

MAPPING HUMAN CORTEX

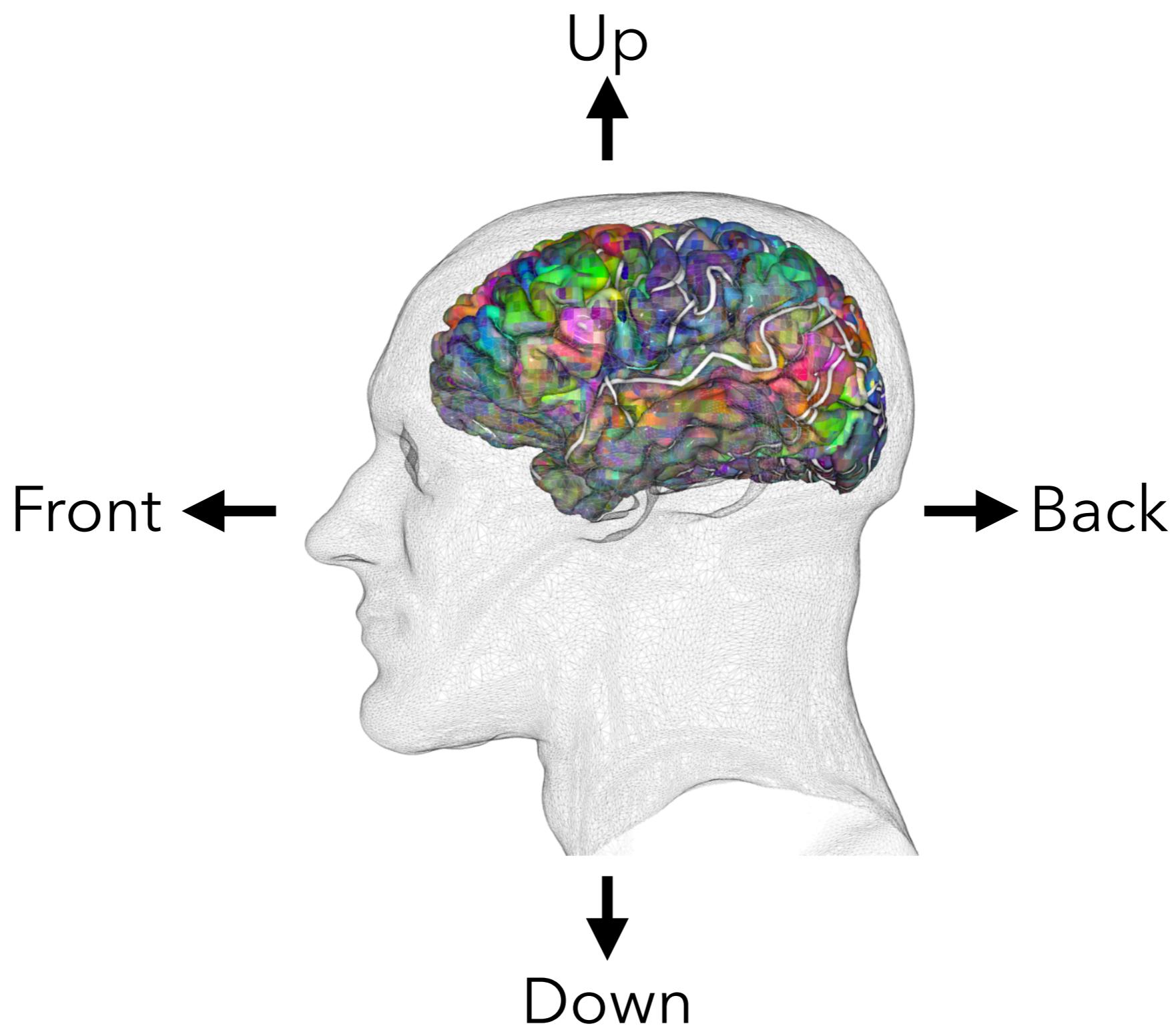
Prof. Alexander Huth

1.27.2020

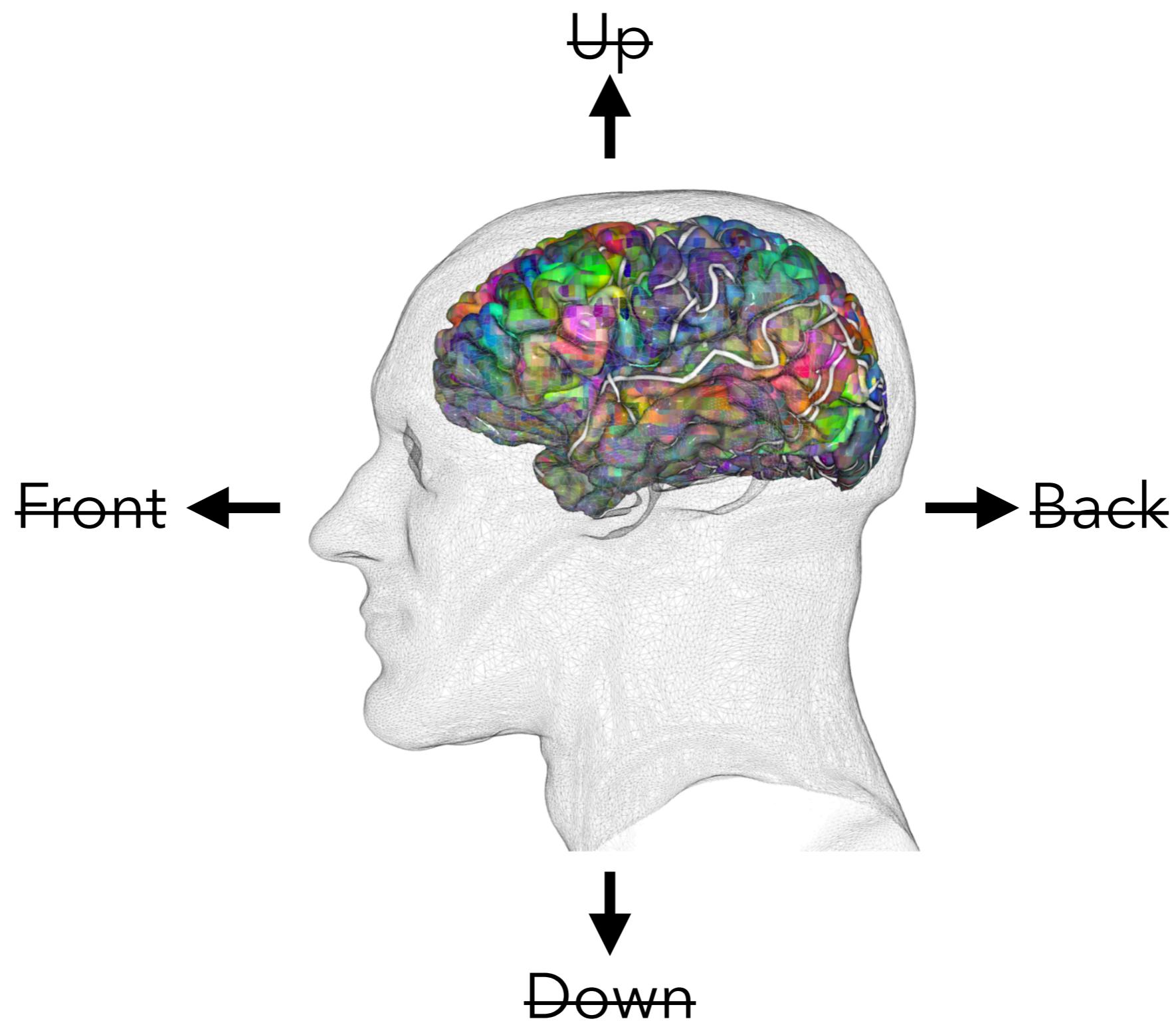
ANATOMICAL TERMS

- * Brain structures are usually named using some combination of Latin words that signify ***location***, ***shape***, or ***function***
 - * (or the name of the person who discovered it)
- * So it's useful to know basic terms used for ***location*** and ***shape***

