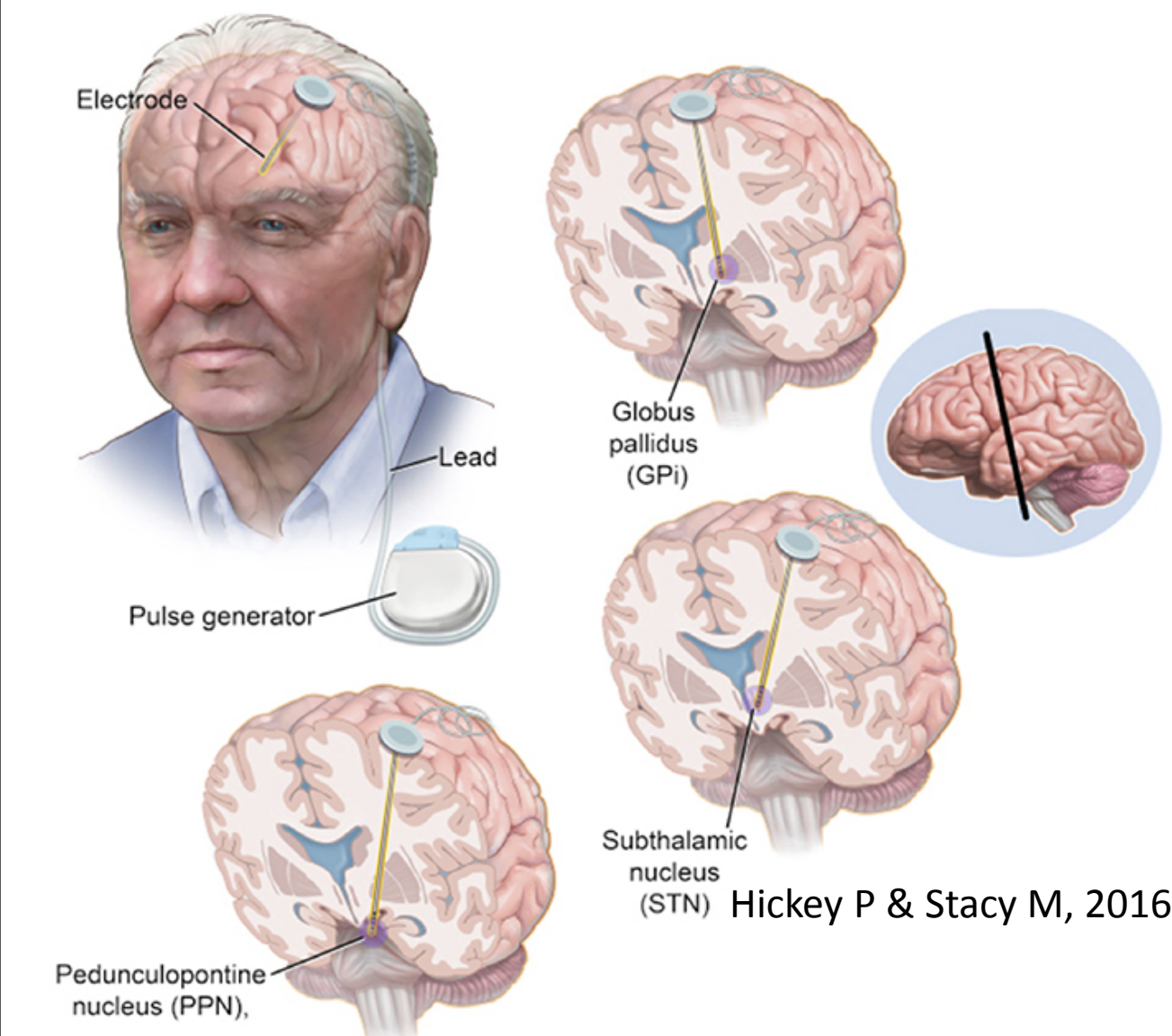


# Lighting the pathway: Neural circuitry of addiction and movement disorders

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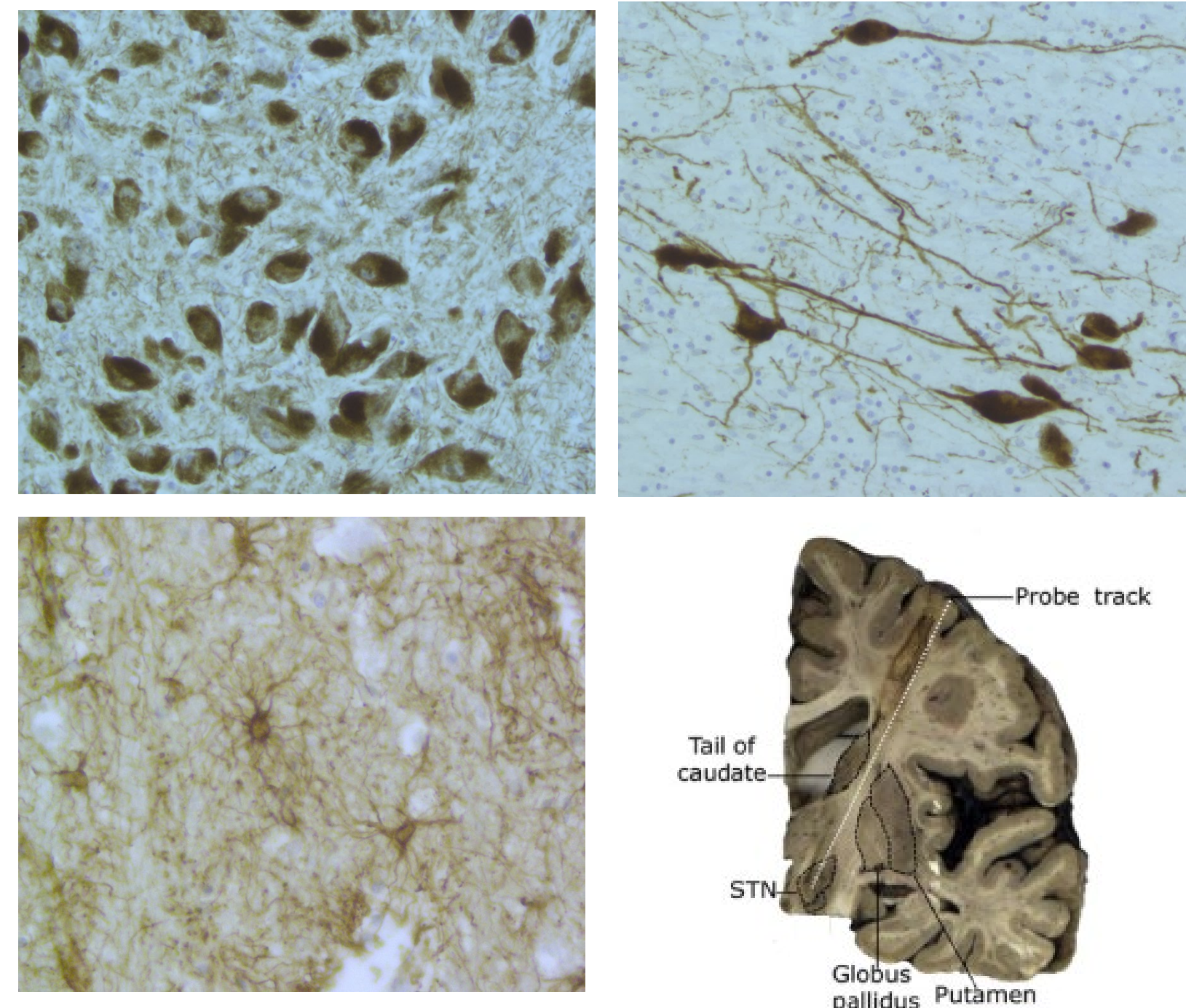
## Neurobiology of Parkinson's disease

### Neurobiological Mechanisms of Deep brain stimulation



DBS is a current treatment for PD, however the mechanism of DBS remains unclear and its effects on the non-motor symptoms of PD. Using optogenetics manipulation we aim to dissociate the excitation and inhibition of targeted brain regions and their effects on cognition, motivation and anxiety.

