**Supplemental Figure Legends**

**Supplemental Figure 1.** A histogram of the blood vessel radii segmented from the heart showing a wide distribution of mean vessel sizes from the voxel limit of 5.9 µm to 72.9 µm.

**Supplemental Figure 2.** A comparison of the measurements of the three vessels indicated in Figure 3.

**Supplemental Figure 3.** An orthogonal view of the circle of willis fully visualizes the major arteries. The arteries and landmarks labeled: (I) Anterior Cerebral, (II) Middle Cerebral, (III) Circle of Willis, (IV) Posterior Cerebral, (V) Superior Cerebellar, (VI) Basilar.

**Supplemental Figure 4.** A histogram of the blood vessel radii segmented from the brain. The segmentation technique captured a wide range of mean blood vessel radii from the resolution limit up to 62.7 µm.

**Supplemental Figure 1**

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**Supplemental Figure 2**

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**Supplemental Figure 3**

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**Supplemental Figure 4**

