Shain Lab / Confocal Microscopy
July 6 – Aug 25

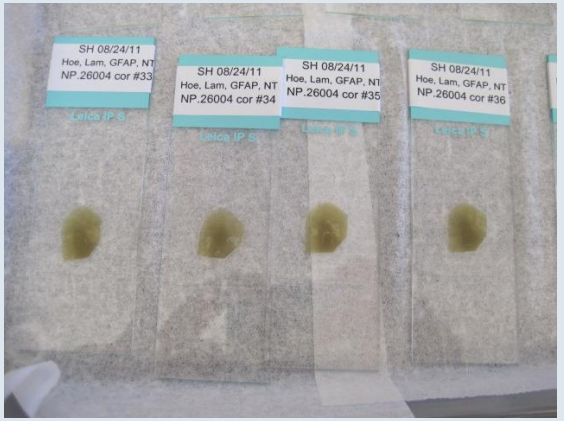
Sophia Hannaford

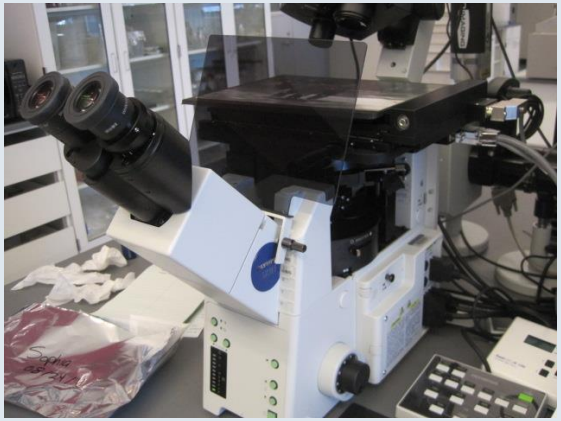
My Project

- Image human tissue slices. From control and from Alzheimer's diagnosed tissue
  - Is there a difference in the structure, density, # of branches of the vasculature?
- To pave the way for an application for a grant
- Practiced on rat and monkey tissue until human tissue arrived

