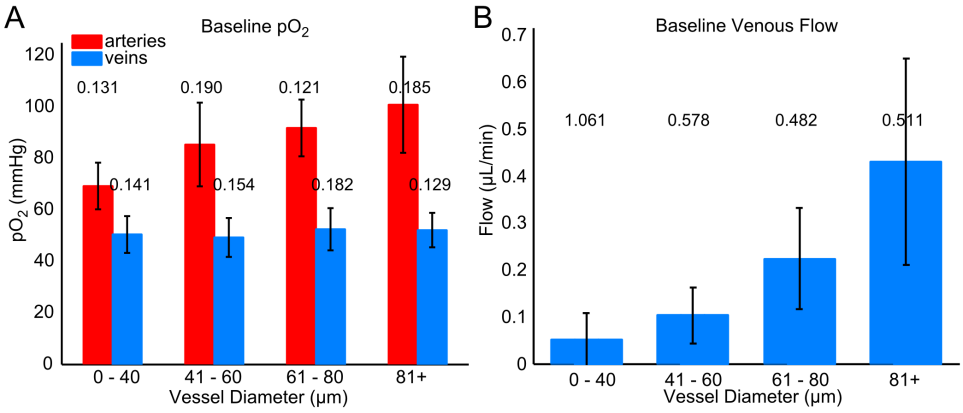
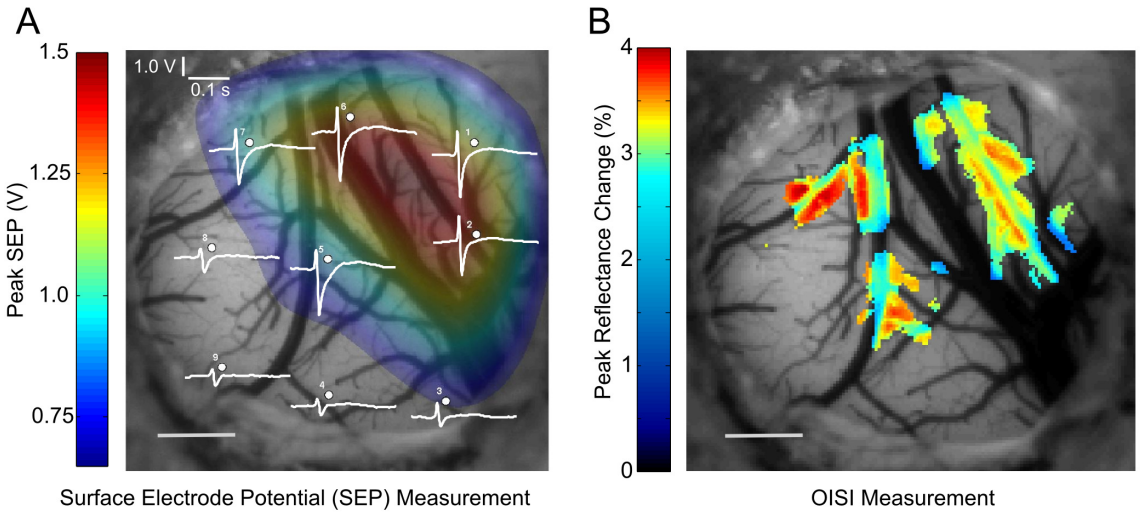
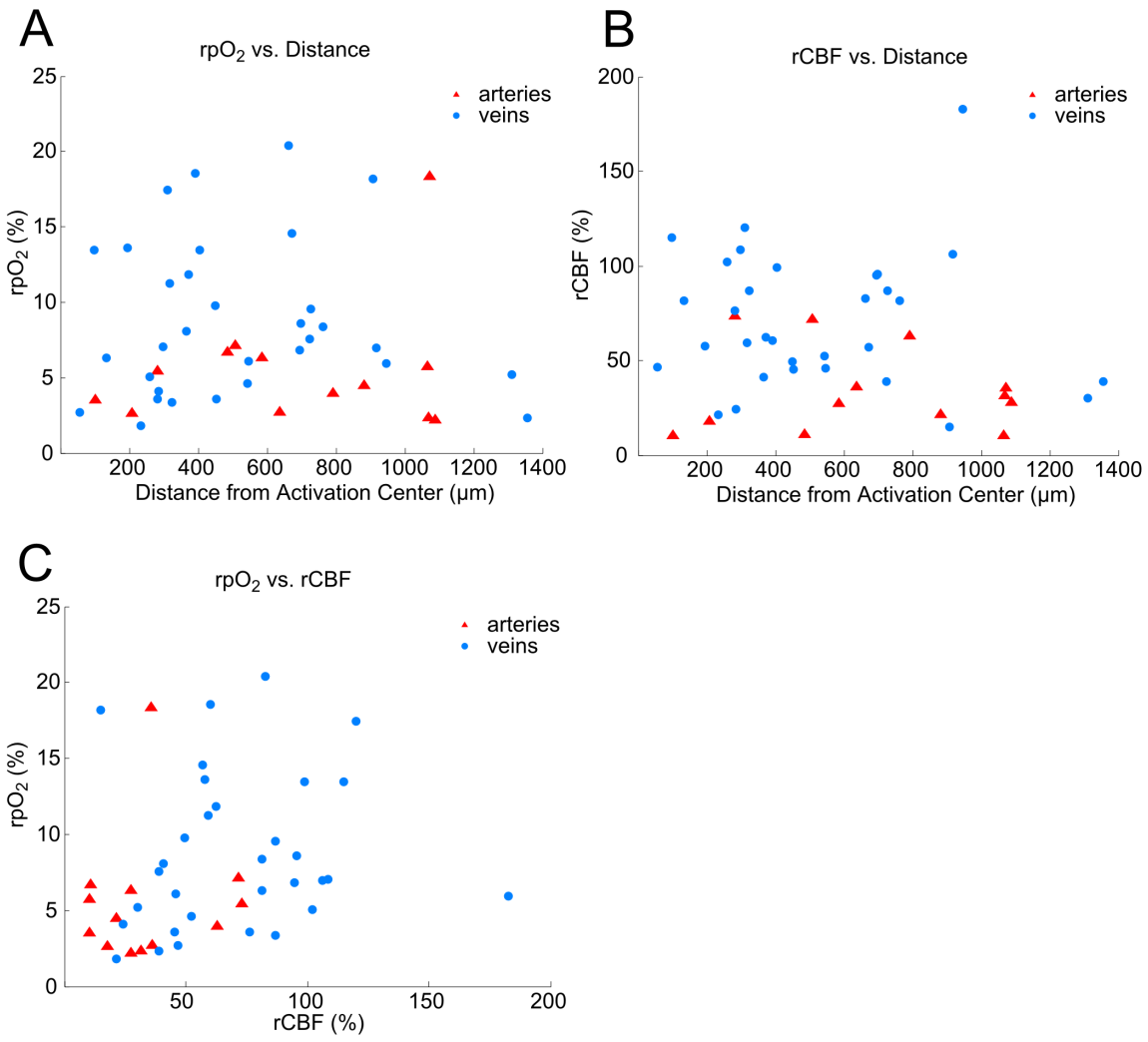
<u>Supplementary Information:</u> Yaseen et al, "Microvascular oxygen tension and flow measurements in rodent cerebral cortex during baseline conditions and functional activation," JCBFM



