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Human cells infected with the protozoan parasite *Toxoplasma gondii* visualized by scanning electron microscopy. In the foreground are parasites (yellow-green) rupturing out of a dying host cell (blue); in the background is an intact host cell containing a large parasite-filled vacuole. See page 530.

*Image: Sasha Meshinchi, Michael Robinson, Bjorn Kafsack, and Vern Carruthers*

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G. Etiope and P. Ciccioli
Natural gas seepage contributes far more methane, ethane, and propane to the atmosphere than formerly realized.

Language Phylogenies Reveal Expansion Pulses and Pauses in Pacific Settlement
R. D. Gray et al.
Geographical distribution of Austronesian languages reveals the rate and direction of migrations from Taiwan 5200 years ago.
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A useful tool for quantum information processing transmits entangled photons only when they have the same polarization.
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S. Olmschenk et al.
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Femtosecond XANES Study of the Light-Induced Spin Crossover Dynamics in an Iron(II) Complex
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X-ray absorption spectroscopy resolves the dynamics of spin-state interconversions, which take place in less than a picosecond, in a well-studied class of iron compounds.

Complementary Active Sites Cause Size-Selective Reactivity of Aluminum Cluster Anions with Water
P. J. Roach et al.
Water dissociates at similar active sites on anionic aluminum clusters that have different sizes and electronic structure.

Brown Clouds over South Asia: Biomass or Fossil Fuel Combustion?
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Secondary Replicative Function of CD8+ T Cells That Had Developed an Effector Phenotype
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Killer T cells that developed during a primary antiviral response can become memory T cells in secondary infections.
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A structural motif in the protein complexin may act as a switch during membrane fusion.
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The Sphingolipid Transporter Spns2 Functions in Migration of Zebrafish Myocardial Precursors
A. Kawahara et al.
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The Peopling of the Pacific from a Bacterial Perspective
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The geographical distribution of strains of a specific human pathogen helps to define patterns of colonization out of Taiwan.
>> Perspective p. 467

Rapid Membrane Disruption by a Perforin-Like Protein Facilitates Parasite Exit from Host Cells
B. F. C. Kafsack et al.
The human and animal parasite that causes toxoplasmosis escapes from host cells by using a perforin-like protein to make holes in the intracellular vacuole in which it resides.
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Coherence Factors in a High-Tc Cuprate Probed by Quasi-Particle Scattering off Vortices
T. Hanaguri et al.
The momentum-dependent coherence factors in a high-temperature superconductor are revealed by introducing magnetic vortices.
10.1126/science.1166138

The Formation of Warm Dense Matter: Experimental Evidence for Electronic Bond Hardening in Gold
R. Ernstorfer et al.
Injecting energy into a gold film can create a transient excited state with stronger bonds prior to melting.
10.1126/science.1162697

Analysis of the Drosophila Segmentation Network Identifies a JNK Pathway Factor Overexpressed in Kidney Cancer
J. Liu et al.
A developmental marker in fruit flies also acts as a marker of renal cell cancer in humans.
10.1126/science.1157669

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M. Hammelrud et al.
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10.1126/science.1165527

PROTOCOL: Genome to Kinome—Species-Specific Peptide Arrays for Kinome Analysis
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Marrying bioinformatics and phosphorylation assays enables the empirical analysis of kinomes of multiple species.

CONNECTIONS MAP: Neuro2A Differentiation by Gαo Pathway
A. Ma’ayan et al.
Neurite outgrowth can be stimulated by G protein–coupled receptors that signal through Gαo and Gαi proteins.

GLOSSARY
Find out what IRAP, Spred, and DOPA mean in the world of cell signaling.

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Work-related stress is an insidious health hazard.

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C. Rey
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E. Pain
A program launched by the French government allows Ph.D. students to sell their skills to nonacademic clients.

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