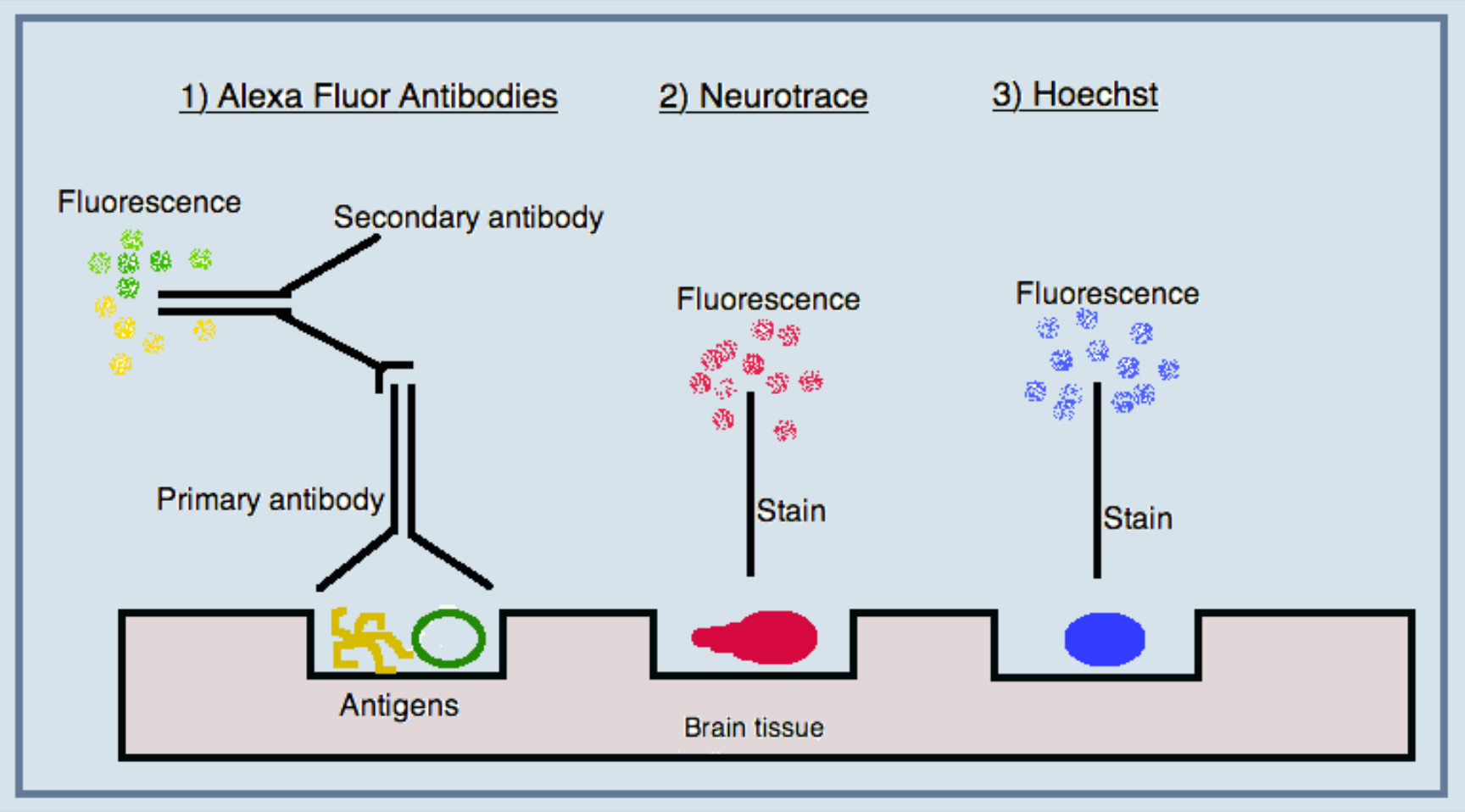
Slicing, IHC and Imaging Process

- Cut sections of brain with Vibratome blade to 80µm
- Day 1 of Immunohistochemistry
- Day 2 of immunohistochemistry
- Day 3 of immunohistochemistry
- Mount slices onto slides
- Image



