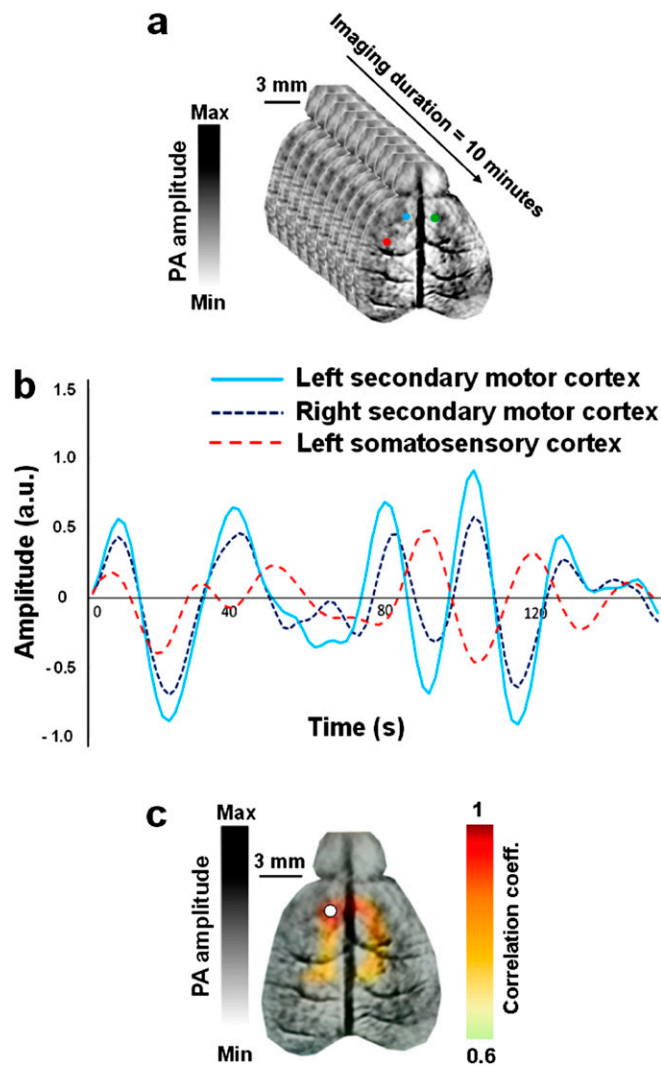
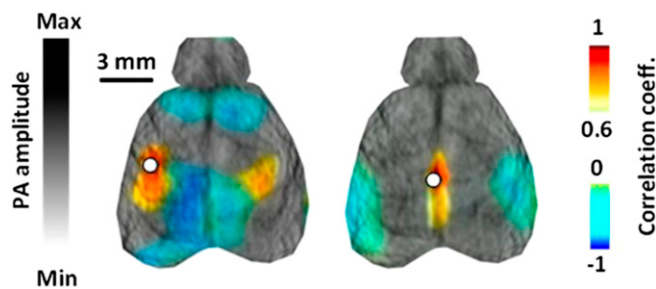


# Supporting Information

Nasirivanaki et al. 10.1073/pnas.1311868111



**Fig. S1.** Seed-based analysis of resting-state functional connectivity. (A) Temporal functional connectivity photoacoustic tomography (fcPAT) vascular images collected within 10 min. The three seeds are placed in the left motor cortex (solid line), right motor cortex (short dashed line), and left somatosensory cortex (long dashed line). (B) A portion of the time traces of the three seeds shown in A. (C) Correlation map generated using the left motor cortex seed.



**Fig. S2.** Correlation and anticorrelation maps showing four main functional regions on the mouse brain. White circles, seed regions.