### Molecular changes in Human Parkinson's Patients



This project examines cellular changes in Parkinson's post mortem brains

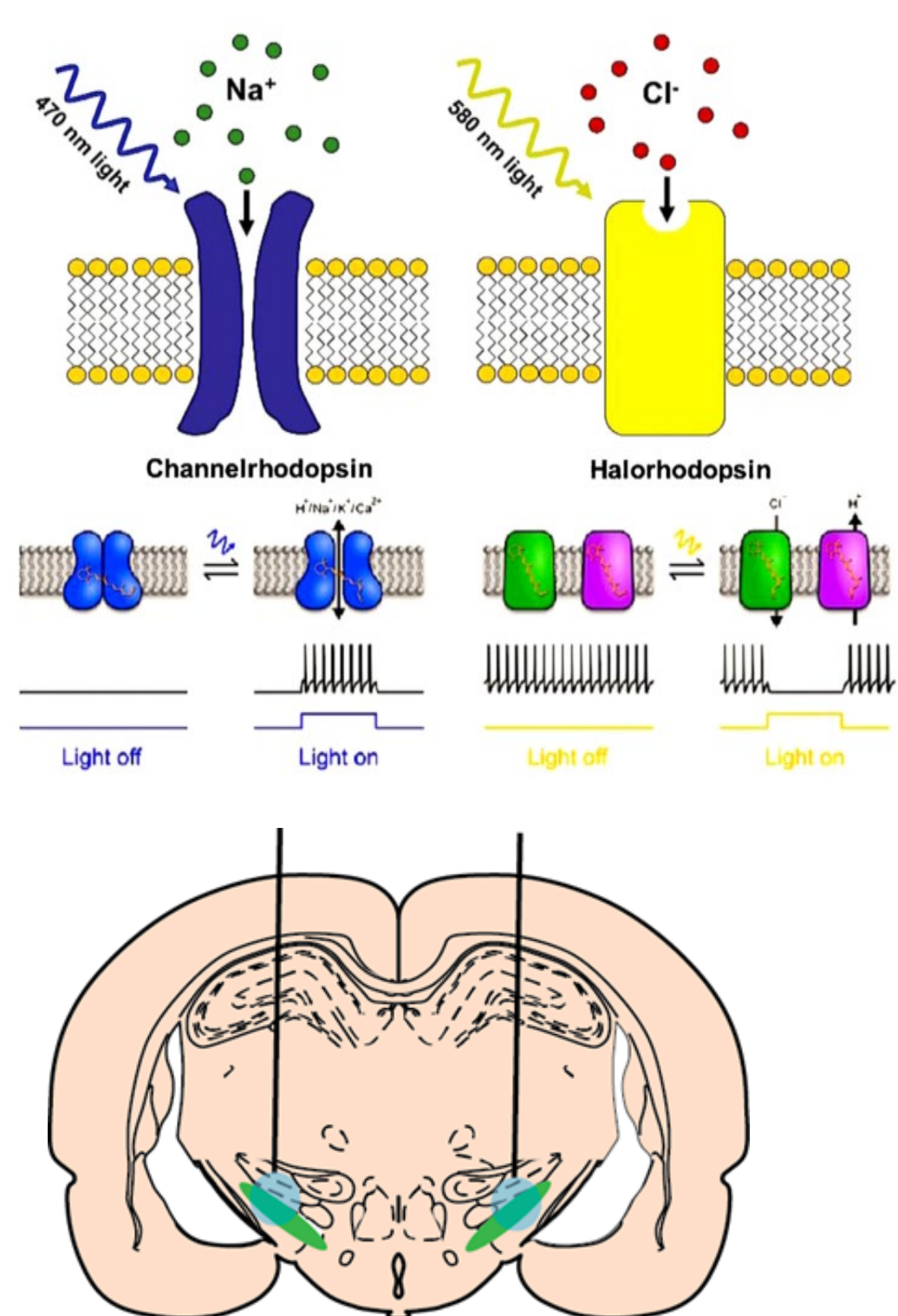
### Cannabidiol treatment of Parkinson's



