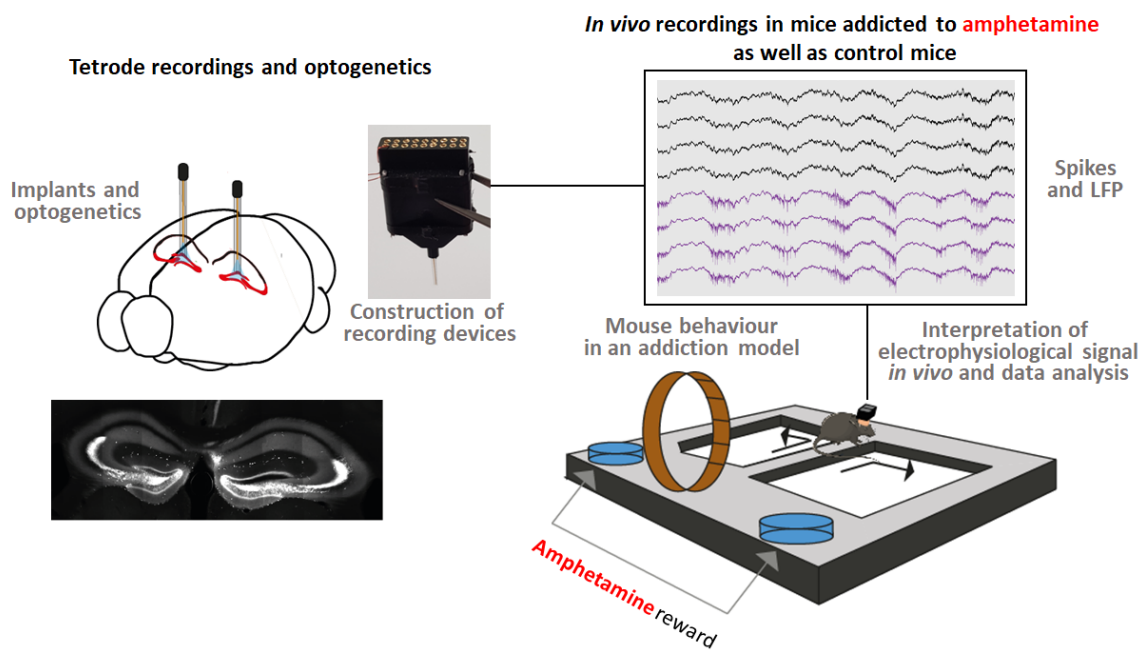


### Project description

The projects aim to investigate how the formation of long-term memories is altered by the addiction to drugs such as amphetamine and cocaine. Specifically, we will investigate how input from a key component of the brain's reward system, mesolimbic dopaminergic neurons, influences neuronal network activity in the hippocampus and entorhinal cortex at different stages of long-term memory formation and after the repeated use of addictive substances. We will use sophisticated electrophysiological *in vivo* recordings from large ensembles of neurons in mice performing memory tasks. These methods will be combined with optogenetic and chemogenetic manipulations of genetically-defined cell types and pathways, to decipher the neuronal circuits making the link between addiction and memory.

We have multiple positions open for PhD, Medical and Master students. Here is our program:

### What will you learn?

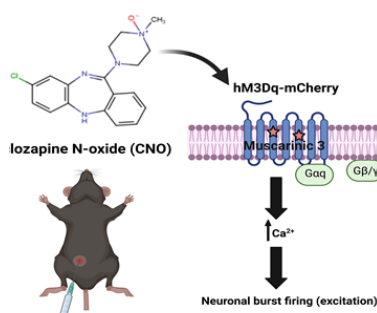


### Additional methods

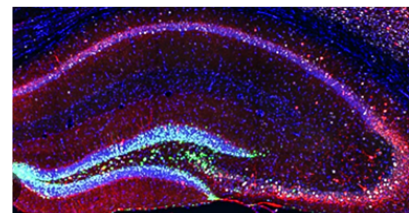
#### Stereotaxic surgery



#### Chemogenetics + behaviour



#### Stereotaxic virus injections + Immunohistochemistry + Confocal microscopy



### ***What do you need?***

The described projects are built on an experimental component that includes stereotaxic surgeries, electrophysiological recordings, and the training of mice in various memory tasks. In addition, a willingness to develop good programming skills is of advantage. You are a very good candidate if you have a talent for the experimental **or** the analytical component, and if you are willing to work in a team of students that combine these skills.

### ***How to apply?***

Please send your CV and other supporting documents you might have to: Dr. Magdalena Schlesiger (m.schlesiger@dkfz-heidelberg.de)