

## University of Groningen

### Sleep as a synaptic architect

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## **Stellingen**

behorende bij het proefschrift

### **Sleep as a Synaptic Architect**

How sleep loss influences memory and synaptic plasticity

1. Sleep deprivation reduces spine density in specific areas of the hippocampus, which contradicts the SHY hypothesis. (This thesis)
2. In mice, high levels of cofilin are linked to the negative consequences of sleep loss on long-term memory, but an increase of cofilin activity might also be beneficial for short-term memory. Therefore, manipulating cofilin activity may eventually be a strategy to combat disorders associated with sleep disturbances and memory dysfunction. (This thesis)
3. The temporal dynamics of protein synthesis-dependent memory consolidation are similar for day-time and night-time learning. (This thesis)
4. To better understand the effects of sleep deprivation on learning, fundamental research on the anatomical and structural characteristics of hippocampal subregions should be a priority.
5. Everyday objects can be used to study object location memory, but not as a method for sleep deprivation.
6. Sleep loss is an increasing health problem in our society. More awareness is needed to create a lifestyle with more room for sufficient sleep in order to stop this pandemic from growing.
7. Sleep deprivation using the gentle handling stimulation method does not induce stress, in contrast to writing a thesis.
8. Doing a PhD is like training for a marathon, not a sprint, and sometimes you need to slow down to get where you want to be.
9. PhD-students should eat more “Groninger eierballen” as they, based on empirical research, are beneficial for *Drosophila* and prevent the negative consequences of a rough night in humans.
10. A scientist’s work is never finished. (*Harrison Wells, The Flash*)

*Frank Raven*  
*11 September 2020*