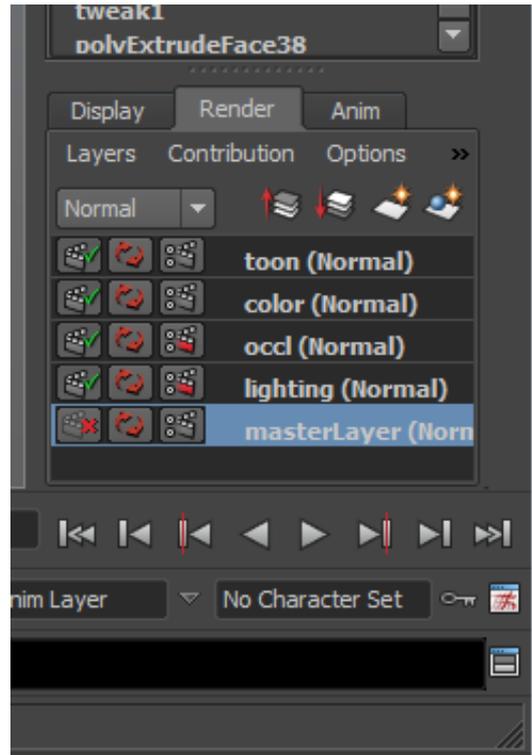


Render layers in Maya and in post processing

Open the scene neuronModelling.007.mb, open the channel box and look below in the layers pane. Click the Render tab and have a look at the different render layers.

I have created a few different render settings as well as a few different materials for the different layers.

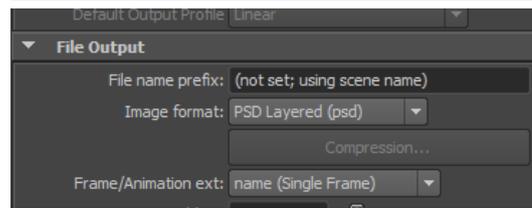
Click through the layers to see what the layers have in them, what materials are assigned to the objects.



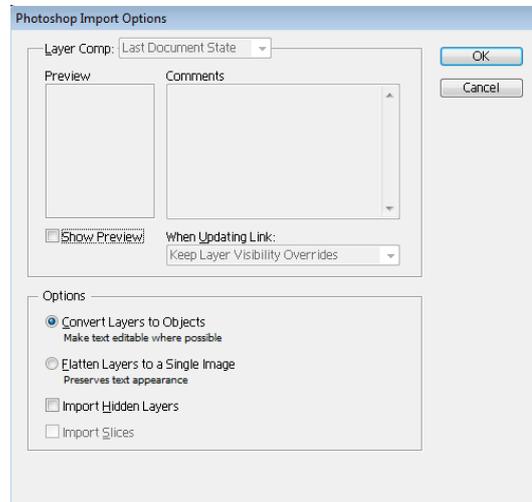
Open the render settings, scroll down to File Output, make sure Image format is set to PSD Layered, and that Frame/Animation ext is set to 'name (Single Frame)' (this is the default setting I use when rendering stills).

Also, in the render settings, note the path to where the images will be saved.

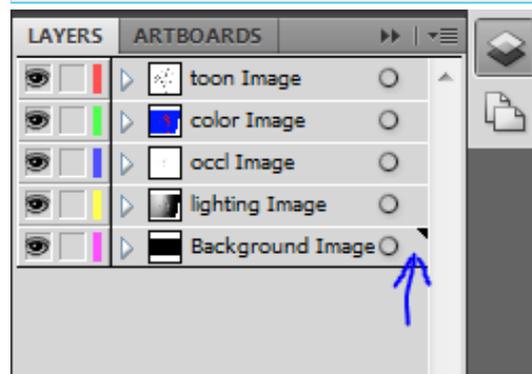
With the Rendering menu-set selected, do Rendering -> Batch Render



Open Adobe Illustrator, open the neuronModelling.007.psd file. A window will appear, select Convert Layers to Objects and click OK



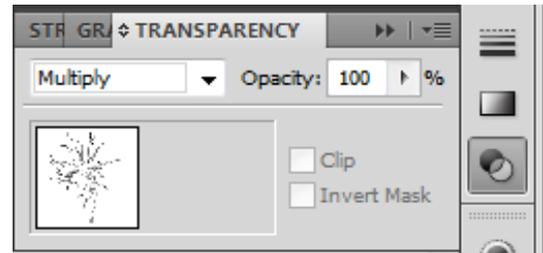
Open the layers window by pressing  in the toolbar to the right.