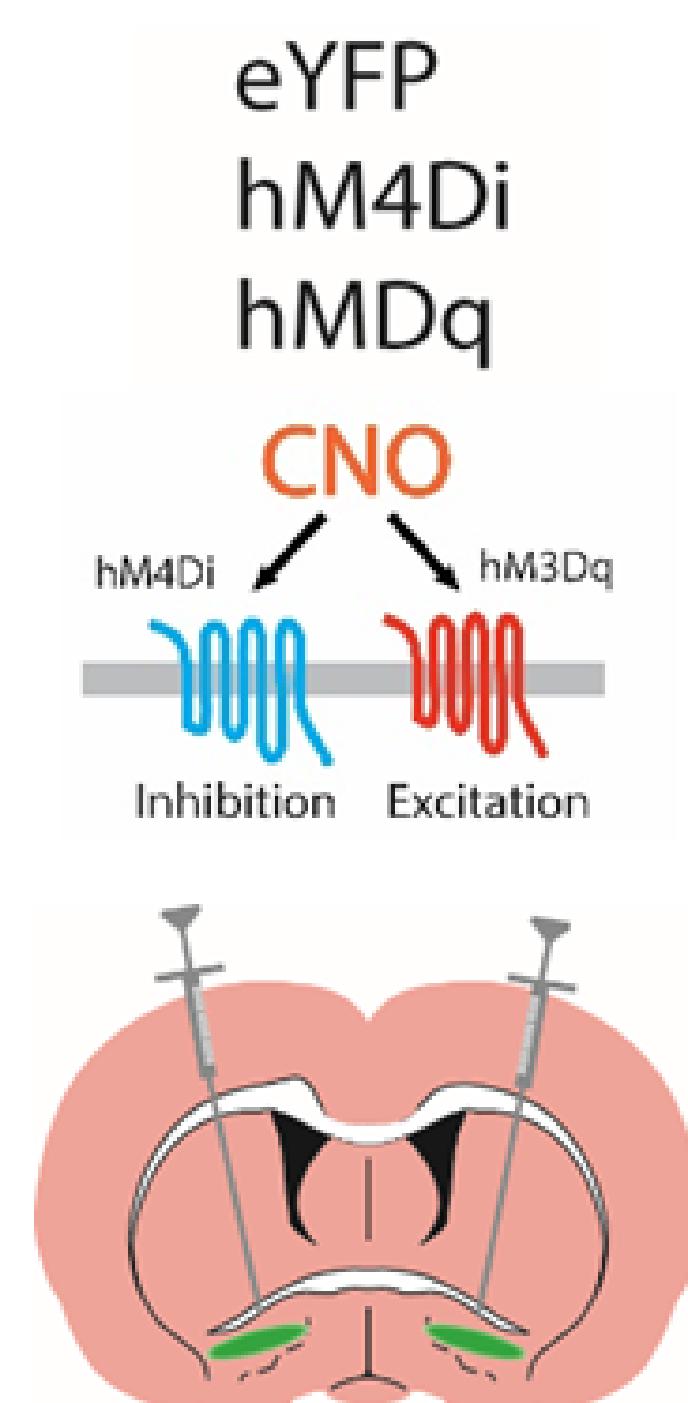
This project examines the effect of cannabidiol treatment in the changes in non-motor symptoms of Parkinson's disease