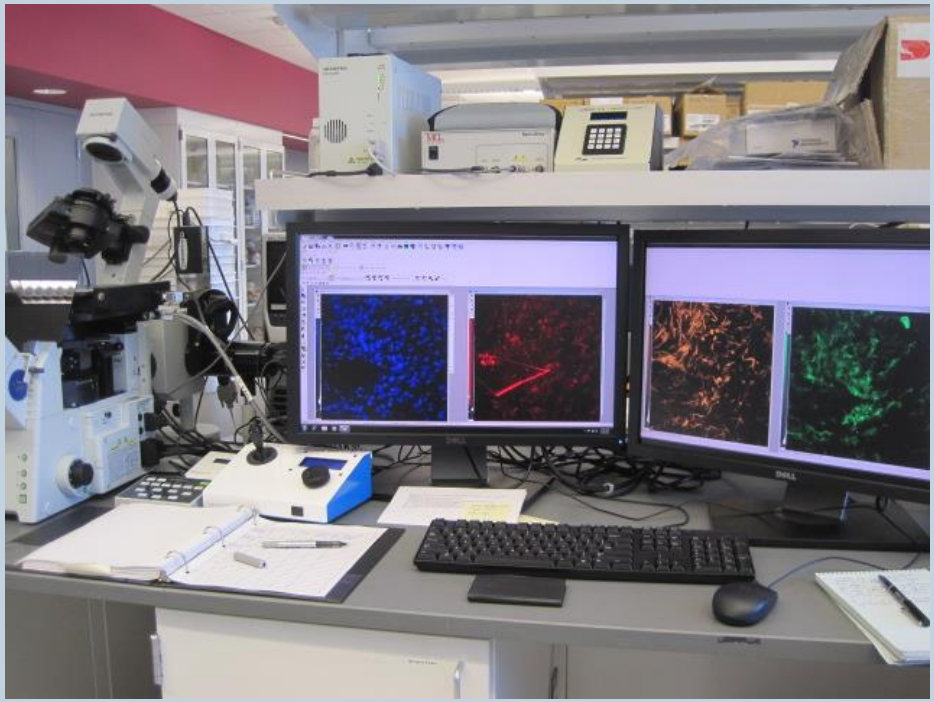


Immunohistochemistry



Confocal microscopy

- To image tissue that is thicker than the focal plane
- Produces 3D images
- Image mostly in 4 channels:
  - DAPI
  - CY5
  - TRITC
  - GFP

