You want to see where neurons in the PFC project to. How do you do this?

a. Inject a retrograde tracer in PFC
b. Inject an anterograde tracer in PFC

You want to see which neurons (throughout the whole brain) project to PFC. How do you do this?

a. Inject a retrograde tracer in PFC
b. Inject an anterograde tracer in PFC

Suppose you have a slide showing neurons in PFC that project to NAc. You want to know which of these neurons are excitatory versus inhibitory. How might you do this?

a. Immunostain the slide for VGAT
b. Immunostain the slide for VGLUT
c. Get a VGlut labeled mouse line, and repeat the experiment in Vglut labeled mouse line

→ discussion point. Could also stain for parvalbumin , do VGAT and VGLUT stains exist?

_____:ion channel::key:door (circle all that apply)

a. Ligand
b. Light
c. Protein
d. ChR2

Which of the below can be represented by genetic sequence? (circle all that apply)

a. Protein
b. Enzyme
c. Promoter
d. RNA polymerase
e. ChR2
f. NpHR
g. Dopamine
h. GABA

Which of the below are proteins? (circle all that apply)

a. Enzyme
b. Promoter
c. RNA polymerase
d. ChR2
e. NpHR
f. Dopamine
g. GABA

You want to be able to activate only dopamine neurons in the VTA during an experiment. You have a Dat-Cre mouse that expresses Cre under the DAT promoter. Which virus do you inject into the mouse's VTA?

a. AAV5-hSyn-ChR2-eYFP
b. AAV5-DIO-ChR2-eYFP
c. AAV5-DIO-NpHR-eYFP

You want to activate only dopamine neurons that project to mPFC. What are some ways to do this?

You decide you hate injecting virus and have better things to do with your life. How might you use a transgenic approach to mate the appropriate mice so that you might no longer need to inject virus? (hint: The goal is create a mouse line that expresses ChR2 in dopamine neurons)
https://www.biorxiv.org/content/biorxiv/early/2017/11/25/224881.full.pdf

What is this virus, and how might you use it? Use the internet to look it up:
AAV5-Syn-Flex-ChrimsonR-tdTomato
retroAAV -Cre_WPRE-hGHpA
AAV9-Syn-NES-jRGECO1a.WPRE.SV40