SHEEP BRAIN DISSECTION

**Brain External Anatomy** - Be sure you have found and can identify and give general functions for the following structures on and within the sheep brain.

**Forebrain: CEREBRUM**

- *Cerebrum* with its two *cerebral hemispheres*
- *Longitudinal fissure* separating the two cerebral hemispheres
- *Corpus callosum* (commissural fibers connecting the cerebral hemispheres)
- Distinguish between *gyri* and *sulci* on the surface of the cerebrum
- Generally identify the locations of the four *lobes* of the cerebrum
- *Pineal gland* (secretes melatonin)

*Olfactory bulbs and olfactory tracts (I)*

- *Optic nerves (II), optic chiasma (medial retinal fields decussate here), optic tracts*
- *Mammillary bodies* (part of the hypothalamus) (also spelled Mamillary)
- *Pituitary gland* (hypophysis) and *infundibulum*

**MIDBRAIN**

- Spread open the *transverse fissure* to view the *corpora quadrigemina* with its *superior (visual reflex centers) and inferior colliculi (auditory reflex centers)*
- *Cerebral peduncles* (Projection tracts)
- *Oculomotor nerves (III)*
- *Trochlear nerves (IV)*

**Hindbrain: PONS VAROLII**

- Connects parts of the cerebellum and medulla to the cerebrum
- *Trigeminal nerves (V)*
- *Abducens nerves (VI)*
- *Facial nerves* (VII)

**Hindbrain: CEREBELLUM**

- Note the gyri and sulci on the surface of the cerebellum

**Hindbrain: MEDULLA OBLONGATA**

- Sometimes called the spinal bulb
- *Vestibulocochlear nerves* (VIII)
- *Glossopharyngeal nerves* (IX)
- *Vagus nerves* (X)
- *Accessory nerves* (XI)
- *Hypoglossal nerves* (XII)
- Contains vital reflex centers: Cardiac, Vasomotor, Respiratory

*You don’t need to identify these nerves on the lab exam but do need to know name, number and function.*
Brain Internal Anatomy

NOTE: Before you make a cut, read these directions carefully. Work with another group. One group will make the midsagittal section described below. The other group will make the infundibular section. Each group can then swap half of their sheep brain with the other group and each group will be able to see the structures described below.

Midsagittal section

• Note corpus callosum (commissural fibers)
• Septum pellucidum (separates the right and left lateral ventricles)
• Fornix (part of olfactory mechanism in the sheep)
• Third ventricle and its choroid plexus (secretes cerebrospinal fluid (CSF))
• Intermediate mass connecting the thalamus across the 3rd ventricle (commissural fibers)
• Aqueduct of Sylvius, cerebral aqueduct or mesencephalic aqueduct in the midbrain (transports cerebrospinal fluid from the 3rd to the 4th ventricles)
• Note cerebral peduncles in the midbrain (these are projection tracts)
• Fourth ventricle with its choroid plexus (secretes CSF)
• Note the arrangement of gray and white matter of the cerebellum (arbor vitae)

Frontal section at level of infundibulum

• Note the gray matter of the cortex (composed of cell bodies of neurons)
• Note the white matter in the interior of the cerebrum (composed of myelinated fibers of neurons)
• Note the position of the corpus callosum in this view
• Note the lateral ventricles and their choroid plexuses (secretes CSF)
• Note the caudate nuclei just lateral to the lateral ventricles
• Note the fornix
• Note the location of the thalamus on either side of the third ventricle
• Note the intermediate mass
• Note location of the hypothalamus toward the bottom of the 3rd ventricle (remember the mammillary body is part of the hypothalamus)