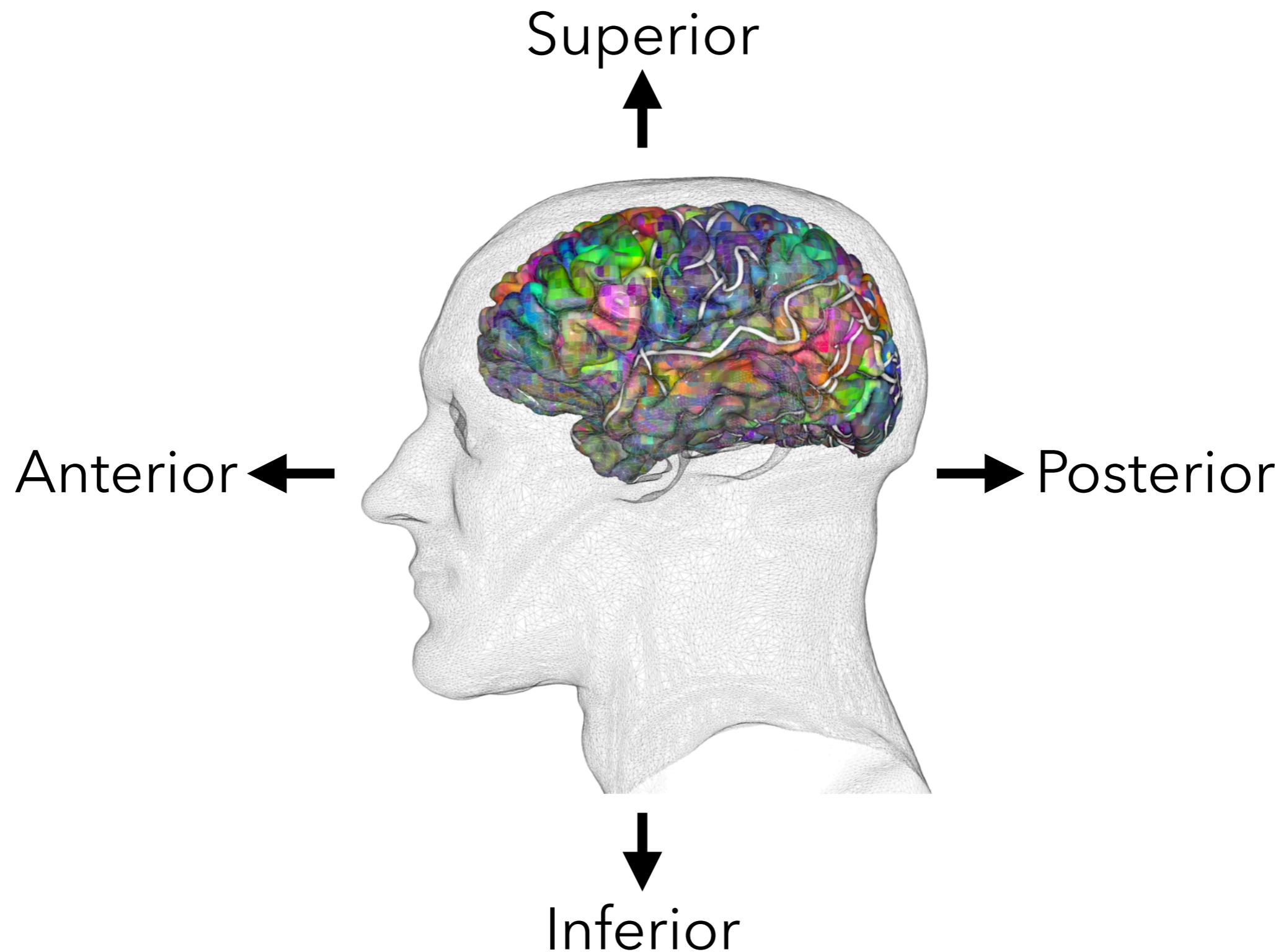
LOCATION TERMS



LOCATION TERMS



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LOCATION TERMS

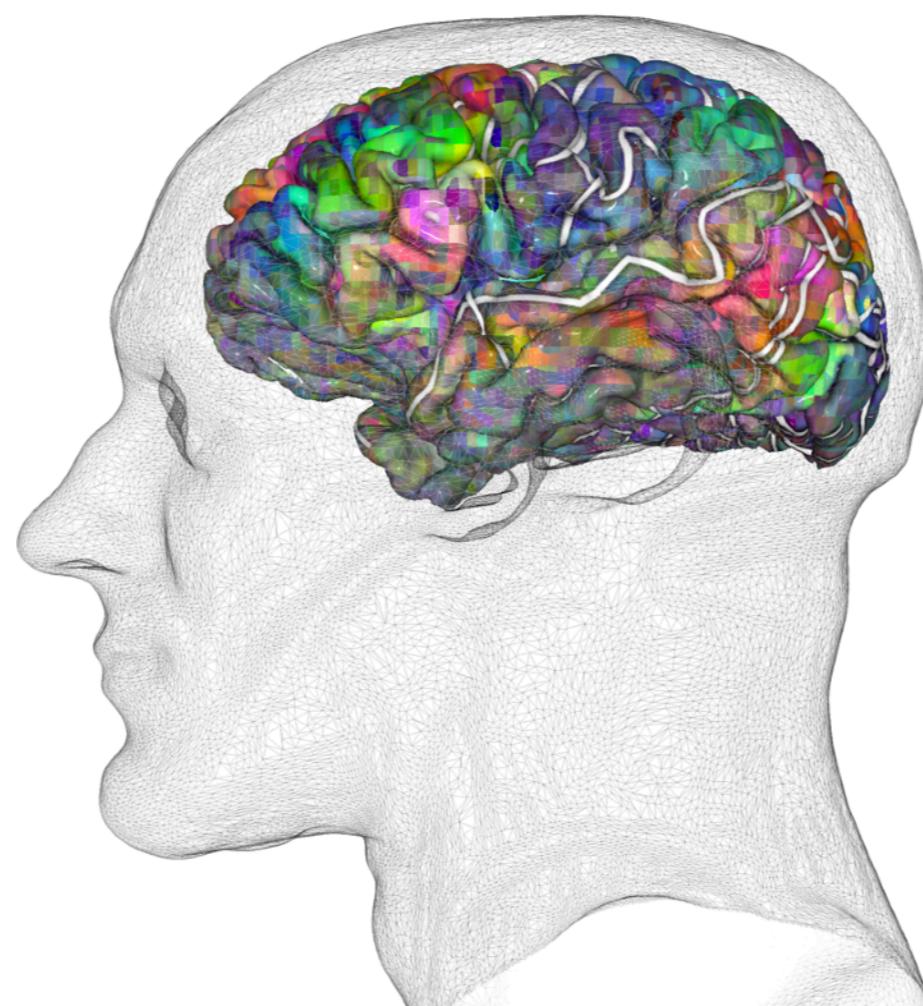
Superior / Dorsal



Anterior /
Rostral



Posterior /
Caudal



Inferior / Ventral



LOCATION TERMS

Superior / Dorsal



Anterior /
Rostral