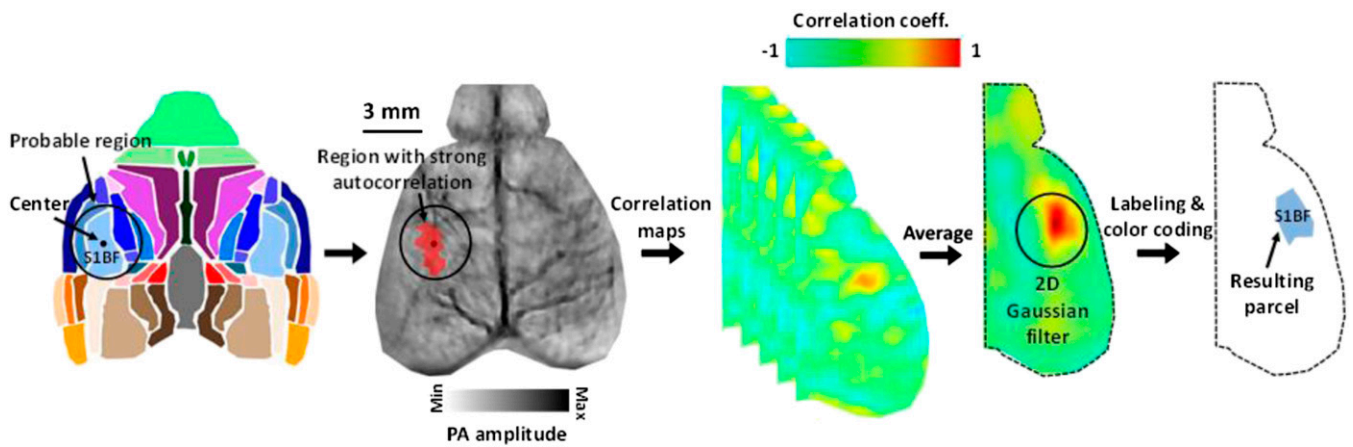


Fig. S5. Parcellation procedure, demonstrated here for S1BF (primary somatosensory–barrel field).

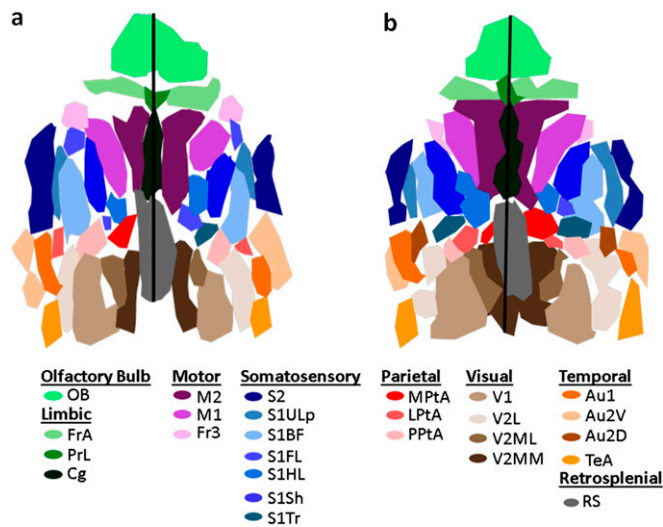


Fig. S6. Parcellation results. (A and B) Parcellation maps of two live mice from Fig. S3. The regions and their subregions indicated in the atlas are as follows: Au1, primary auditory cortex; Au2D, secondary auditory–dorsal area; Au2V, secondary auditory–ventral area; Cg, cingulate; Fr3, frontal cortex area 3; FrA, frontal association; LPtA, lateral parietal association; M1, primary motor cortex; M2, secondary motor cortex; MPTA, medial parietal association; OB, olfactory bulb; PPtA, posterior parietal association; PrL, prelimbic; RS, retrosplenial area; S1ULp, primary somatosensory–upper lips region; S1BF, primary somatosensory–barrel field; S1FL, primary somatosensory–forelimb region; S1HL, primary somatosensory cortex–hindlimb region; S1Sh, primary somatosensory–shoulder region; S1Tr, primary somatosensory cortex–trunk region; S2, secondary somatosensory; TeA, temporal association cortex; V1, primary visual cortex; V2MM, secondary visual cortex–mediomedial region; V2ML, secondary visual cortex–mediolateral region; and V2L, secondary visual cortex–lateral region.

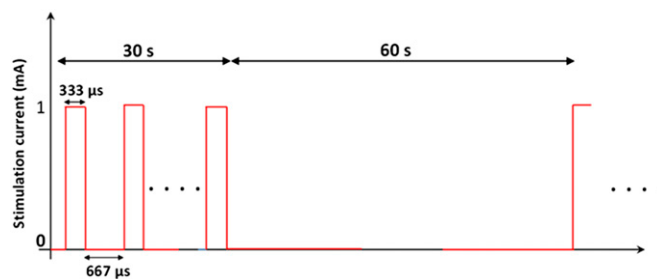
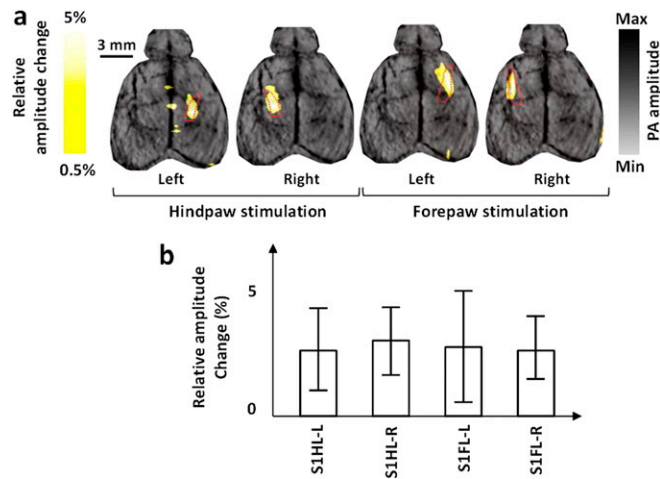
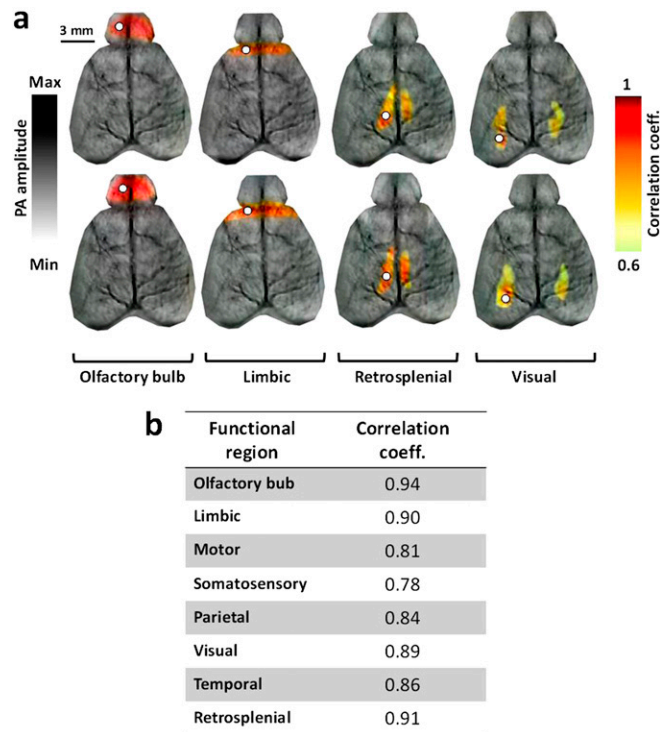


