

## AXE NEUROSCIENCES

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### *Ontogeny of the spinal cord dorsal horn*

Chronic pain is a malfunction of the neural circuits which normally functions to avoid or minimize bodily damage, representing a major source of disease and injury-related morbidity. To best treat pain, a thorough understanding of circuit specification and assembly is required, particularly within the first waystation in the central nervous system: the spinal cord dorsal horn. Here I show that the gene *Phox2a* is necessary for specifying and assembling the output circuits of the dorsal horn which send pain information to the brain. Led by a wealth of transcriptomic data, I show that the vast diversity of interneurons are specified in chronological order, forming the laminated structure of the dorsal horn. Furthermore, graded expression of the *Zic1-5* family of transcription factors further diversifies interneurons into at least 150 unique subtypes. Given a relatively complete account of neuron specification, sophisticated questions about the organization of pain circuit architecture will be posed.

**Mardi 14 avril 2026**

**9h à 10h**

**A.02.9209AB, CHUM**

**Ou via Zoom :**

<https://us06web.zoom.us/j/89882049885?pwd=46DtU2mbp1Quu2uOyU5AiriQnloopT.1>

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Séminaire organisé par Nathalie Arbour

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