Propositions belonging to the PhD thesis

NEUROPLASTICITY IN THE MAMMALIAN CLOCK: THE EFFECT OF AGING AND SEASONS

1. Age-related deficiencies in single neurons are partially compensated at the network level (this thesis).
2. BK channels are a physiological link between intracellular Ca^{2+} and the aging-impaired output of the SCN (this thesis).
3. Prolonged environmental light increases GABAergic excitation of clock neurons in adult mice (this thesis).
4. Seasonality influences cell membrane properties such as GABA equilibrium potential leading to alterations in intercellular communication (this thesis).
5. The use of artificial light in modern society can alter neurotransmitters action in the brain (Dulcis et al, Science, 2013 and this thesis).
6. Aging affects the brain at all levels of organization, from single cells, to neuronal networks, to the interaction among brain networks.
7. The brain consists of many networks, each of which possessing more features than their individual components.
8. The pattern into which the particles are arranged defines the network properties, rather than the individual particles (adapted from Max Tegmark, Our Mathematical Universe, 2014).
9. When the results of your experiments are in contrast with your hypothesis, you will be close to a new discovery.
10. The beauty and complexity of the nervous system shows similarities with the structure of hand-woven Persian carpets.
11. Performing patch clamp recordings is a handcraft.
12. The image of a scientist is subject to culture, and needs revision.