, we showed that neurons and astroglia follow different spatiotemporal dynamics during transitions from pre-ictal to ictal activity. We observed that during pre-ictal period neurons exhibit local synchrony and low level of activity, whereas astroglia exhibit global synchrony and high-level of calcium signals that are anti correlated with neural activity. Instead, generalized seizures are marked by a massive release of astroglial glutamate release as well as a drastic increase of astroglia and neuronal activity and synchrony across the entire brain. Knocking out astroglial glutamate transporters leads to recurrent spontaneous generalized seizures accompanied with massive astroglial glutamate release. We are currently using a combination of genetic and pharmacological approaches to perturb astroglial glutamate signalling and astroglial gap junctions to further investigate their role in generation and spreading of epileptic seizures across the brain.

**Le vendredi 3 novembre 12 h à 13 h**

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L'AUDACE DE  
CHERCHER  
PLUS LOIN

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**Amphithéâtre du CRCHUM, R.05.212A/B**

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**Séminaire organisé par Christine Vande Velde**

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