## Brain to Behavior approach

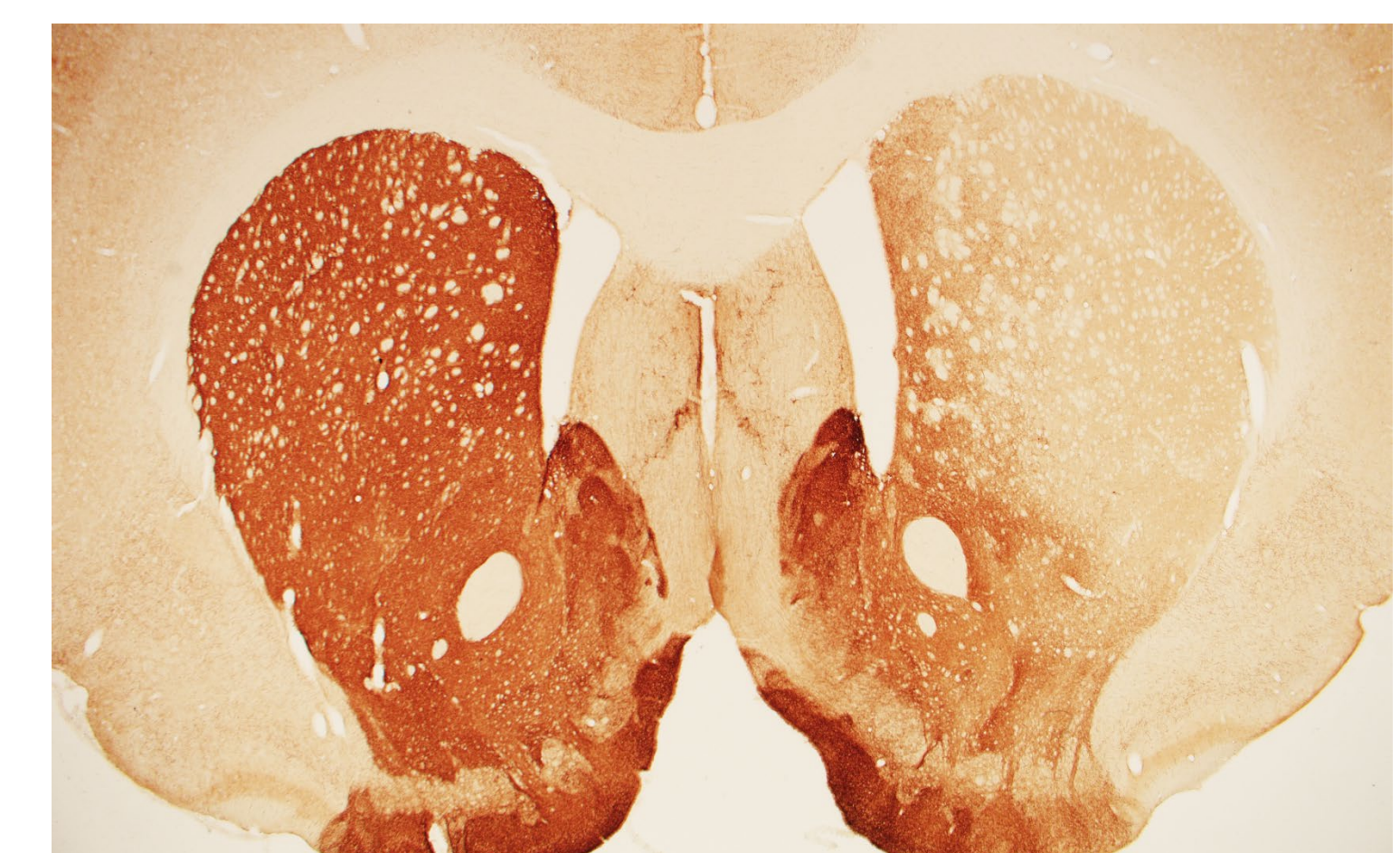