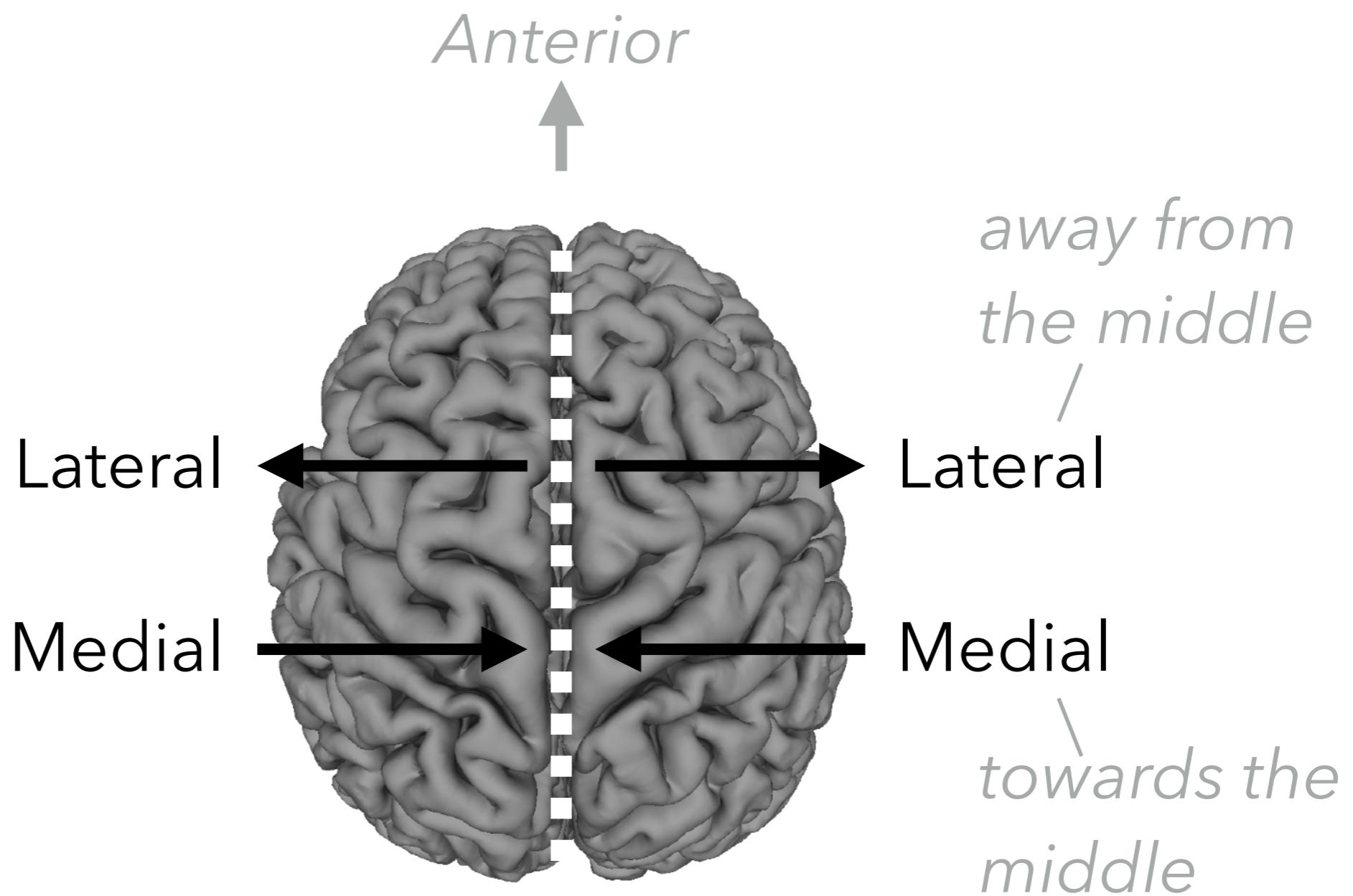
Posterior /
Caudal



Inferior / Ventral

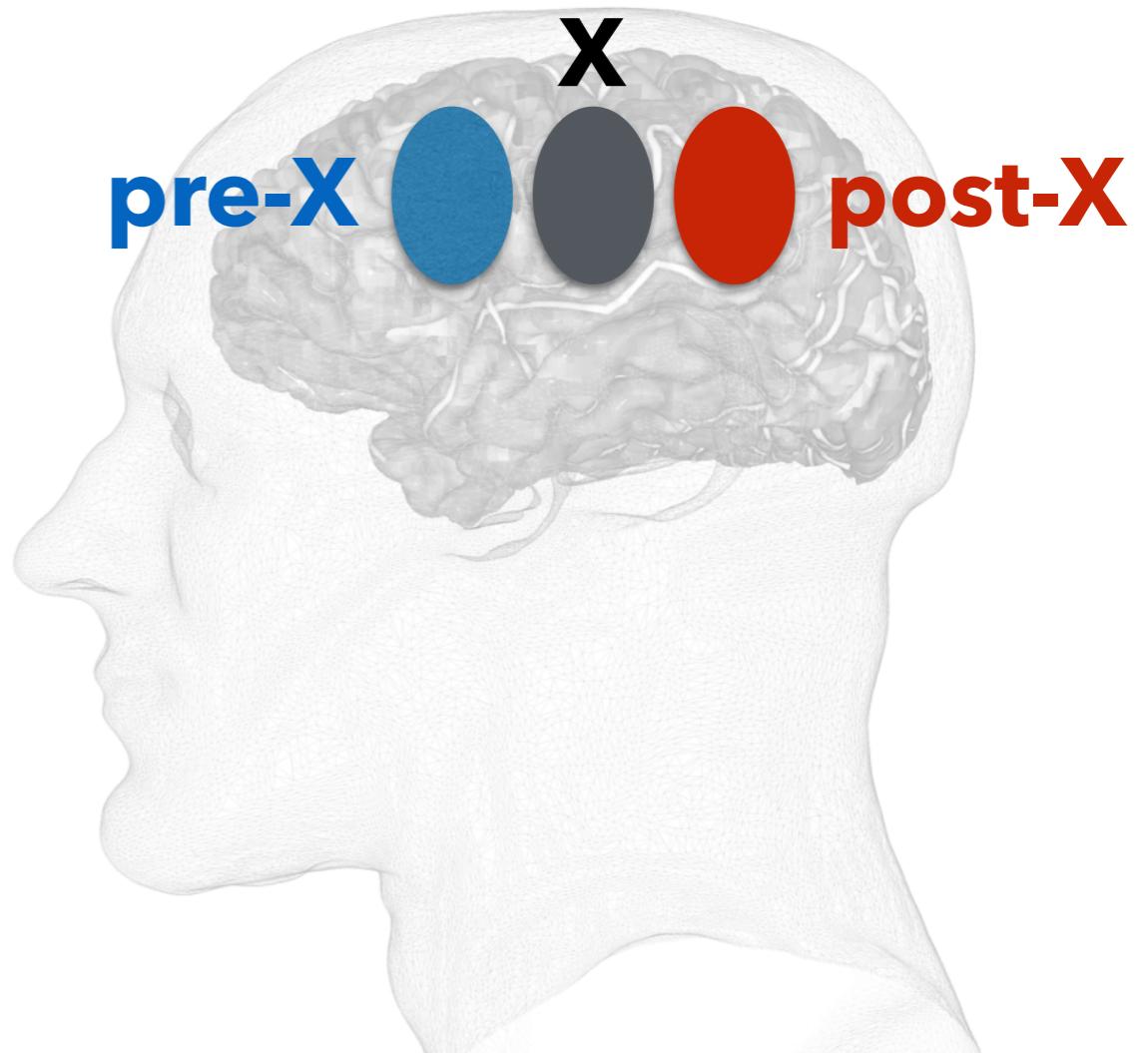


LOCATION TERMS

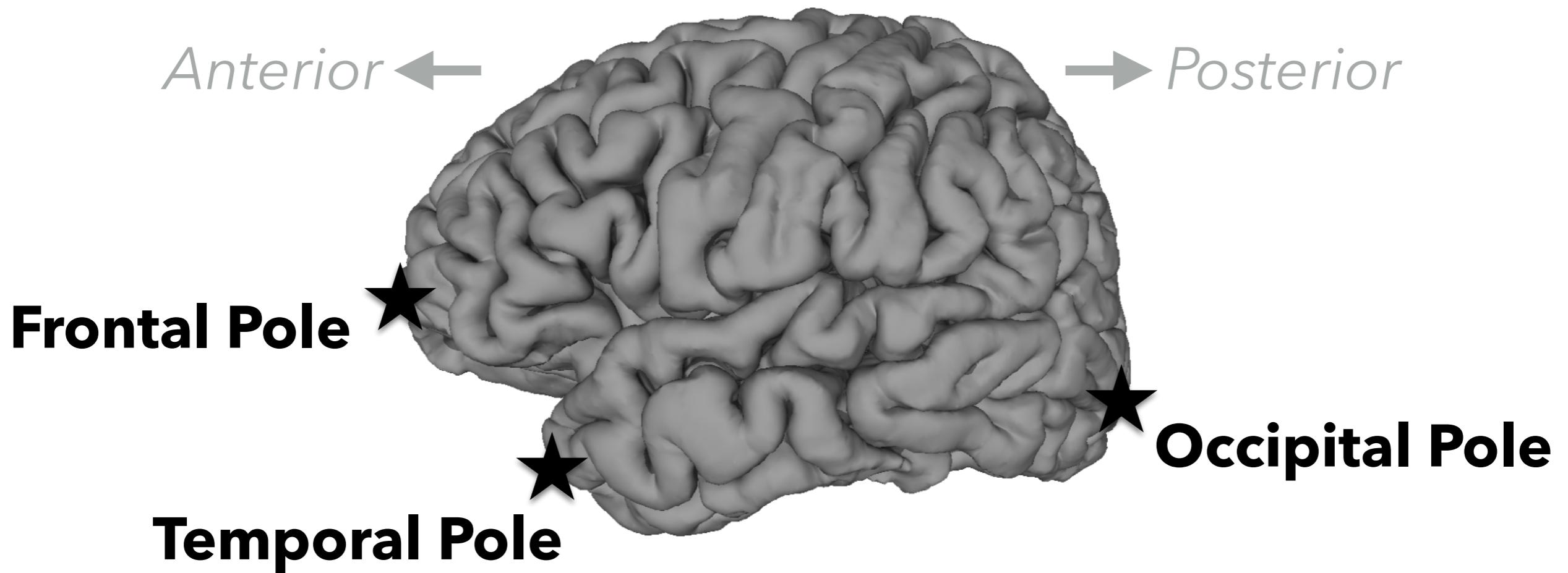


LOCATION TERMS

- * Relative locations are sometimes noted using prefixes:
 - * **pre-** (in front of)
 - * **post-** or **retro-** (behind)