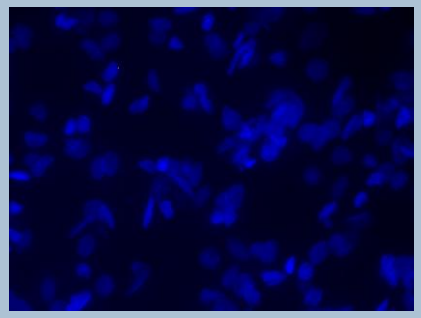


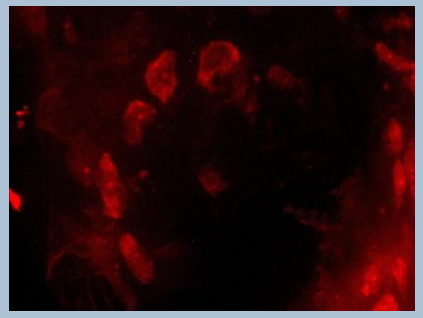
Hoechst
DAPI

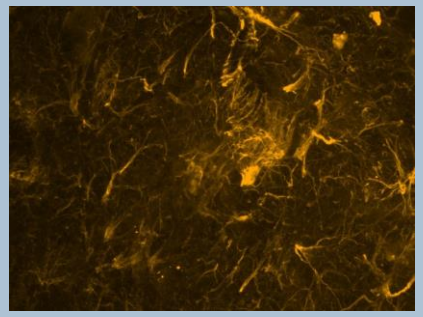
Neurotrace
CY5

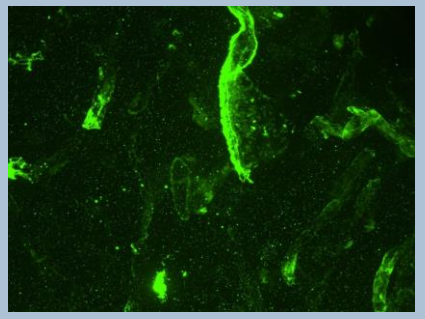
