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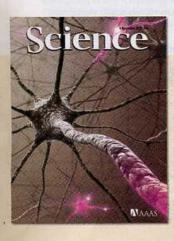
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COVER

Conceptual illustration of information, in the form of electrical impulses, flowing through neuronal processes within the brain. Fundamental aspects of neuroscience are based in the study of neurons and how they interact. An Editorial (p. 567) and several Reviews (pp. 618 and 623), Reports (pp. 690, 693, and 697), and Perspectives (pp. 606 and 608) highlight current and future approaches in neuroscience research.

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Structural Dynamics of a Catalytic Monolayer Probed by Ultrafast 2D IR Vibrational Echoes

D. E. Rosenfeld et al.

A method to track fast vibrational motion in solution has been extended to catalytically important solid/liquid interfaces.

A Fluoride-Derived Electrophilic Late-Stage Fluorination Reagent for PET Imaging E. Lee et al.

> A palladium compound facilitates rapid incorporation of radioactive fluoride into prospective tracers for medical imaging.

- | Ionic Liquid-Mediated Selective Conversion of CO2 to CO at Low Overpotentials B. A. Rosen et al. Carbon dioxide reduction reactions. a key step in creating fuels from this
- 645 Wireless Solar Water Splitting Using Silicon-Based Semiconductors and **Earth-Abundant Catalysts** S. Y. Reece et al. An artificial water-splitting system was built using abundant materials and sunlight.

gas, can be achieved in an ionic liquid.

- Hot Carrier-Assisted Intrinsic Photoresponse in Graphene N. M. Gabor et al. Photoexcited electrons in graphene remain thermally excited because they cannot transfer this energy to lattice vibrations. >> Perspective p. 610
- 652 The Pace of Shifting Climate in Marine and Terrestrial Ecosystems M. T. Burrows et al. Ecologically relevant measures of

contemporary global climate change can predict species distributions and vulnerabilities.

>> Perspective p. 613; Report p. 660

Atmospheric Blocking and Atlantic Multidecadal Ocean Variability

S. Häkkinen et al.

Changing ocean circulation patterns and sea surface temperatures affect atmospheric flow in the North Atlantic region.

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660 The Influence of Late Quaternary Climate-Change Velocity on Species Endemism B. Sandel et al.

Regions with low glacial-interglacial climate-change velocity were essential refuges for many small-ranged species. >> Perspective p. 613; Report p. 652

Long-Term Change in the Nitrogen Cycle of Tropical Forests

P. Hietz et al.

The ratio of stable isotopes in leaves and wood reveals an increase in nitrogen availability in Panamanian and Thai tropical forests.

Neural Mechanisms for the Coordination of Duet Singing in Wrens

E. S. Fortune et al.

The brains of duetting wrens encode the entire song and not just the contribution of the individual.

Drosophila Microbiome Modulates Host Developmental and Metabolic Homeostasis via Insulin Signaling S. C. Shin et al.

Successful development of fruit flies depends on a gut bacterium that interacts with its host's insulin-signaling pathway.

N-Terminal Acetylation Acts as an Avidity Enhancer Within an Interconnected **Multiprotein Complex**

D. C. Scott et al.

Acetylation of an amino-terminal methionine is important for mediating specific protein-protein interactions.

mTORC1 Senses Lysosomal Amino Acids 678 Through an Inside-Out Mechanism That Requires the Vacuolar H+-ATPase R. Zoncu et al.

> Cellular sensing of amino acids occurs at the lysosome and is mediated by the vacuolar proton pump.

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RNAP II CTD Phosphorylated on Threonine-4 Is Required for Histone mRNA 3' End Processing

1.-P. Hsin et al.

Phosphorylation of a single conserved amino acid in higher eukaryotes plays a specific role in processing histone messenger RNA genes.

Drosophila CENH3 Is Sufficient 686 for Centromere Formation

M. J. Mendiburo et al.

A specific histone is sufficient for the formation of a functional and heritable centromere in the fruit fly.

Exercise and Genetic Rescue of SCA1 via the Transcriptional Repressor Capicua

1. D. Fryer et al.

Gentle exercise can ameliorate disease severity in a mouse model of a fatal neurodegenerative disease.

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Bidirectional Control of Social Hierarchy by Synaptic Efficacy in Medial Prefrontal Cortex

F. Wang et al.

Manipulation of the neural circuit determining social status allows subordinate mice to move up the hierarchy and dominant mice to go down.

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Social Network Size Affects Neural Circuits 697 in Macagues

1. Sallet et al.

Executing social cognition successfully requires more brain power.

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