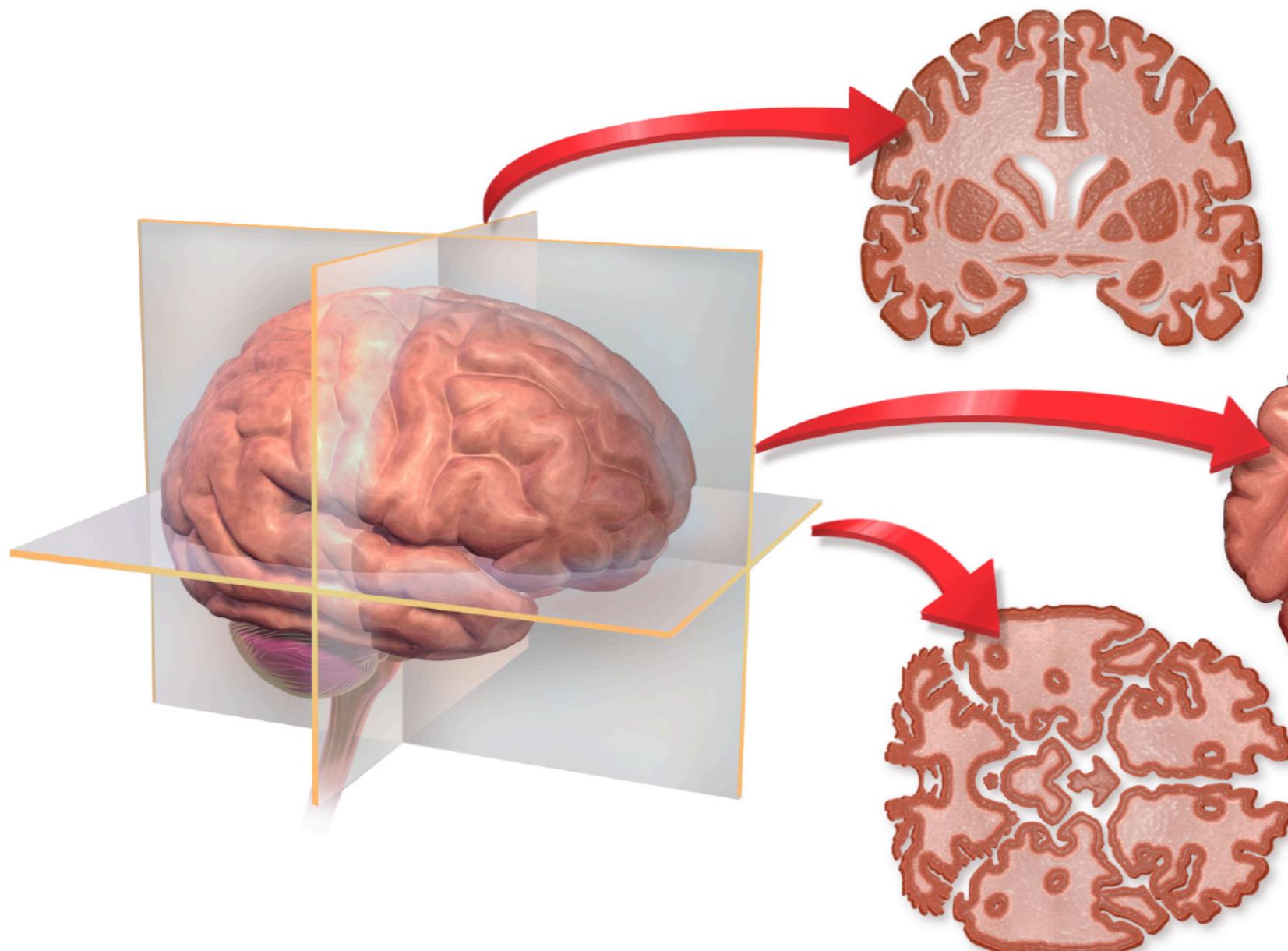


THE "POLES"



SECTIONAL PLANES

Coronal (👑) Section / View

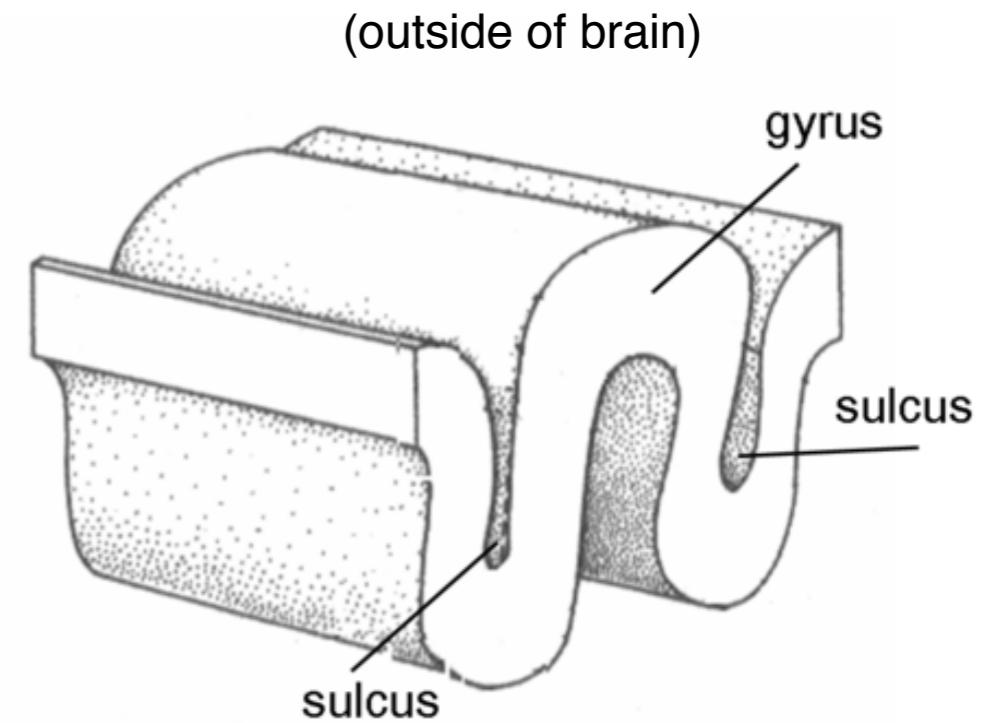


Sagittal (♂)

Axial / Transverse / Horizontal

SULCI & GYRI

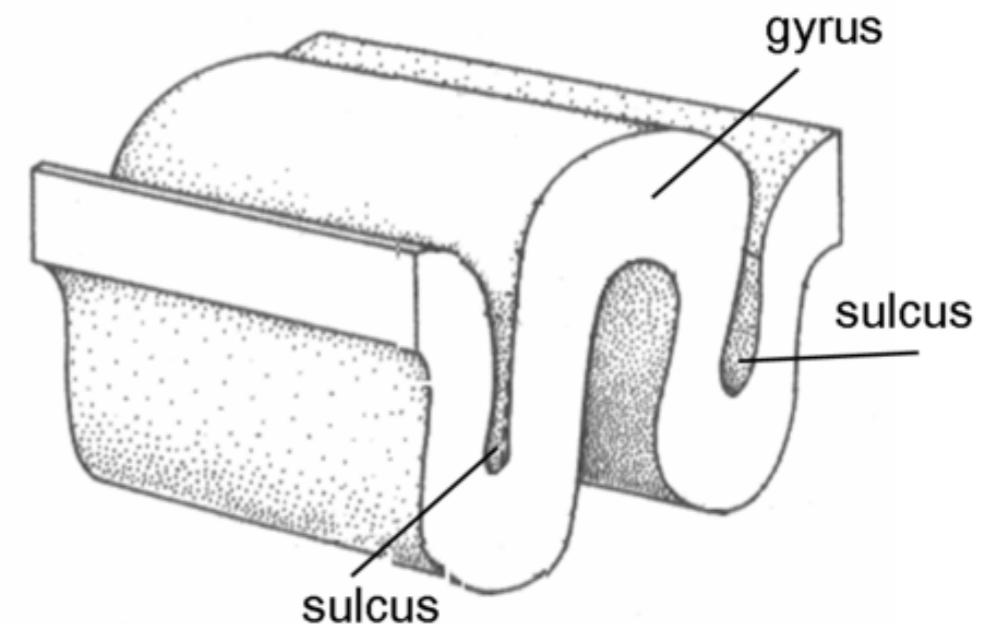
- * Cortical folds are called **sulci** (singular: **sulcus**) & **gyri** (singular: **gyrus**)
- * Sulci are **inward** folds, gyri are **outward** folds
- * Alt: (some) big sulci are (sometimes) called **fissures**
- * See <https://gallantlab.org/brainviewer/sulcigyri/>