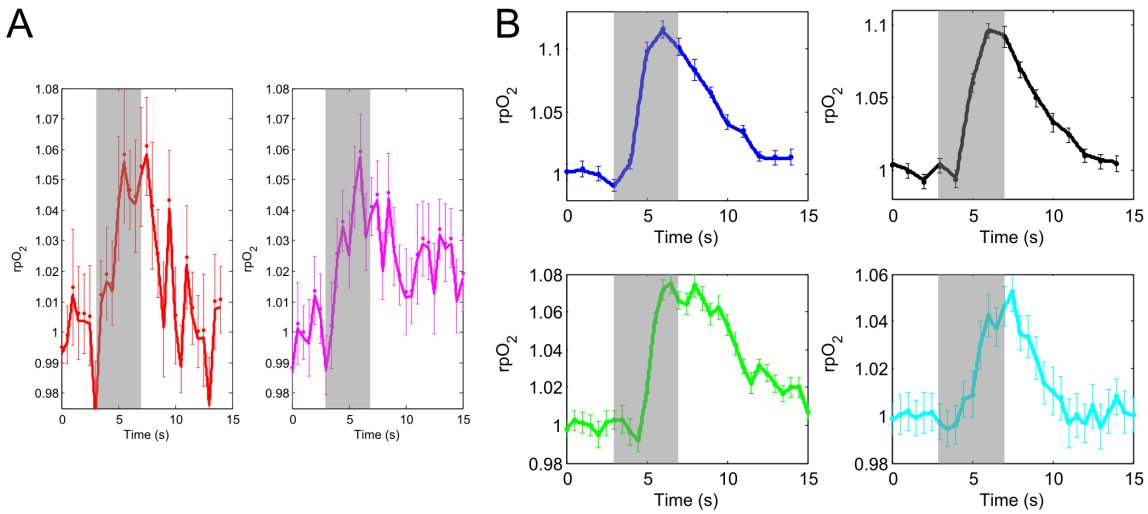
Supplementary Figure 1: (a) Baseline pO2 in arteries and veins, grouped by vessel diameter, with corresponding coefficients of variation (CV) reported (b) Baseline flow in ascending venules, grouped by vessel diameter, with corresponding coefficients of variation



Supplementary Figure 2: (a) Stimulation-induced electrical activity map in rat somatosensory cortex. White circles represent locations at which surface electrode potentials (SEP) were recorded. Traces of block-averaged SEPs are provided for each recording location. (b) corresponding stimulation-induced hemodynamic activity map, collected with OISI Scale bars: 500 μm.



Supplementary Figure 3. a) Peak rpO2 versus corresponding vessel distance from activation center in response to somatosensory activation b) Peak rCBF versus corresponding vessel distance from activation center in response to somatosensory activation c)Peak rpO2 versus corresponding peak rCBF in arterioles (red triangles) and venules (blue circles) in response to somatosensory activation



Supplementary Figure 4. Select rpO2 profiles in cortical (a) arterioles and (b) venules presumably showing the elusive "initial dip" upon the onset of functional stimulation. The shaded region depicts the time during which a 4-second stimulus train of 300 μs, ~2 mA electrical pulses was delivered to the forepaw at 3 Hz. The small amplitude, measurement variability, and temporal resolution prevent conclusive identification of the initial dip.