GFAP
TRITC

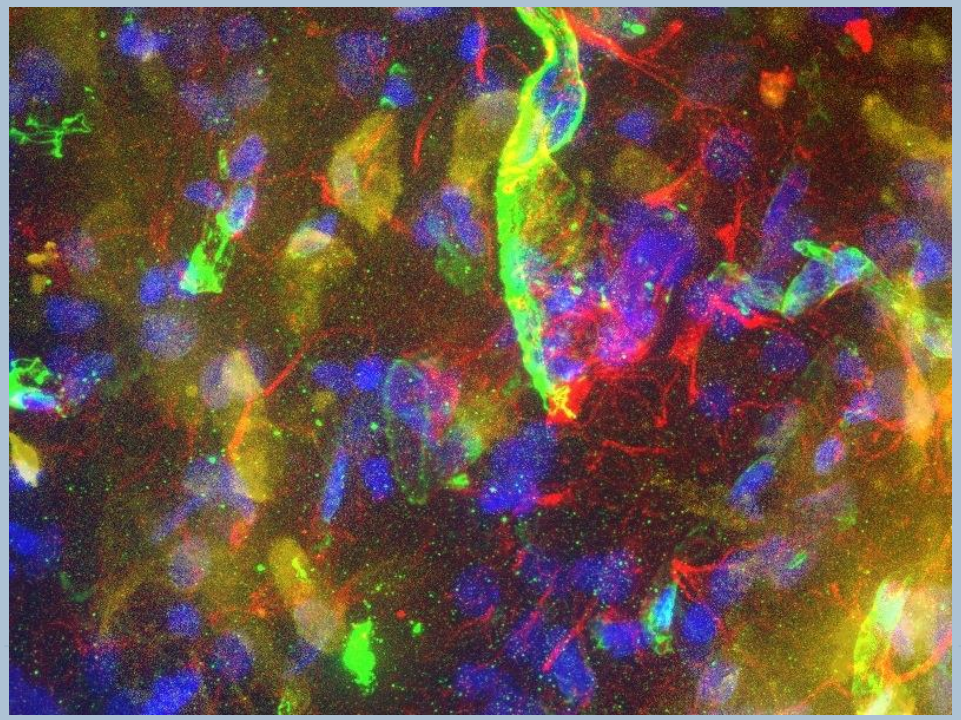
Laminin
GFP

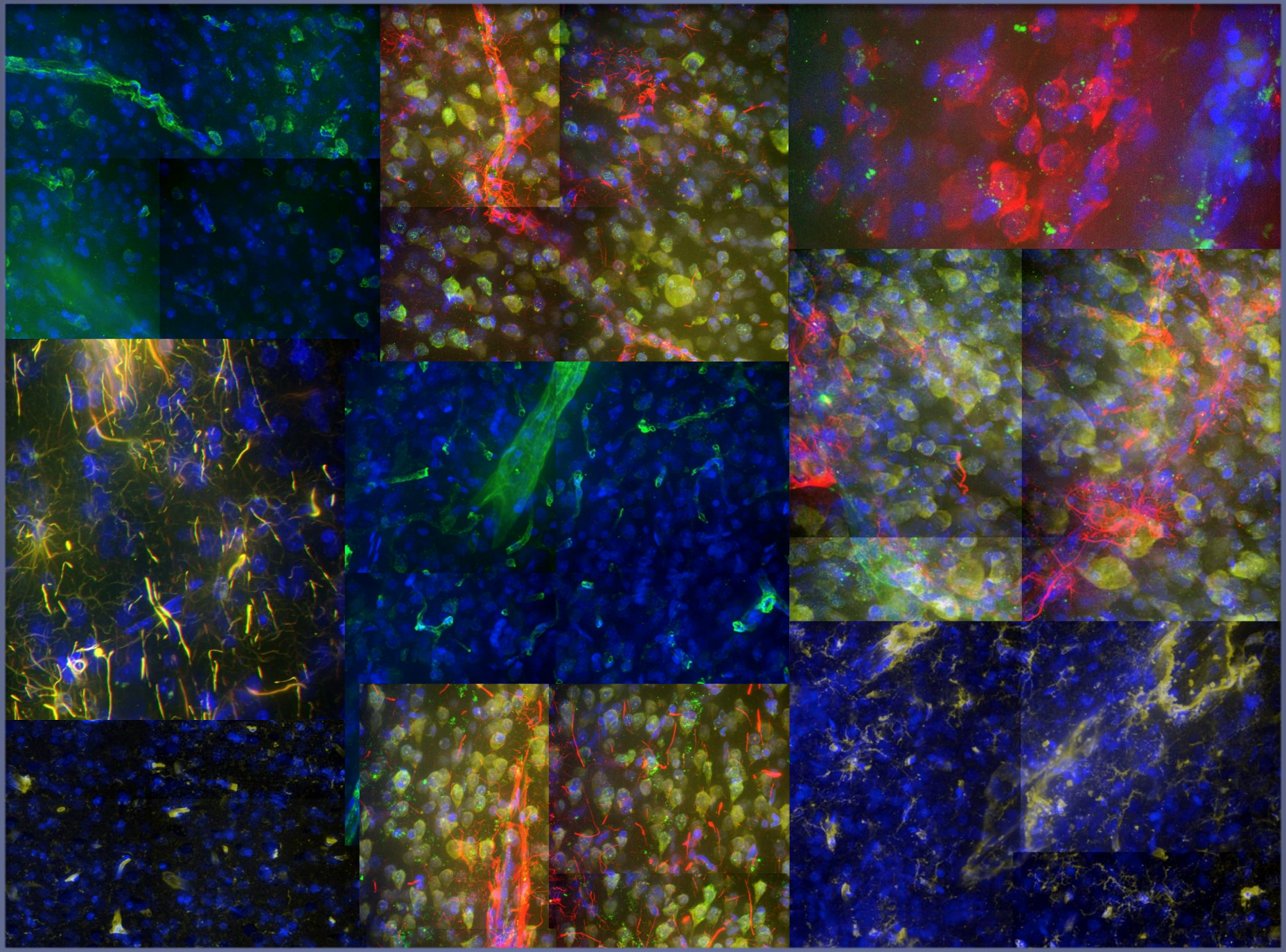


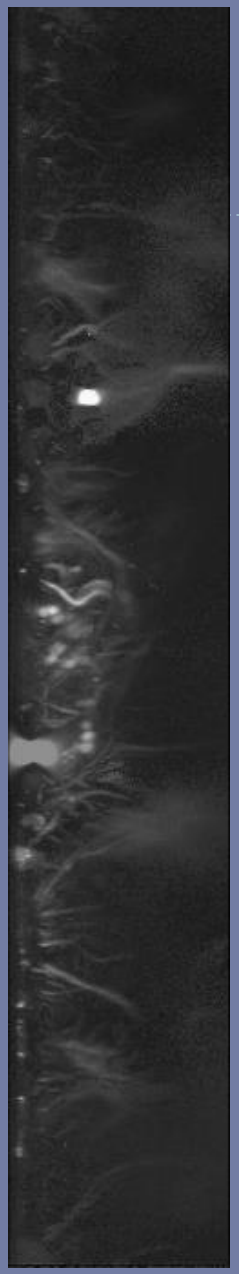












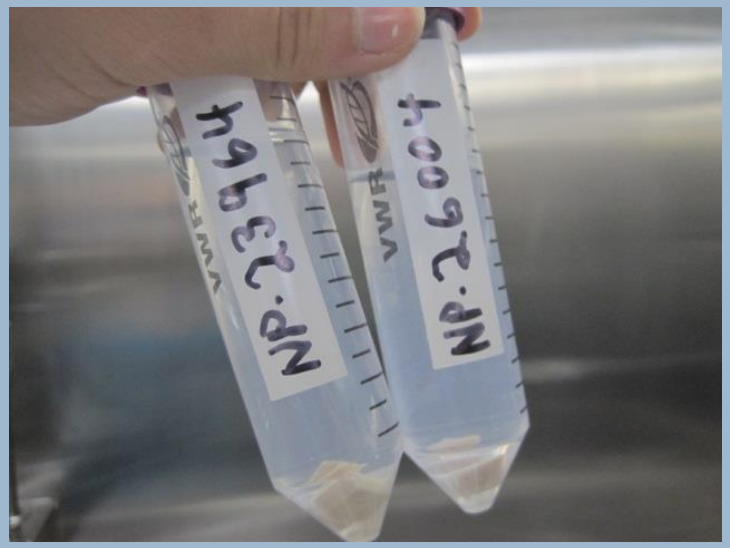