(inside of brain)

SULCI & GYRI

- * Major sulci:
 - * Sylvian fissure / lateral sulcus (outside of brain)
 - * Central sulcus
 - * Parietooccipital sulcus
 - * Intraparietal sulcus
 - * Calcarine sulcus (inside of brain)
 - * Superior temporal sulcus

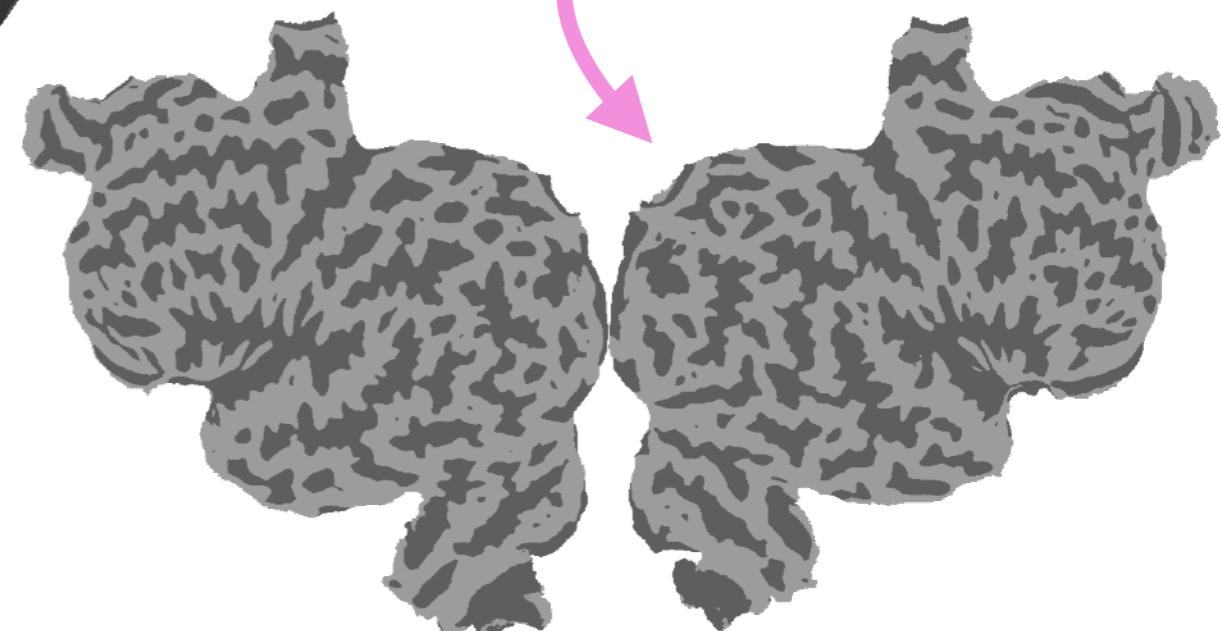


SULCI & GYRI



"Inflated" Brain

"Flattened" Brain



