

## Virtual DANDRITE Lecture

**Tuesday 12 January 2021**

**16.00 – 17.00**

### Online via Zoom

Please find Zoom link via the Outlook calendar invitation. If you have not received this, please write an e-mail to Kathrine: [kh@dandrite.au.dk](mailto:kh@dandrite.au.dk)



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### **The unexpected precision of an inducible transcription factor**

In neurons, inducible transcription factors (ITFs) are expressed in response to a variety of stimuli and regulate gene expression that is associated with morphological, synaptic and circuit plasticity. Because of this, ITFs are routinely used to identify behaviorally-relevant neurons *in vivo*. Yet, it is unclear if an ITF can convey information to the nucleus about select features of a neuron's activity and how this information is transformed into meaningful changes in connectivity. I will share recent work from my lab describing how, in the mouse hippocampus, the transcription factor NPAS4 independently communicates changes in spiking and synaptic activity to the nucleus. This information is then converted into precise changes in inhibitory circuit connectivity that reconfigures the computations performed by the neuron.