

DANDRITE Master Class 2025: Neuroscience at DANDRITE

DAY 1

Time: Wednesday 26 February

Location: 1324-011. Address: Bartholins Allé 10, 8000 Aarhus C. [Link to map.](#)

LINK TO SIGN UP: events.au.dk/dandritemasterclass2025neuroscienceatdandrite

Time	Activity
12:45 – 13:00	Arrival at Aarhus University with coffee, tea and light refreshment.
13:00 – 13:05	Welcome by Research Group Coordinator Astrid Munk
13:05 – 13:45	Inhibitory Circuits in Hypothalamic Development: Impacts on Higher Brain Functions Lecture by Associate Prof. Thomas Kim <i>This session explores the development of inhibitory circuits in the hypothalamus, zona incerta, and reticular thalamus, focusing on their role in innate and homeostatic behaviours, such as sleep and energy balance. We will present evidence of their regulation of higher brain functions like attention and emotion. Using a top-to-bottom approach, including brain atlas development, conditional knockout models, and validation through behaviour, electrophysiology, and omics, we will examine how disruptions in these circuits contribute to neurodevelopmental disorders like autism and ADHD.</i>
13:45 – 14:00	Break
14:00 – 14:45	Circuits of Reward and Aversion – Why the brain tells us ‘Being sick is bad and Nutella is good!’ Lecture by Associate Prof. Anna Mathia Klawonn <i>As you have already gotten familiar with modern circuitry techniques for exploring affective state (lecture 28+29 Neurocircuits of Affective State: A Modern Perspective from Chemogenetics to Optogenetics) – We briefly summarize what we learned and take a closer look at the circuits of motivation and reward.</i> <i>We will dive deeper into how dopamine signals reward and aversion and helps predict what we should pursue and what to avoid, as well as how the immune system can abrogate this signaling, while drugs of abuse can hijack it.</i>
14:45 – 15:15	Break
15:15 – 18:30	Optional: Participating in DANDRITE Student Encounters 2025. It is necessary to sign up individually: Link to sign up.

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DAY 2

Time: Thursday 27 February

Location: 1170-347. Address: Ole Worms Allé 3, 8000 Aarhus C. [Link to map.](#)

Time	Activity
10:15 – 11:00	<p>Neuronal protein homeostasis Lecture by Associate Prof. Chao Sun</p> <p><i>An individual neuron can host over 10000 synapses distributed in an expansive dendritic and axonal arbor. To enable parallel information processing and storage, the capacity to make and degrade proteins has been decentralized to individual synapses. This lecture will explore the logistics of neuronal protein homeostasis, with a focus on synaptic regulation.</i></p>
11:00 – 11:15	Break
11:15 – 12:00	<p>Epigenetic and transcriptional basis of neuroplasticity Lecture by Associate Prof. Taro Kitazawa</p> <p><i>Neuronal activity triggers signal transmission to the nucleus and cause epigenetic and transcriptional changes in multiple phases, which in turn induce long lasting synaptic and circuit reorganization. Recent advancements of multi-omics single-cell sequencing technologies accelerated our understanding of these molecular changes of individual neurons. However, these technologies embrace an inherent limitation that they provide snapshot of the current state. I will elaborate on how to overcome this technological issue of current omics approach and address relevant questions in neuroscience.</i></p>