SULCI & GYRI

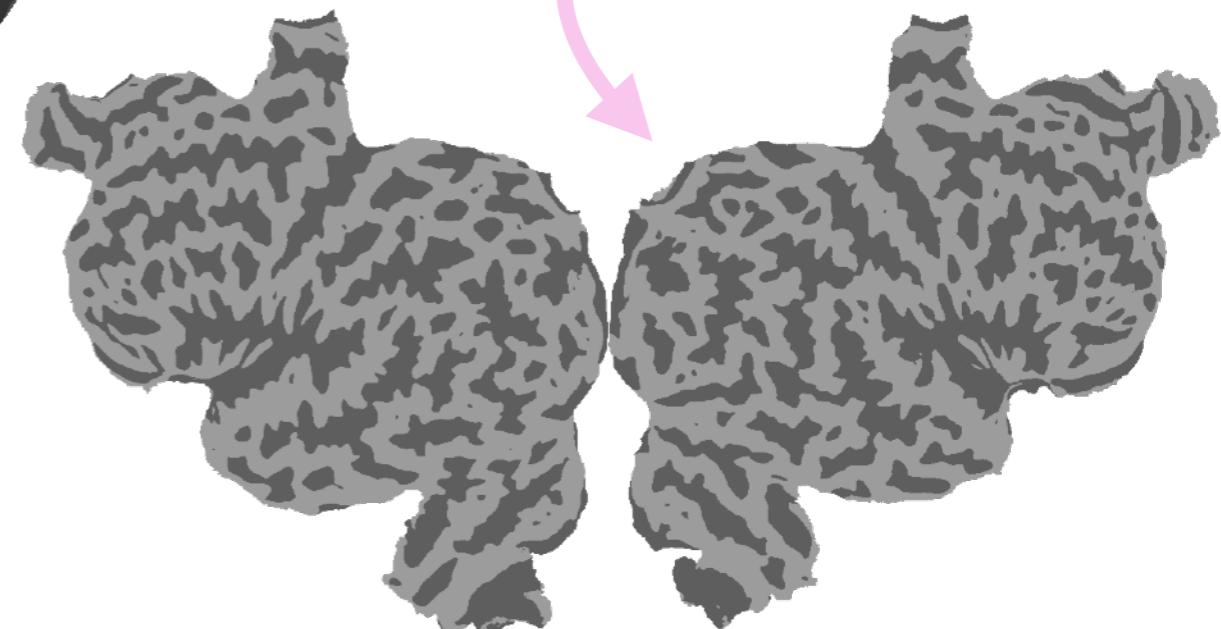


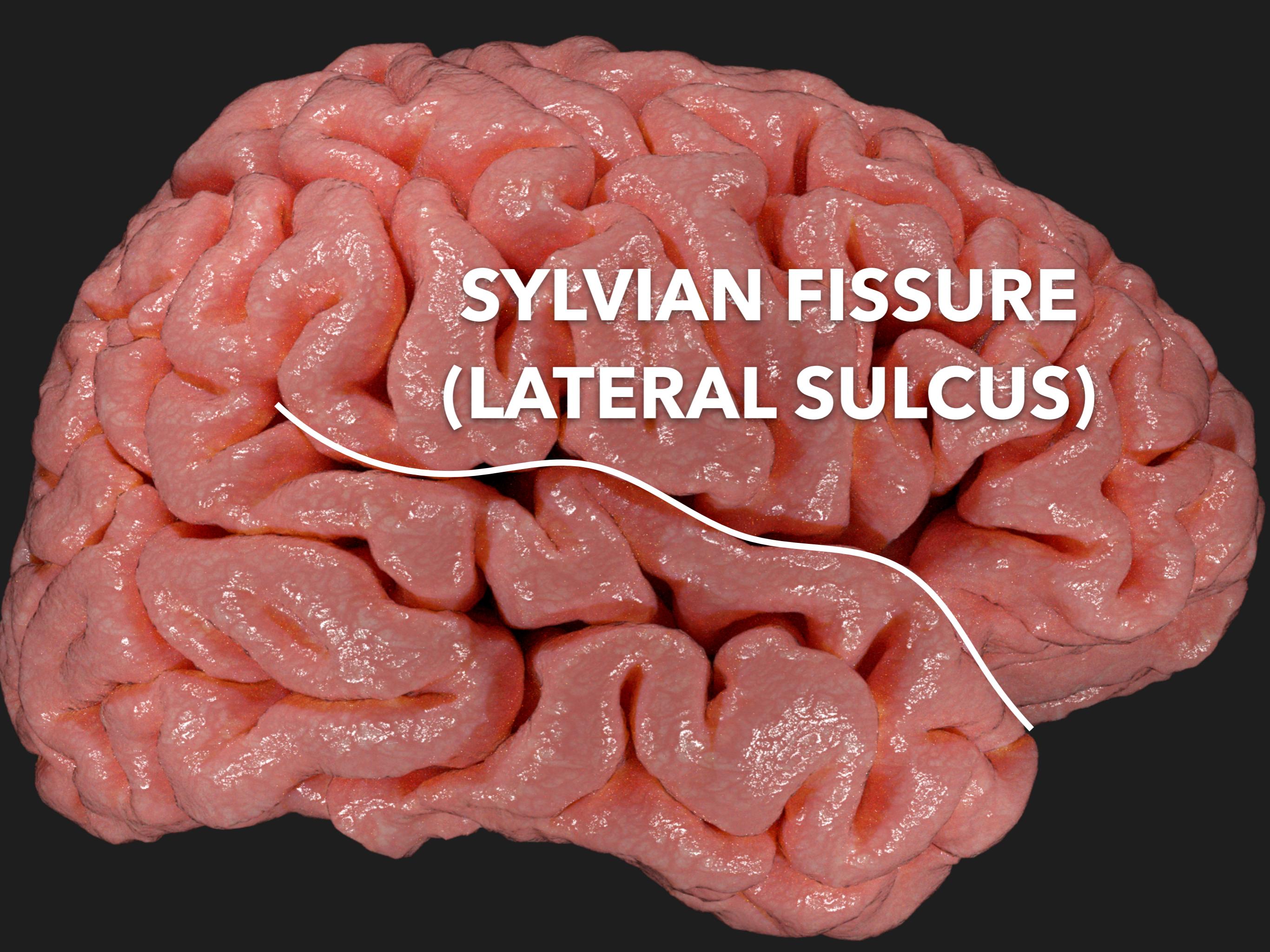
"Inflated" Brain

Sulci are dark

"Flattened" Brain

Gyri are light

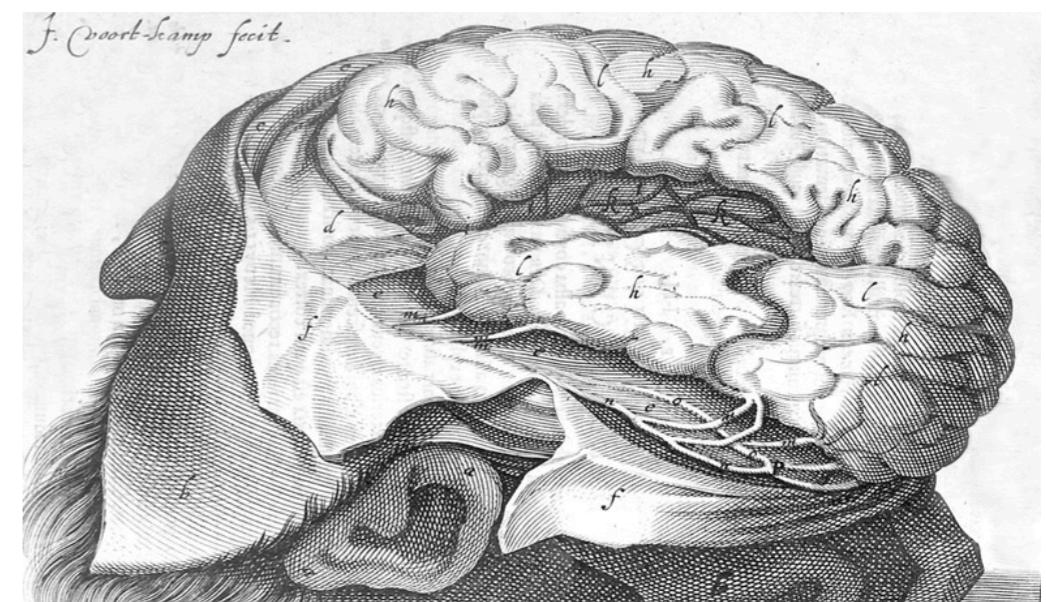




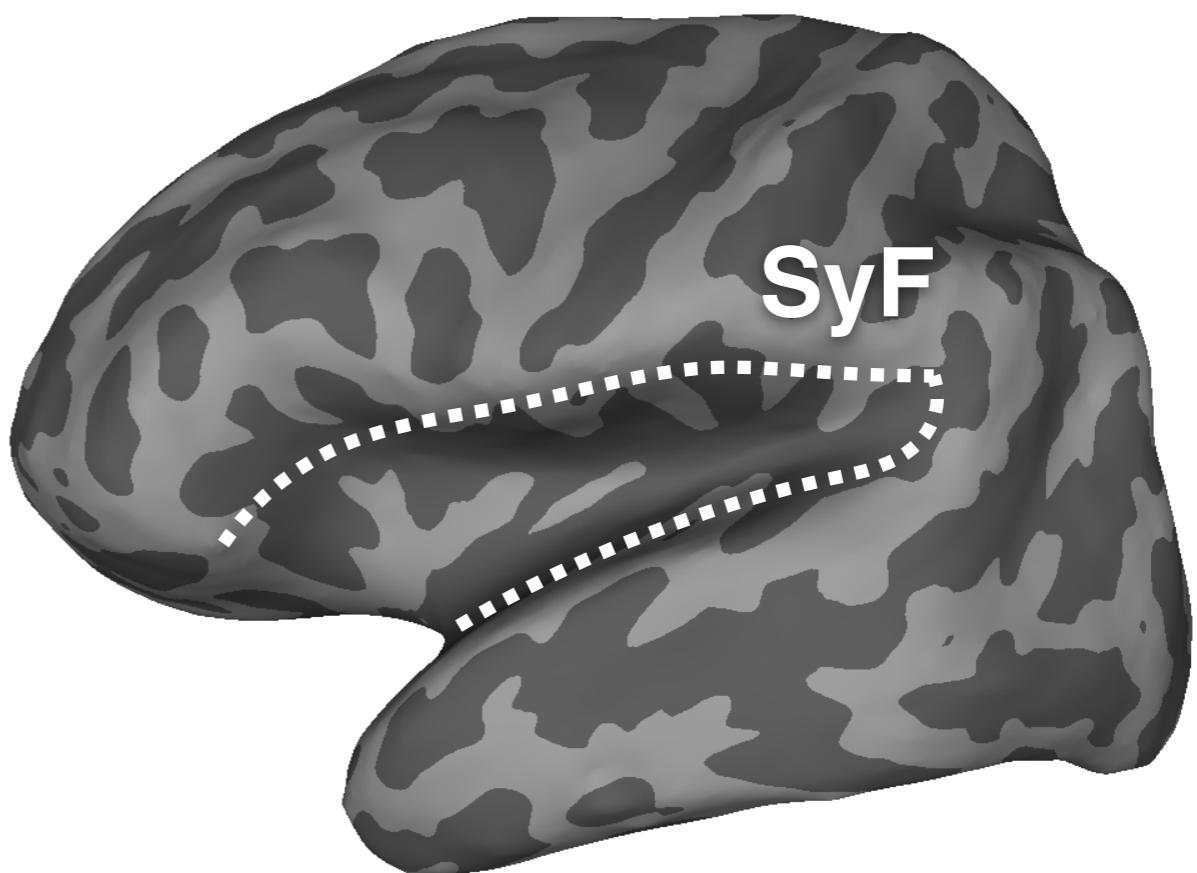
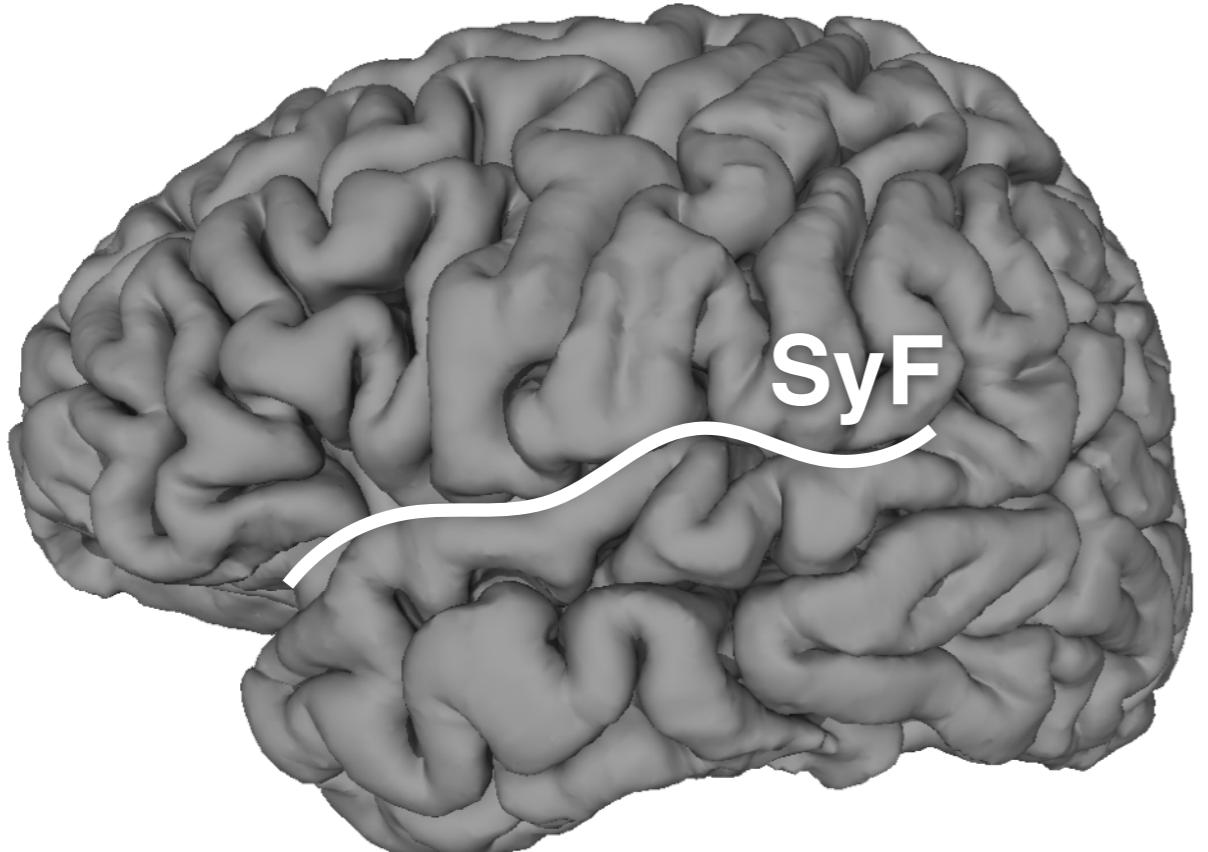
**SYLVIAN FISSURE
(LATERAL SULCUS)**

