



COVER

The influence of human society on the future of the world's forests and the role of forests in the global carbon cycle are discussed in the special section beginning on page 1435.

Image: Micha Pawlitzki/Zefa/Corbis

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Forests in Flux

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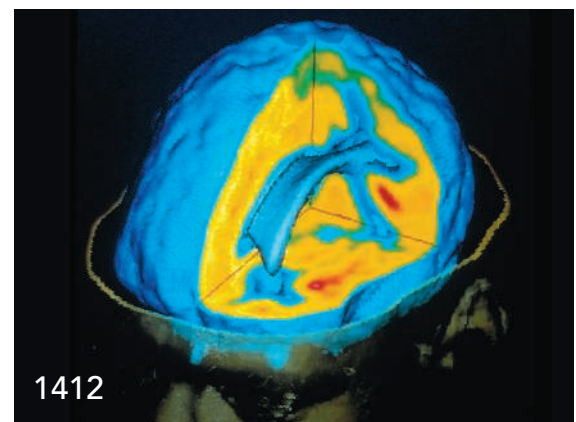
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www.sciencexpress.org

NEUROSCIENCE

The Spread of Ras Activity Triggered by Activation of a Single Dendritic Spine

C. D. Harvey, R. Yasuda, H. Zhong, K. Svoboda

When strengthened, individual synapses on dendritic spines contain an activated small regulatory protein that spreads to nearby spines, possibly altering their sensitivity.

10.1126/science.1159675

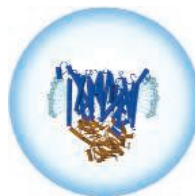
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Entangled Images from Four-Wave Mixing

V. Boyer, A. M. Marino, R. C. Pooser, P. D. Lett

Passing light through a warm cloud of rubidium atoms creates quantum mechanically entangled twin images.

10.1126/science.1158275



BIOCHEMISTRY

Micelles Protect Membrane Complexes from Solution to Vacuum

N. P. Barrera, N. Di Bartolo, P. J. Booth, C. V. Robinson

Gas-phase lipid micelles protect a large complex of membrane proteins, allowing its subunit composition and ligand binding to be assessed by mass spectrometry.

10.1126/science.1159292

ASTRONOMY

Supernova Shock Breakout from a Red Supergiant

K. Schawinski et al.

A burst of ultraviolet light reveals the initial expansion of a star leading to a supernova and identifies the star as a red supergiant.

10.1126/science.1160456

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An in Vivo Map of the Yeast Protein Interactome 1465

K. Tarassov et al.

A method that identifies pairs of proteins that are 8 nanometers apart produces a map of interacting proteins in living yeast, finding known and previously unknown networks.

BIOCHEMISTRY

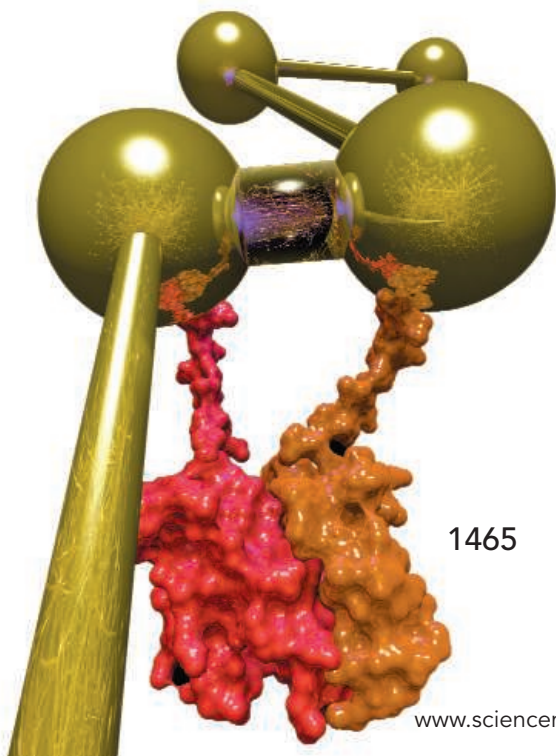
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from an RDC-Derived Ubiquitin Ensemble in Solution