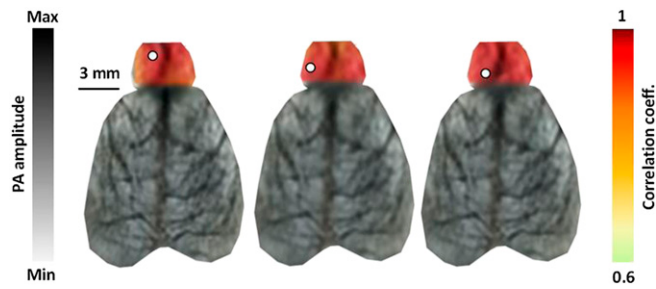
Fig. S7. Protocol for electrical paw stimulation.



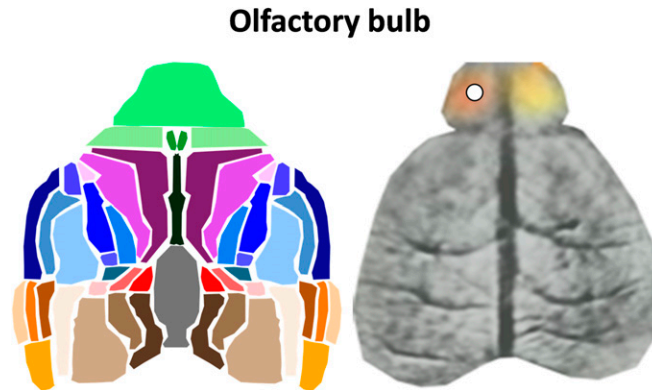
**Fig. S8.** (A) Functional photoacoustic images of cerebral hemodynamic changes in response to fore- and hind-paw electric stimulation. (B) Diagram showing the average and SD of the variations in the functional regions according to the atlas ( $P < 0.0001$ ). The areas encircled by the dotted lines show the corresponding functional regions from the atlas.



**Fig. S9.** Comparison of the correlation maps from two consecutive experiments. (A, Upper) From the first 5 min. (A, Lower) From the second 5 min. (B) Correlation coefficient between the connectivity maps corresponding to the same seed. White circles, seed regions.



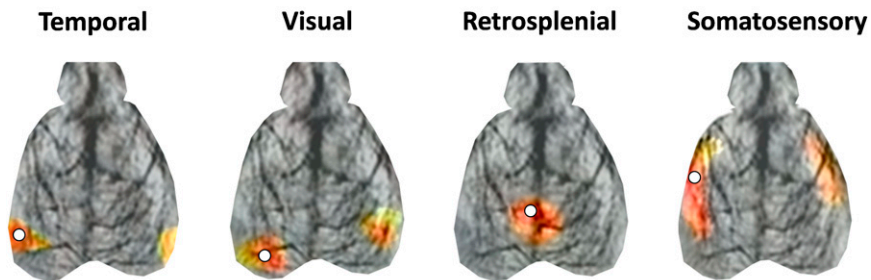
**Fig. S10.** Correlation maps corresponding to the seed placement in different locations of the olfactory bulb.



**Movie S1.** Comparison of the Paxinos mouse brain atlas (*Left*) and the correlation map (*Right*) acquired noninvasively using fcPAT. White circle, seed region.

[Movie S1](#)

## Hyperoxia



**Movie S2.** Correlation maps of four functional regions (temporal, visual, retrosplenial, and somatosensory regions) acquired noninvasively using fcPAT in a live mouse during hyperoxia and hypoxia. White circles, seed regions.

[Movie S2](#)