SYLVIAN FISSURE

- * Major sulcus that separates the **temporal lobe** from the **parietal** and **frontal lobes**
- * So big that lots of things are *hiding inside it:*
 - * the insula
 - * frontal operculum & parietal operculum
 - * superior temporal plane



Abbreviation: SyF

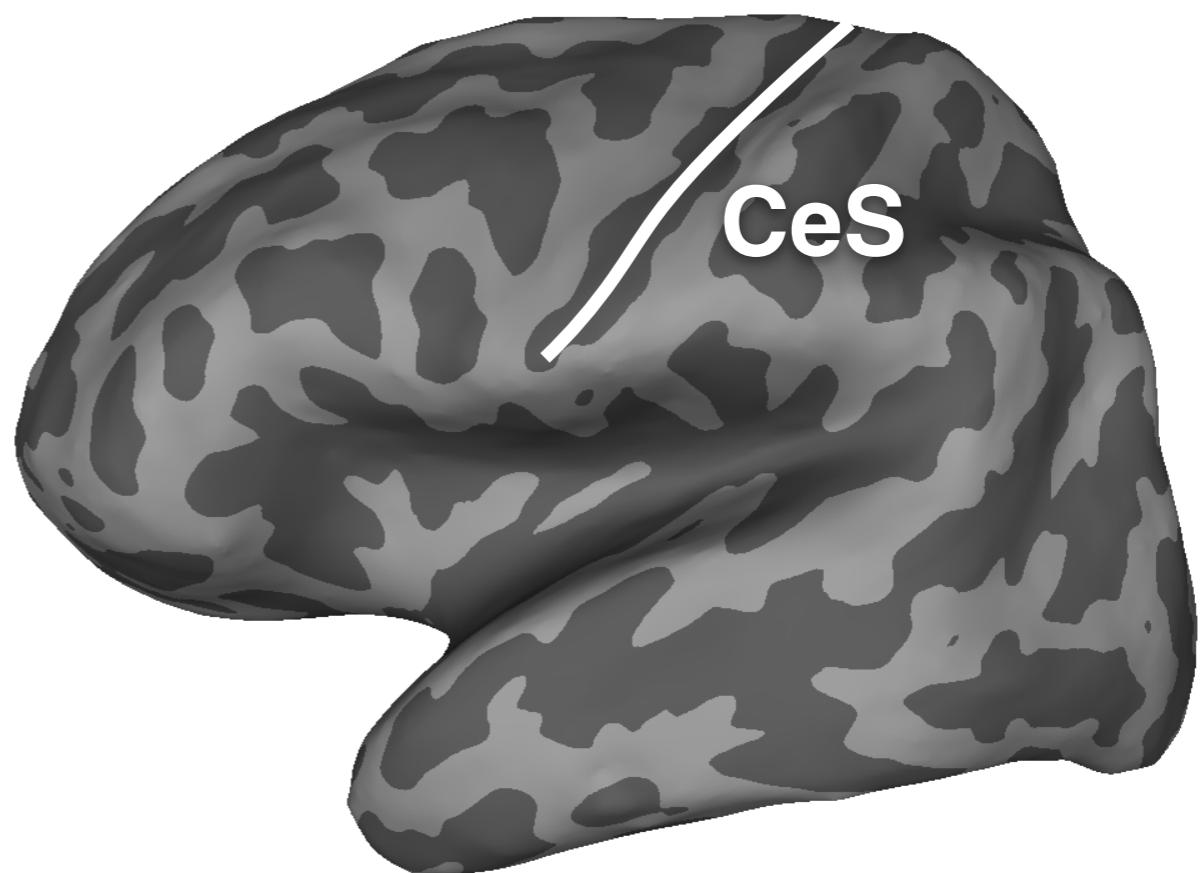
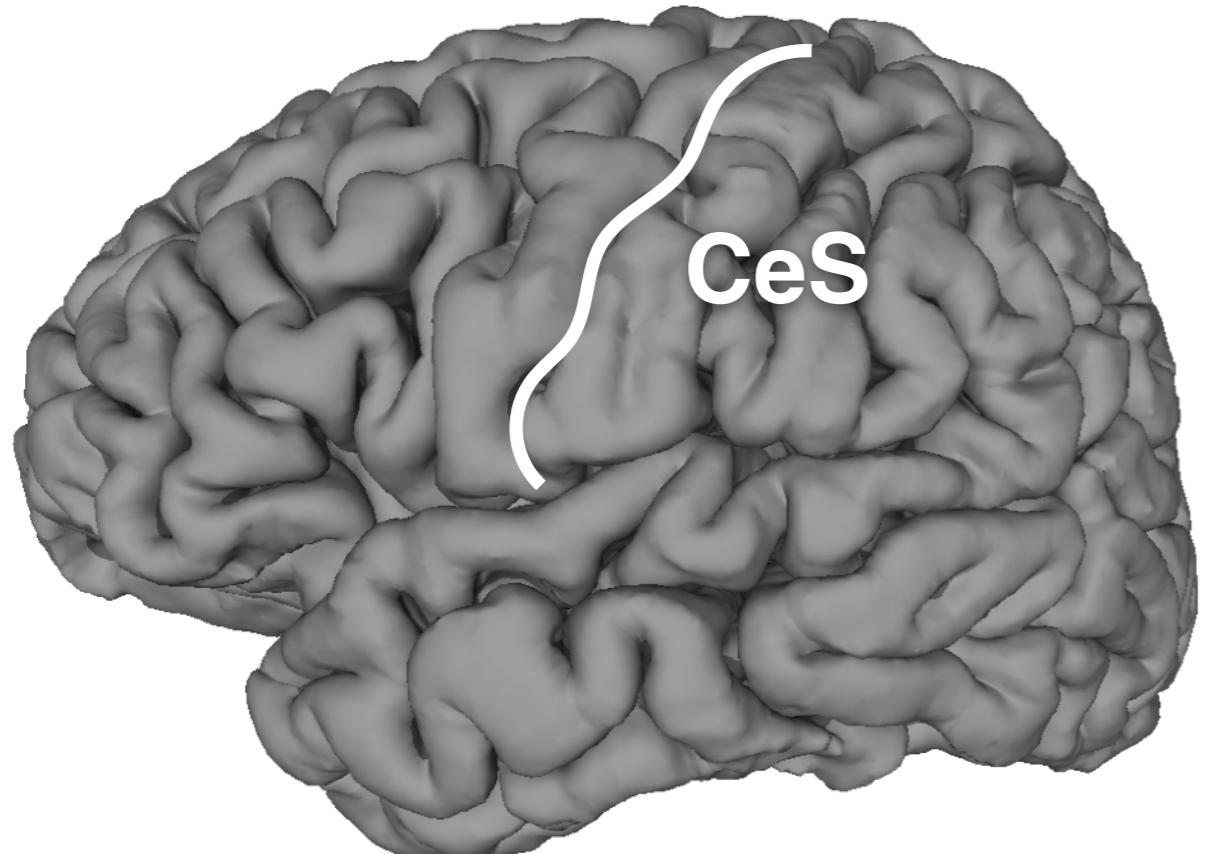