ImageJ

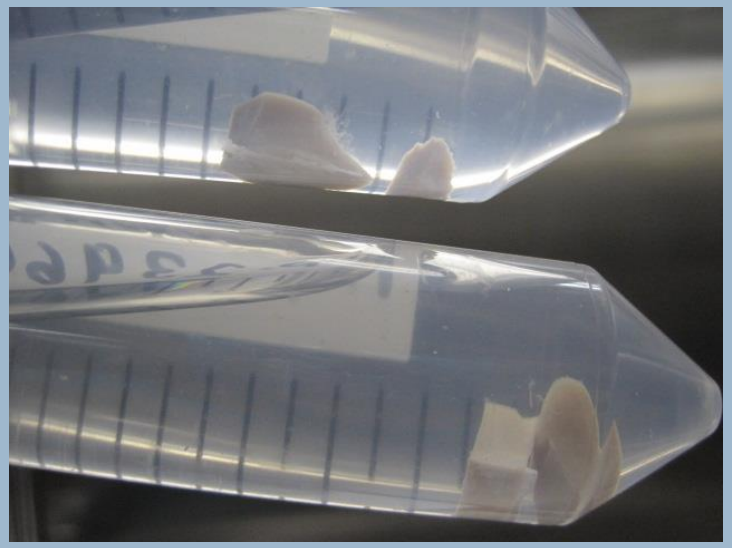
Used to look at sections in 3D

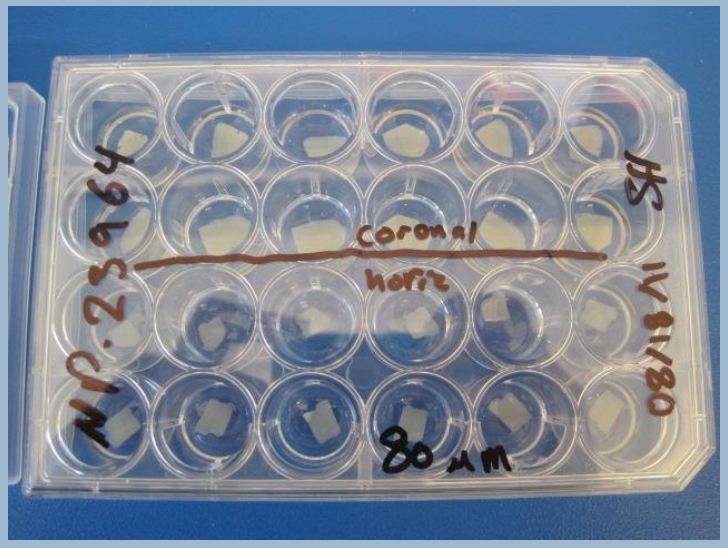
To see how well the antibodies and stains penetrated