Using the eye-icons you can turn of layer visibility of all layers and then turn on visibility for one layer at a time to look what the renders corresponding to the different render layers look like.

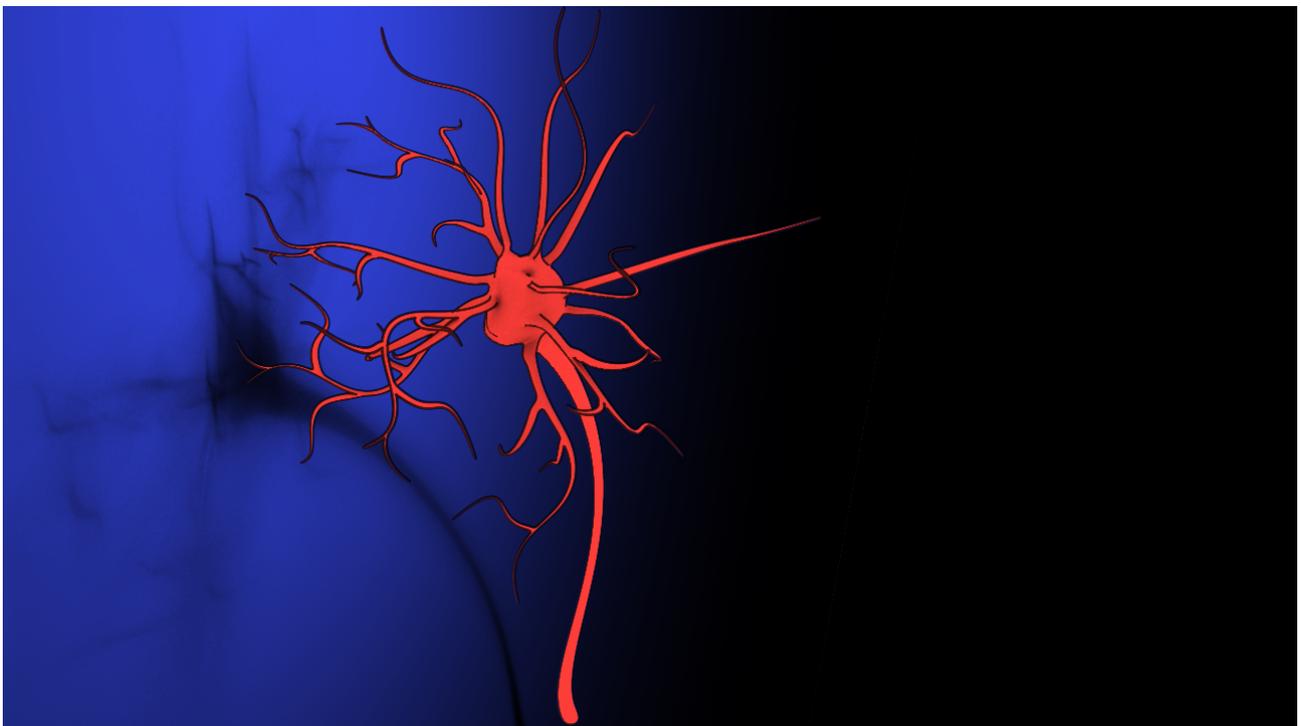
Select the artwork in each layer directly, by clicking to the right of the small circle in each layer.

With the artwork in the top 'Toon' layer selected, press the transparency button in the toolbar  to open the transparency settings.



Change the transparency mode of the Toon layer to Multiply

Do the same for all the other layers to create a blended image. Play around with the opacity, the blend modes, and even turning some layers of completely, until you get an apperance you like.