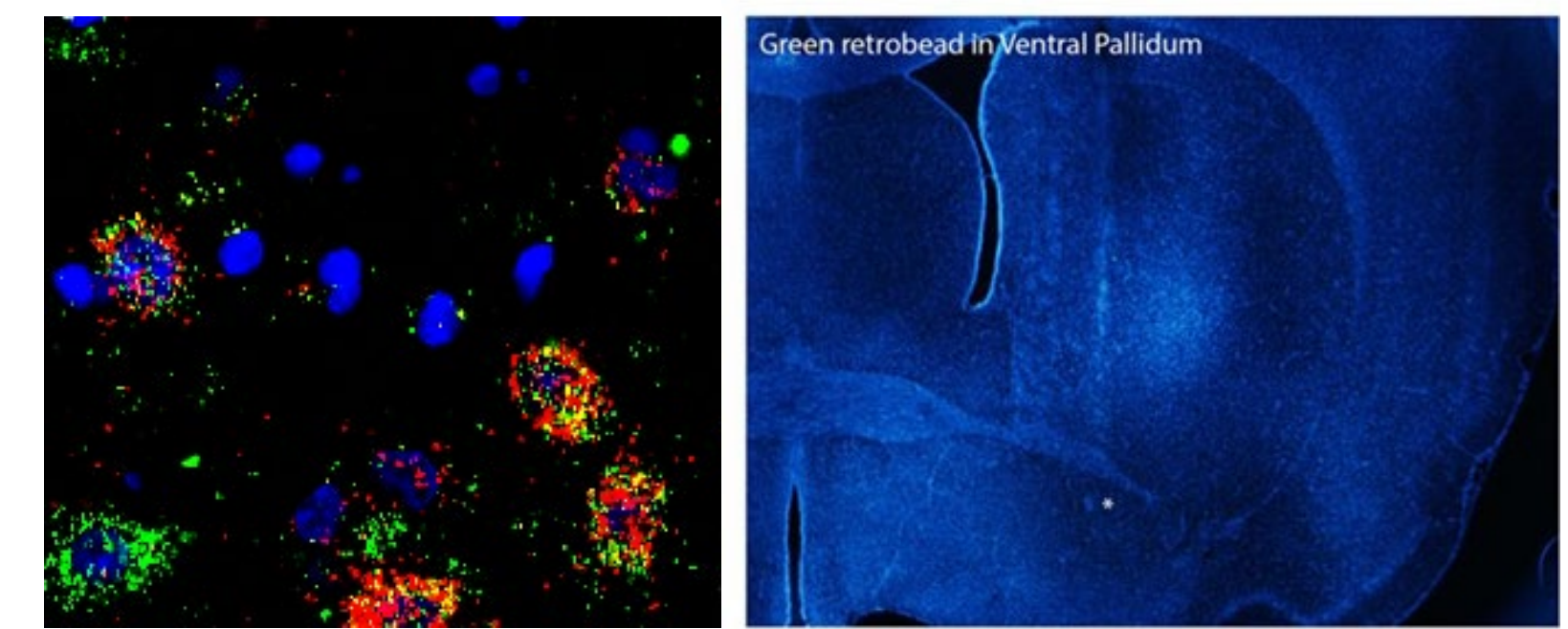
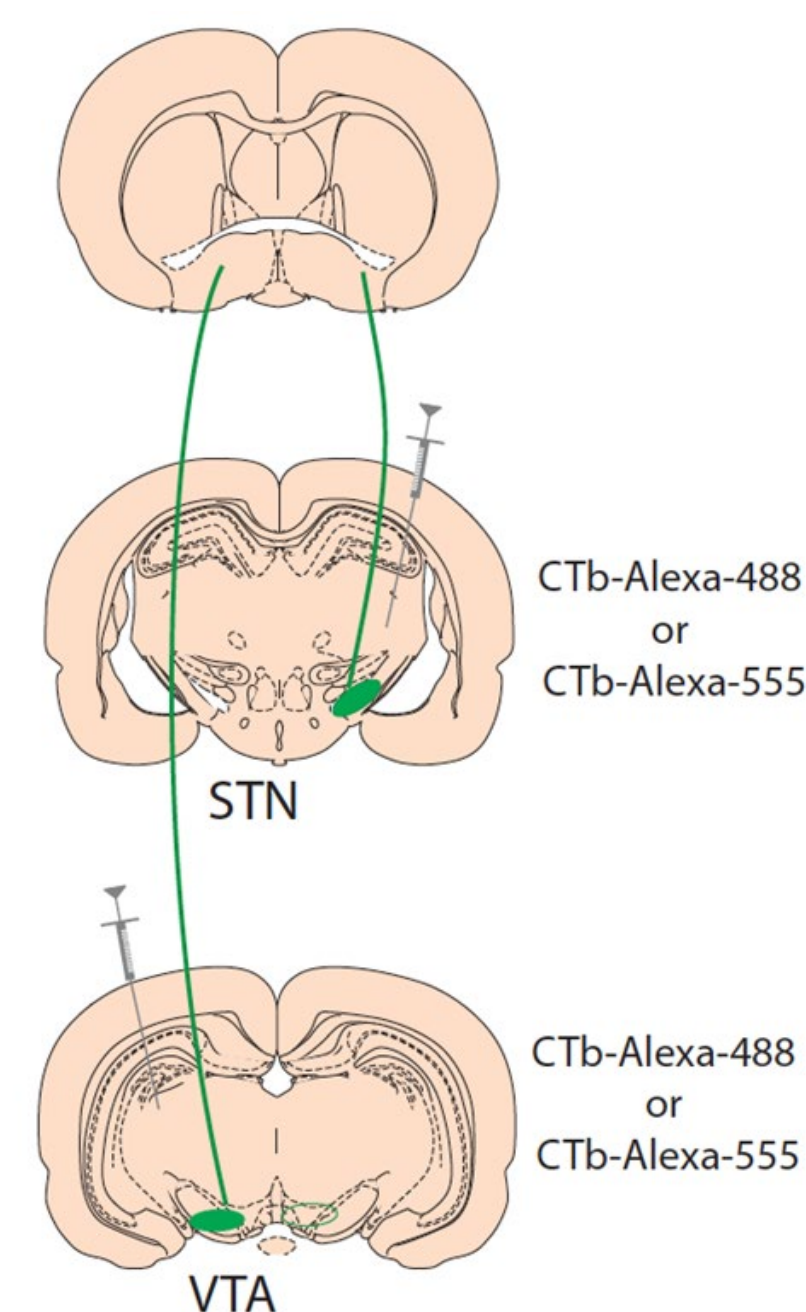
### Optogenetics



