The Heavily Connected Brain

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COVER
Fiber pathways of a female human brain mapped noninvasively with diffusion magnetic resonance imaging. The image shows an axial view from above (front is at top). Major pathways of the human frontal lobes, and their organization as orthogonal grids, are shown here (cerebral association pathways, vertical; transverse pathways, horizontal). For a description of cortical networks, see the special section beginning on page 577.

Image: Van J. Wedeen, Aapo Nummenmaa, Ruopeng Wang, and Lawrence L. Wald/Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, with support of NIH Human Connectome Project and NSF
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591 Circadian Clock NAD+ Cycle Drives Mitochondrial Oxidative Metabolism in Mice
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The coenzyme nicotinamide adenine dinucleotide mechanistically links the circadian clock to control of energy production by mitochondria.
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Molecular engineering of a childhood virus surface protein significantly improves protective responses in mice and macaques.
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Long-term measurements show the systematic evolution of the radiation pattern of one of the youngest neutron stars known.

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The unit of heat carried by electrons is measured using noise thermometry and found to be consistent with predictions.
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614 One-Dimensional Electrical Contact to a Two-Dimensional Material
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The molecular basis for how a plant heterodimeric receptor responds to bacterial infection signals is elucidated.

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A warm spring favors early flowering by invoking less transcriptional repression by a floral repressor complex.
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632 Mosaic Copy Number Variation in Human Neurons
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Single-cell genomics reveals that individual adult human neurons acquire diverse individual genotypes.
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637 Resident Neural Stem Cells Restrict Tissue Damage and Neuronal Loss After Spinal Cord Injury in Mice
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Glia1 scarring helps to maintain the integrity of the injured spinal cord in mice.
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