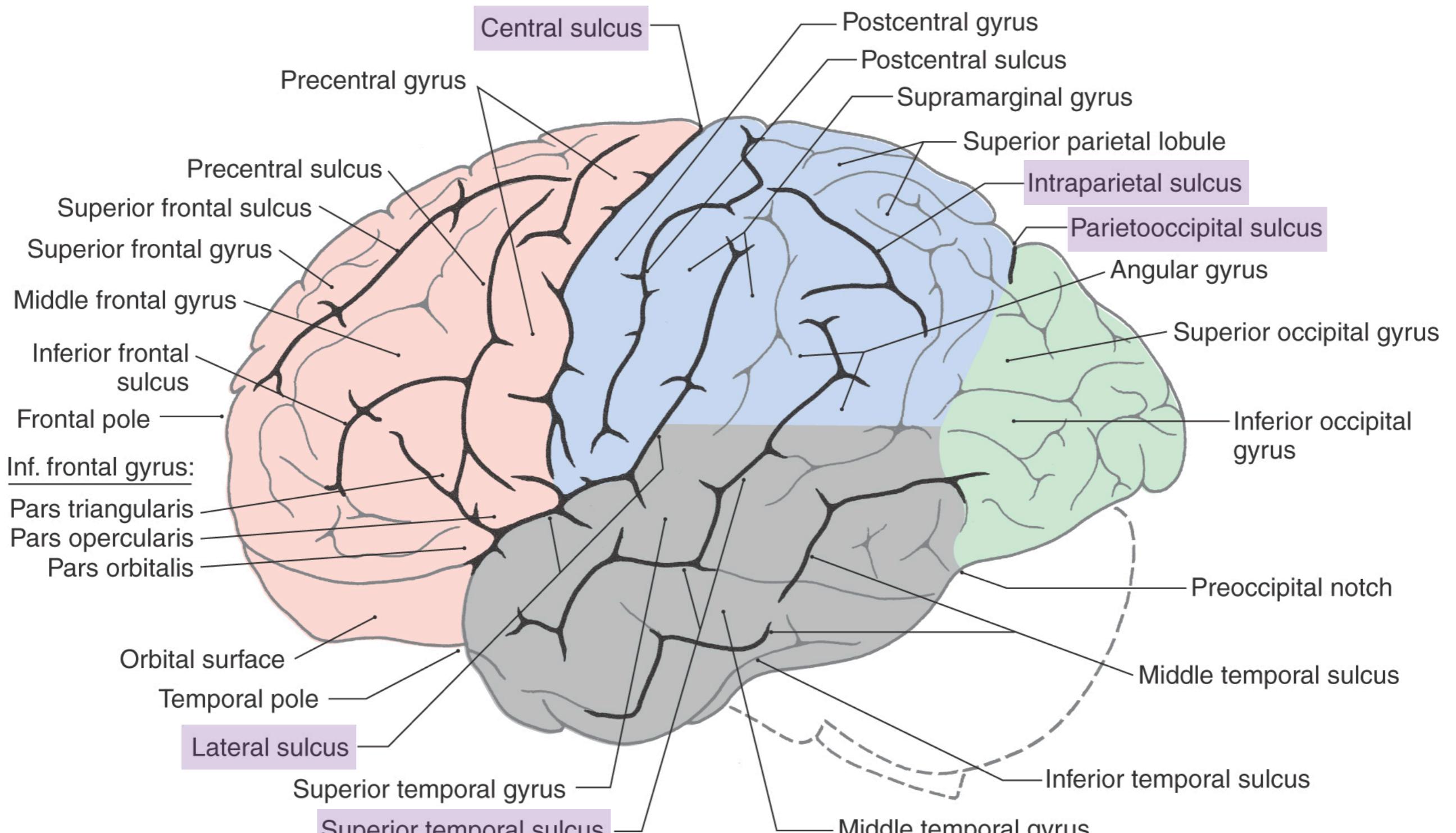
**CENTRAL
SULCUS**

CENTRAL SULCUS

- * Major sulcus that separates the **frontal lobe** from the **parietal lobe**
- * The site of **primary motor** & **primary somatosensory** cortex (the homonculus)

Abbreviation: CeS



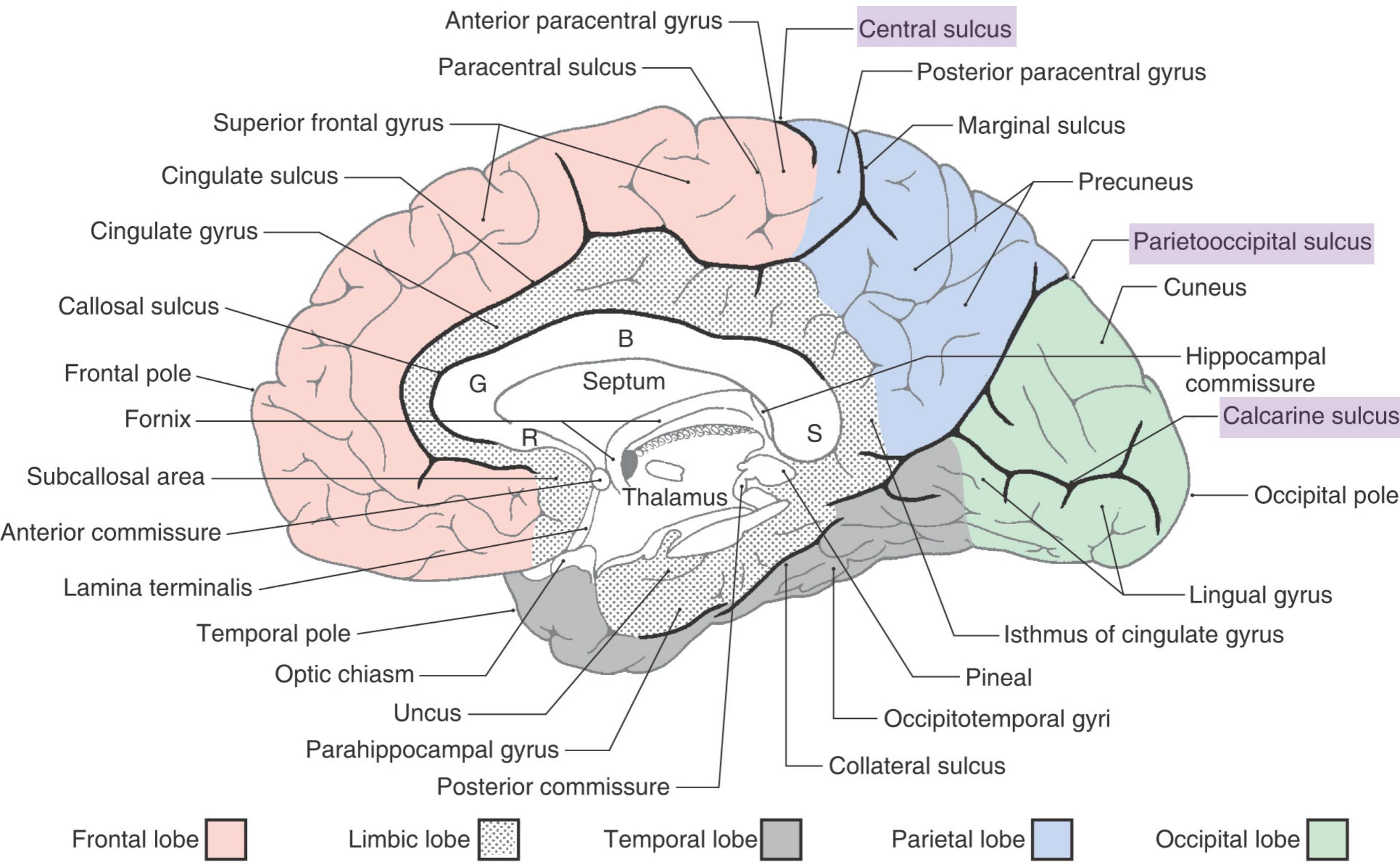


Frontal lobe

Parietal lobe

Temporal lobe

Occipital lobe



INFOGRAPHIC

- * Your first **infographic** homework (covering the stuff from this lecture) will be assigned next week
- * I'll also be posting a short video demo shortly

READING

- * **For next week**, please read the short story "The Case of the Colorblind Painter" by Oliver Sacks (find on Canvas)

UNTIL

NEXT

TIME