### Chemogenetics

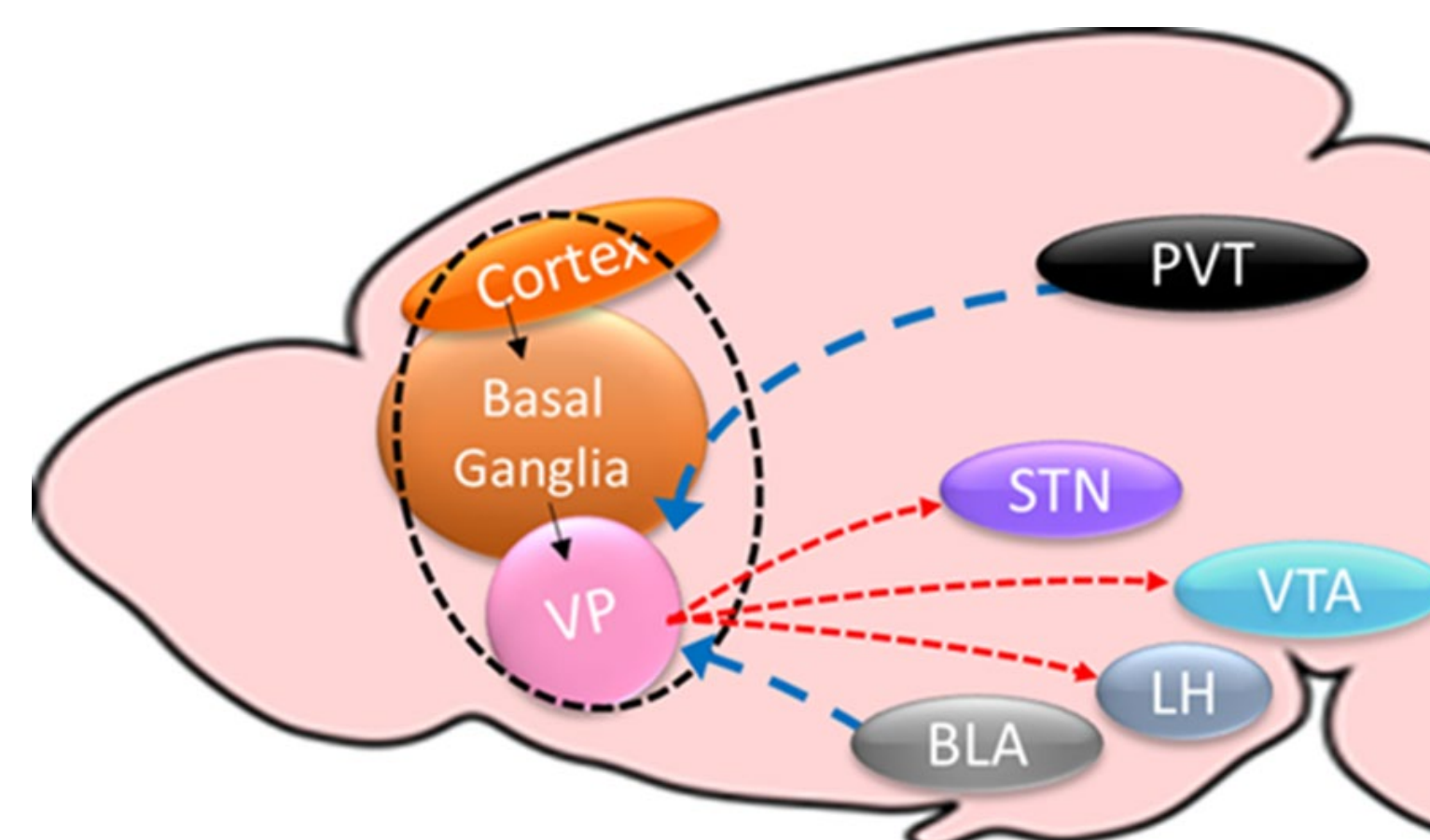
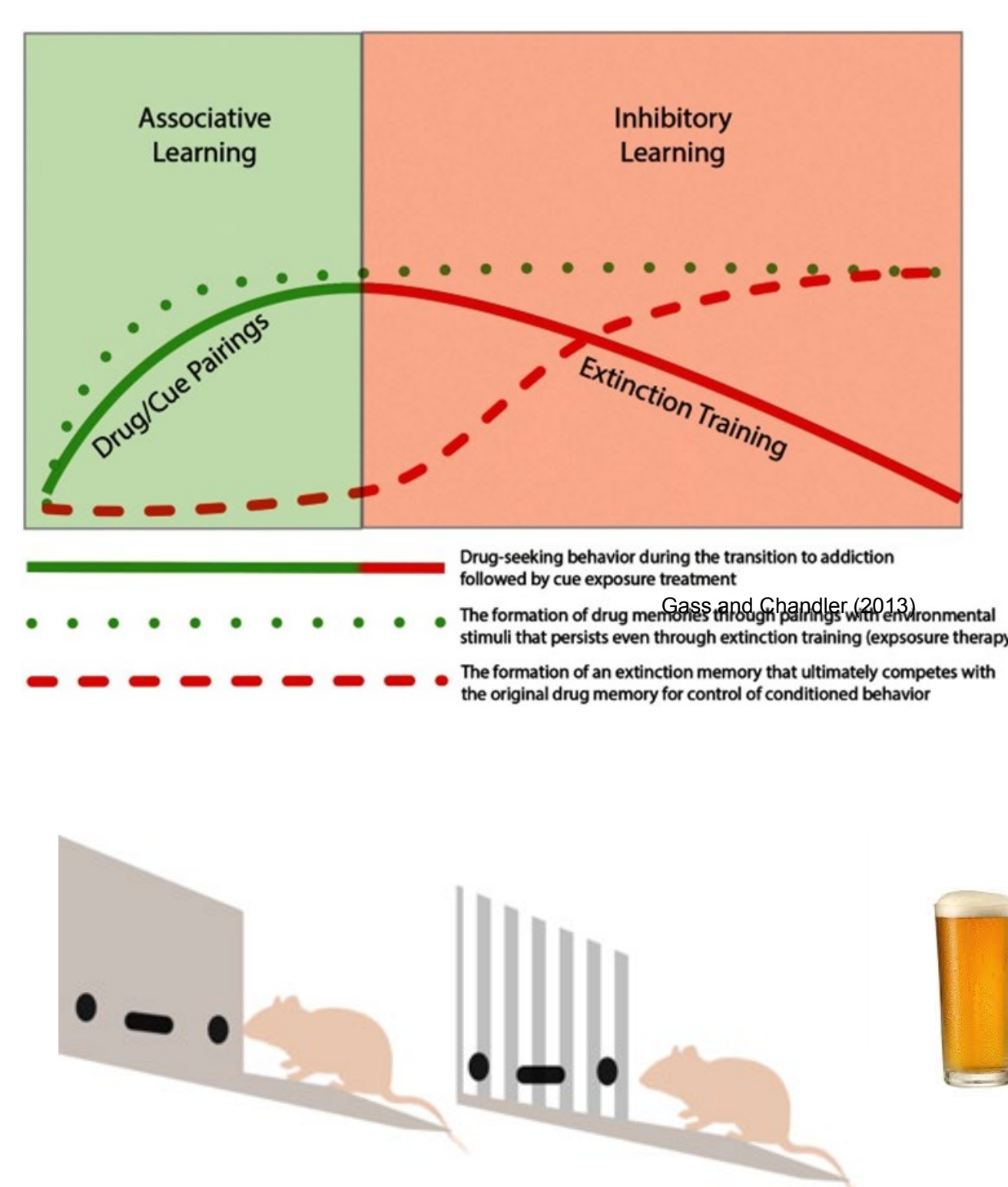


### Neural Mapping



## Neurobiology of Alcohol Addiction

### Using animal models to map brain mechanisms for relapse



### Projects

Drug addiction is a relapsing disorder, where users lose the ability to inhibit drug seeking behaviour. The ventral pallidum is a key brain region controlling relapse.

#### Molecular profile of ventral pallidum neurons

This project aims to identify the molecular profile of ventral pallidal neurons that control relapse to alcohol seeking.

#### Ventral pallidum connectivity in relapse to alcohol seeking

This project aims to identify the neural connectivity of ventral pallidal neurons that control relapse to alcohol seeking.