

Professors: Ralf Schneggenburger and Olexiy Kochubey

TAs: Jinyun Wu, Runzhong (Yvonne) Zhang

Unit 12 – Neural circuits of psychiatric disease

- 1) Mention 5 psychiatric diseases, and describe their symptoms.
- 2) Name an example for an antipsychotic drug. Name two diseases / symptoms, during which antipsychotic drugs would be prescribed. On which receptors do these drugs act?
- 3) Name an example for an antidepressant drug. Name two diseases / symptoms, during which antidepressants are prescribed. Availability of which neurotransmitter is modulated by antidepressants, and in which direction?
- 4) Describe the main behavioral manifestations of obsessive-compulsive disorder (OCD) and available treatments. Explain the principle of cortico-striato-thalamo-cortical (CSTC) circuit hypothesis of OCD and which clinical aspects of the disorder it addresses.
- 5) List the main three diagnostic criteria of the childhood autism and the time window of symptomatic development.
- 6) Explain what is mentalization and how it is related to autism.
- 7) At the level of behavioral symptoms, what is in common and what is different between the autism and obsessive-compulsive disorder?
- 8) Read and discuss the following paper:

Kim, S.-Y., Adhikari, A., Lee, S.Y., Marshel, J.H., Kim, C.K., Mallory, C.S., Lo, M., Pak, S., Mattis, J., Lim, B.K., Malenka, R.C., Warden, M.R., Neve, R., Tye, K.M., Deisseroth, K., 2013. Diverging neural pathways assemble a behavioural state from separable features in anxiety. *Nature* 496, 219–223.
<https://doi.org/10.1038/nature12018>. <https://www.nature.com/articles/nature12018>