O. F. Lange et al.

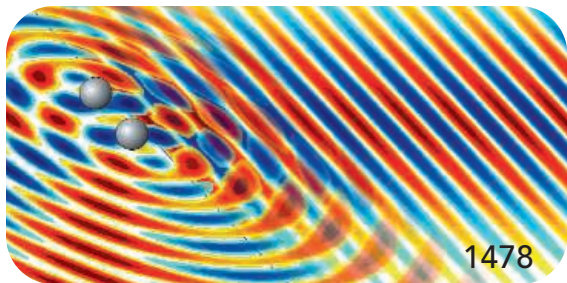
In solution, ubiquitin assumes all conformations seen in crystal structures of its complexes, indicating that it binds by conformational selection rather than induced fit. >> Perspective p. 1429

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- Regulation of Hepatic Lipogenesis by the Transcription Factor XBP1** 1492

A.-H. Lee, E. F. Scapa, D. E. Cohen, L. H. Glimcher

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- The Rag GTPases Bind Raptor and Mediate Amino Acid Signaling to mTORC1** 1496

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D. Montoya, M. A. Zavala, M. A. Rodríguez, D. W. Purves

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>> *Science Podcast*

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- VelB/VeA/LaeA Complex Coordinates Light Signal with Fungal Development and Secondary Metabolism** 1504

Ö. Bayram et al.

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>> *Perspective p. 1430*

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- Activation of the Cellular DNA Damage Response in the Absence of DNA Lesions** 1507

E. Soutoglou and T. Misteli

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- Transfer of Learning After Updating Training Mediated by the Striatum** 1510

E. Dahlin, A. S. Neely, A. Larsson, L. Bäckman, L. Nyberg

Individuals who become better at a letter recognition test through practice also improve at a different task, even without practice, when both tasks utilize the same brain region.

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www.sciencereers.org

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A Self-Made Climber

Measuring the Impact of Invasive Plants

An Adventurous Physicist

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Coral dissolve in acidic waters.

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A Volcanic Preview of Acidic Oceans

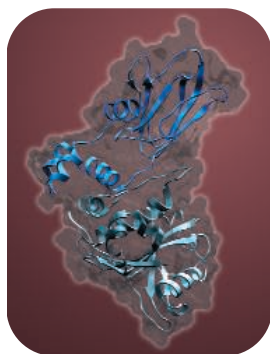
Natural experiment predicts which species will win and which will lose from rising carbon dioxide levels.

Say Goodbye to Wimpy Paper

New nanopaper tougher than cast iron.

To Stop a Seizure

An acidic brain blocks convulsions in mice—but only if they have the right ion channel.



A VHL and elongin B and C complex.

SCIENCE SIGNALING

www.sciencesignaling.org

THE SIGNAL TRANSDUCTION KNOWLEDGE ENVIRONMENT

PERSPECTIVE: Intracellular Signaling by Akt—Bound to Be Specific

T. F. Franke

Multiple interacting proteins modulate the activity of the serine/threonine kinase Akt.

PERSPECTIVE: pVHL—A Multipurpose Adaptor Protein

I. J. Frew and W. Krek

The von Hippel-Lindau tumor suppressor controls transcription-dependent and -independent cellular processes.

PODCAST

E. M. Adler and A. M. VanHook

Microvesicles carrying an oncogenic form of the epidermal growth factor receptor provide a mechanism for lateral spread of the malignant phenotype.

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Find out what ASC, ChIP, and SNS mean in the world of cell signaling.



SPECIAL CONTENT

Forests in Flux

SCIENCE CAREERS

www.sciencecareers.org/career_development

FREE CAREER RESOURCES FOR SCIENTISTS

Science Careers Podcast: An Interview With Catherine Cardelús

K. Travis

The young rainforest ecologist talks about what it's like to work in the forest canopy.

SCIENCE ONLINE FEATURE

VIDEO: Forests in Flux

An accompaniment to this week's special section on the future of forests in light of climate change and human activity.

SCIENCE PODCAST

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