Title: Behavioral and arousal states control neurovascular-coupling

**Figure outline**

Panels 1-3 data setup, sleep scoring information, and phenomena of increased blood flow during sleep

Panel 4 – Ravi’s simulations showing how the increased diameter during sleep shows extracellular clearance/flow. This could honestly be a separate (small) paper if that makes more sense.

Panels 5,6 – bilateral hemisphere correlations and how they change during sleep

Panels 6/7 – transition to single hemisphere and neurovascular coupling

Panel 8 - summary

**Figure panel 1**

* IOS schematic – with single hemisphere window
* Single trial example – Awake/NREM/REM sleep with all parameters. Show pupil images
* Example Hypnogram – some sort of sleep duration statistics

**Figure panel 2**

* 2P schematic – with single hemisphere window
* Single trial example – Awake/NREM/REM sleep with all parameters
* Example Hypnogram – some sort of sleep duration statistics

**Figure Panel 3**

* Behavioral transitions (IOS)
* Average CBV/Flow/Vessel Dilations during each behavior (Whisk,Rest,NREM,REM,Iso)
* Average Heart rate per behavior - IOS only (Whisk,Rest,NREM,REM,Iso)

**Figure panel 4**

* Ravi’s simulation showing how individual vessels (ideally the one from the example figure) drives solute clearance

**Figure panel 5**

* Bilateral IOS Coherence – HbT and LFP bands
* IOS Power Spectra – HbT and LFP bands

**Figure panel 6**

* Bilateral IOS Pearson’s correlation’s – Hbt and Gamma
* IOS Single hemisphere cross-correlations – LFP and MUA with HbT

**Figure panel 7**

* HRF kernels, predictions, single trial example

**Figure panel 8**

* Summary figure for bilateral correlations (“U” curves”)
* Summary figure for NVC - ?