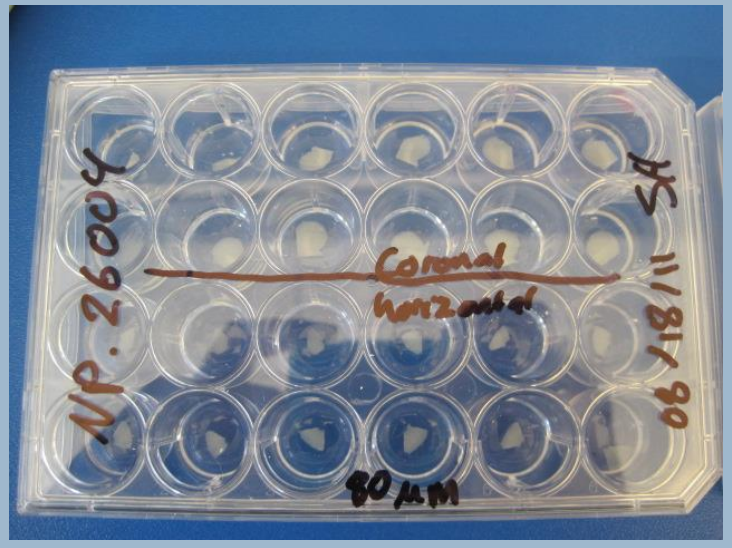
GIF

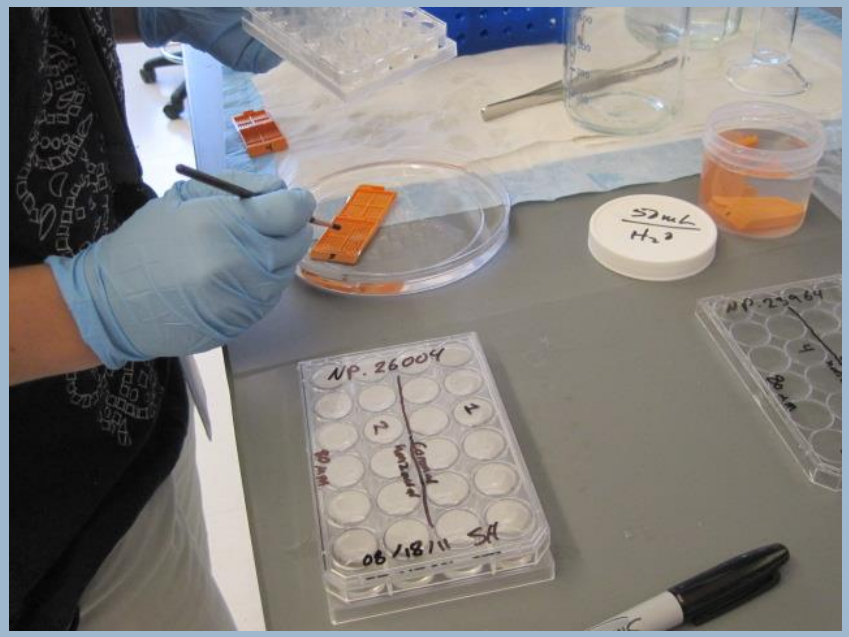
Human Tissue







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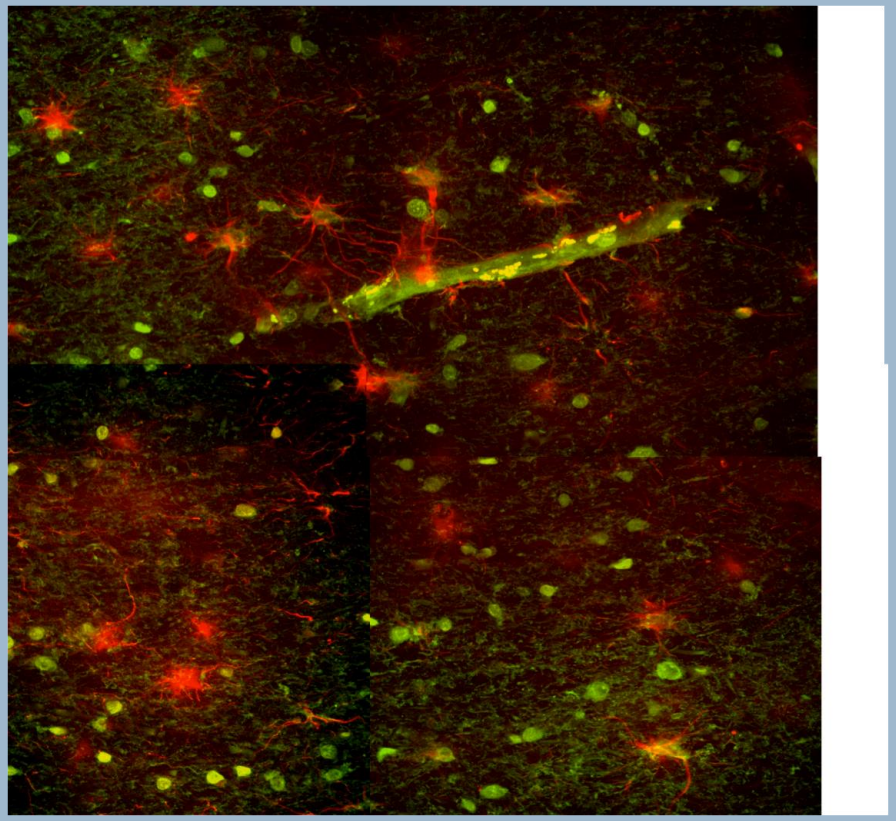

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