Render layers and post processing in animations

Open the scene session4_cadherin.mb

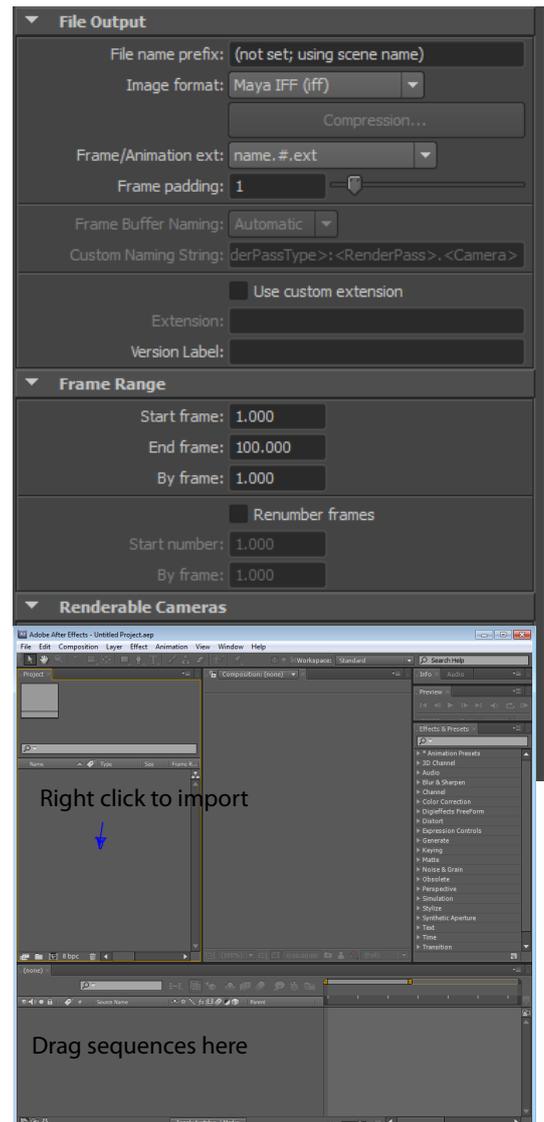
Have a look at the file. Do a playback, check out the render layers.

Open the render settings.

This time we will create an animation so set the Frame/Animation ext: to 'name.#.ext' and under Frame Range, set the start frame to 1 and the End Frame to 100

Go to Rendering menu-set, Render -> Batch Render to render the 100 individual frames.

In order to save time, I have pre-rendered these files for you.



Open Adobe After Effects.

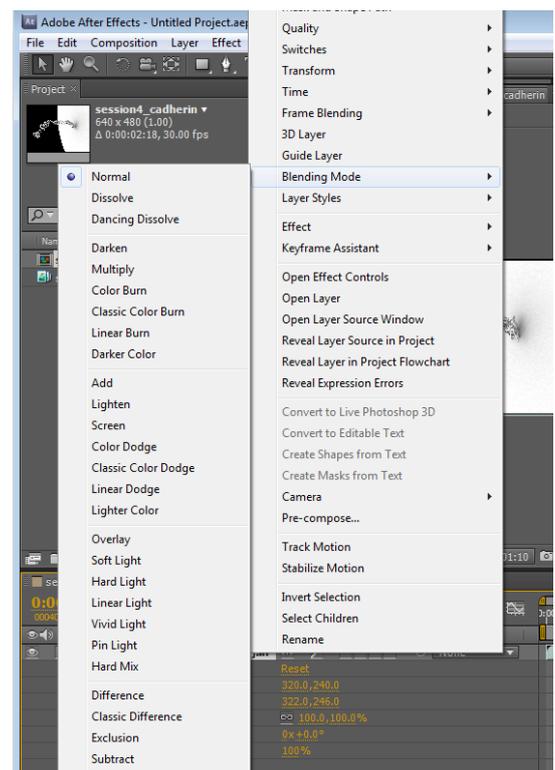
Right-click in the projects pane (see arrow), and select Import -> File

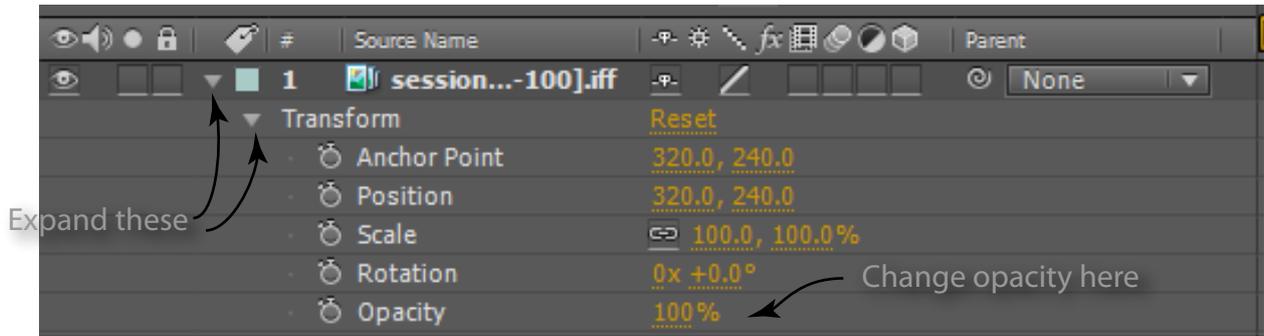
Navigate to your rendered sequences and select any one of the numbered .iff files. Press OK in the dialogue box that appears. After Effects will recognize that you are importing a sequence and will import all files.

Do the same for all layers: toon, color, occl

When all files are imported, drag them down to the Compositions pane to the bottom, a layer corresponding to the sequence will be created.

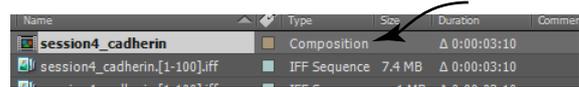
To change blending mode of the layer right-click the layer and go up to Blending Mode



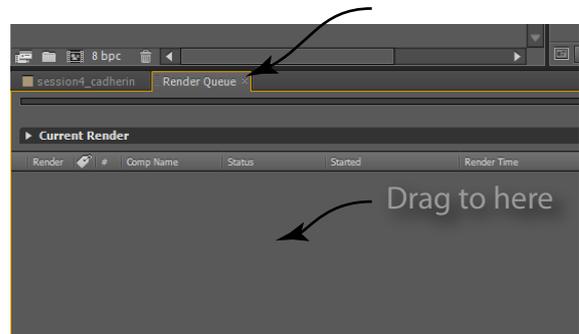


To change the opacity percentage, expand the arrows to the left of the layers to reveal the attributes for the layer.

When you are finished with your composition:

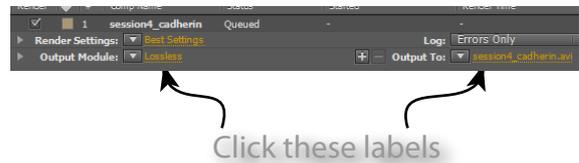


In the top of the compositions pane (the lower part of the screen), switch to the Render Queue tab.

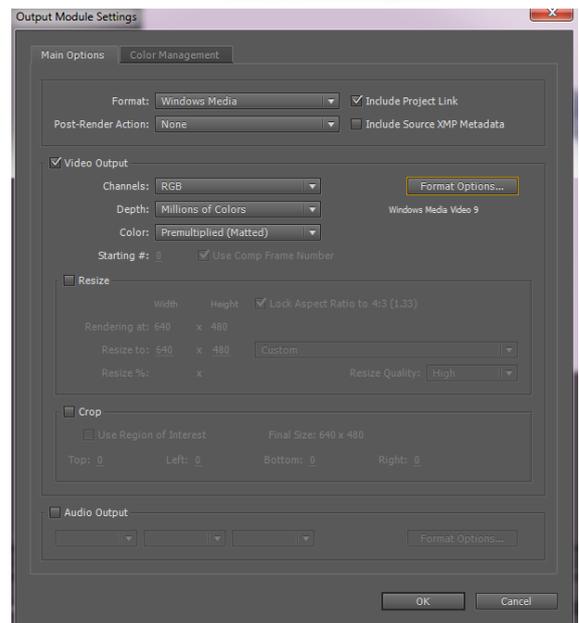


Grab your composition in the projects pane (top left part) and drag it down and drop it in the render queue.

By default you will have the output set to Lossless, and the output to .avi (.mov on macs). Press the output mode label.

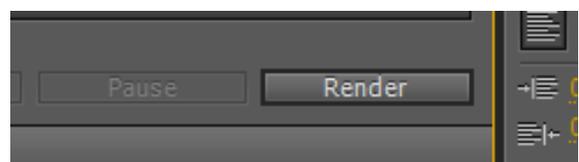


In the Output Module Settings box that appear. Change to your preferred format. In my experience, Windows Media is the best for presentations on a PC and .mov (quicktime) is best for presentations on a mac.



Click the Output To - button to change the path to the animation.

To the right side of the Render Queue pane, hit the Render -button to start encoding your animation.



Textures - highlighting the ligand binding domain of EphA2

Shaders in Maya are assigned to entire pieces of geometry. If you want to have different areas of one object appear in different colors, you need to assign a *texture*.

Open the file 'EphA2_receptor_with_ephrinA5_ligand.mb' this file is displaying crystallography data from PDB, with the help of molecular Maya, in polygon geometry.

Select the larger chain (the EphA2) and with the Polygons menu set, do 'Create UVs' -> 'Automatic Mapping'

This will create a 2D projection of the surface of the geometry (a UV-mapping) so that a 2D image (a texture) can be fitted onto the object for rendering.

Open the UV Texture Editor by (still in Polygons menu set) 'Edit UVs' -> 'UV Texture Editor', and you will see how Maya has projected the EphA2 geometry onto a plane. Close the UV Texture Editor.

Now that we have assigned a UV mapping we can start to add texture to the geometry. In this case we will do so by painting a texture directly in Maya.

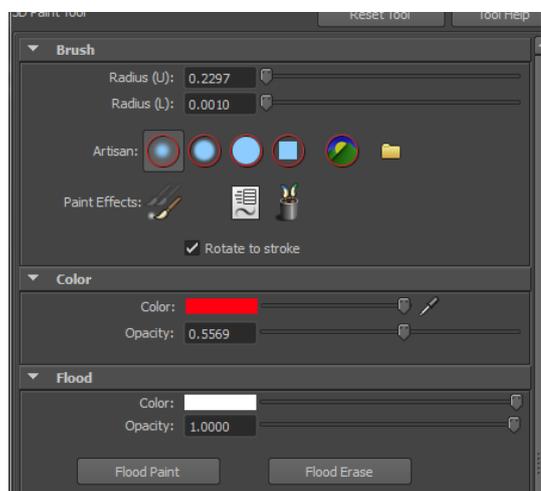
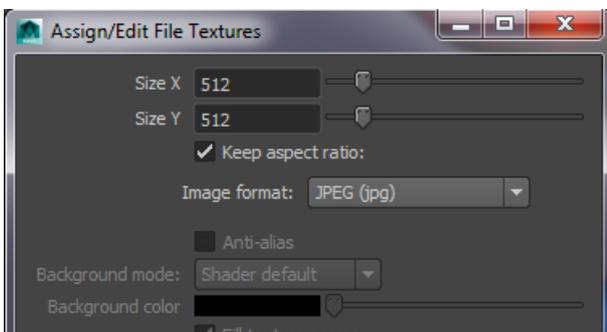
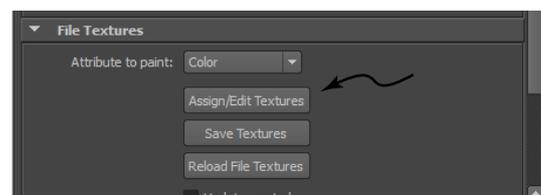
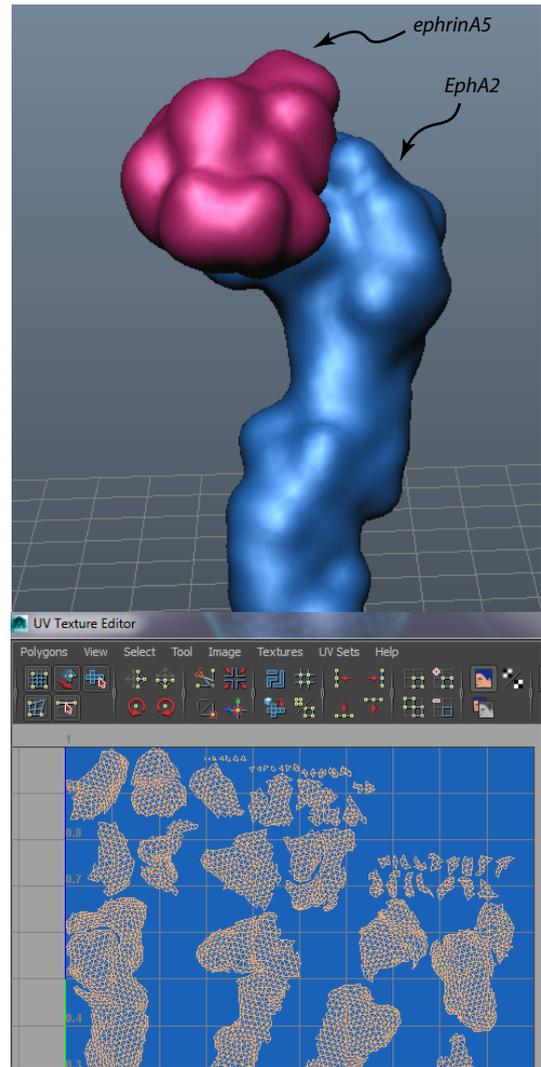
RMB click and drag to 'Object Mode'.

Select the EphA2 geometry.

In the Rendering Menu-set, do 'Texturing' -> '3D Paint Tool'

You will get a warning saying that some surfaces have no file texture assigned, that is because we said we wanted to paint on the texture, but our object didn't yet have a texture assigned to it. So let's assign a texture:

In the tool options for the 3D paint tool that appear scroll down to the 'File Textures'-section and click the 'Assign/Edit Textures' button. In the pop-up that appears set the sizes to 512 and the file-type to jpg, click 'Assign/Edit Textures'.

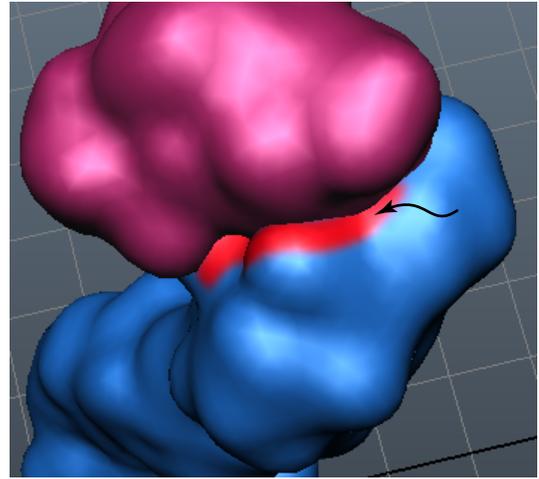
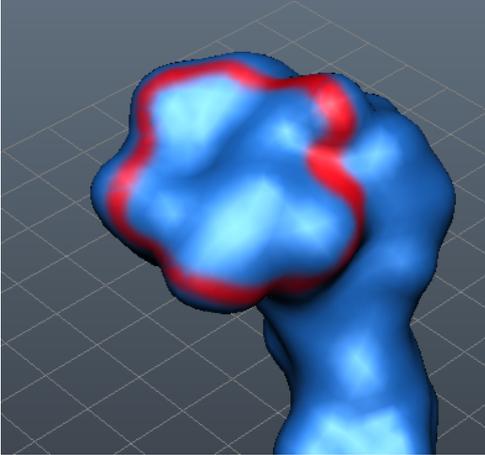


Use the tool settings (shown on the left here) to set the brush size, type, opacity and color. You can also flood the entire object using the 'Flood Paint'-button.

Start by marking the area closest to the ephrinA5 ligand with a color of your choice:

Continue all around the edge of the ligand.

When that is done, select the ephrinA5 ligand and do 'Ctrl+H' to hide it:



Now, select the EphA2 geometry again and re-do 'Texturing' -> 3D Paint Tool.

Finish filling out the ligand binding domain:

