

COVER

Optical or electrical pulses can rapidly locate and manipulate the spin of a single electron in a quantum dot or of a nitrogen vacancy in diamond. Such techniques represent progress toward solid-state quantum computing (see pages 349 and 352).

Image: Peter Allen and Jesse Berezovsky

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SCIENCE EXPRESS

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CLIMATE CHANGE

Seasonal Speedup Along the Western Flank of the Greenland Ice Sheet
I. Joughin et al.

Measurements of ice motion from Greenland show that summer melt water accelerates ice sheet flow by 50 to 100% overall but has less effect in the faster outlet glaciers.

>> *News story p. 301; Science Express Report by S. B. Das et al.*

10.1126/science.1153288

CLIMATE CHANGE

Fracture Propagation to the Base of the Greenland Ice Sheet During Supraglacial Lake Drainage

S. B. Das et al.

A large lake on the surface of the Greenland Ice Sheet drained out through and along the base of the Ice Sheet within 2 hours, revealing an efficient basal hydrological system.

>> *News story p. 301; Science Express Report by I. Joughin et al.*

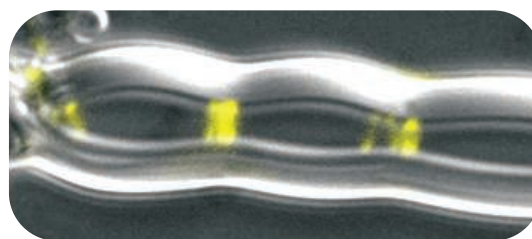
10.1126/science.1153360

PERSPECTIVE: Marine Calcifiers in a High-CO₂ Ocean

V. J. Fabry

>> *Research Article p. 336*

10.1126/science.1157130



CELL BIOLOGY

Reconstitution of Contractile FtsZ Rings in Liposomes

M. Osawa, D. E. Anderson, H. P. Erickson

A tubulin homolog from prokaryotes can, without other proteins, assemble into rings around liposomes and constrict, suggesting a primordial cell division mechanism.

10.1126/science.1154520

PHYSICS

Quasi-Particle Properties from Tunneling in the $\nu = 5/2$ Fractional Quantum Hall State

I. P. Radu, J. B. Miller, C. M. Marcus, M. A. Kastner, L. N. Pfeiffer, K. W. West

Tunneling measurements between the conduction channels in the fractional quantum Hall effect confirm that the charge is quantized in units of $1/4$ of an electron charge.

10.1126/science.1157560

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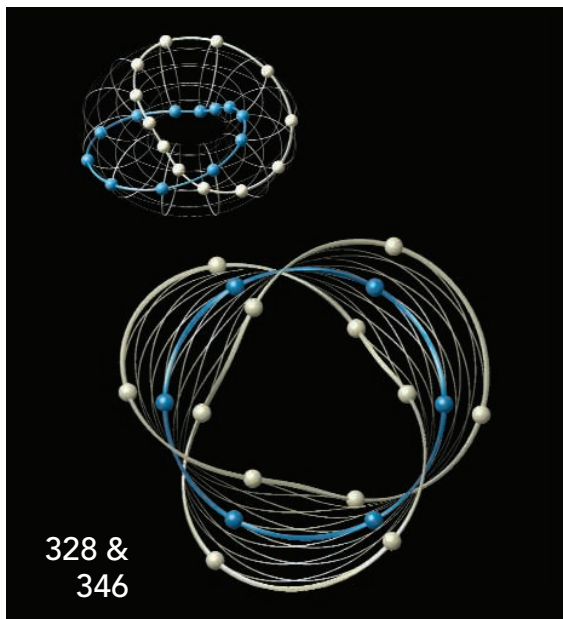
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>> *Science Express Perspective by V. J. Fabry*

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The Global Circulation of Seasonal Influenza A (H3N2) Viruses

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C. A. Russell et al.

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>> *News story p. 310*

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>> *Perspective p. 328*

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J. Berezovsky et al.

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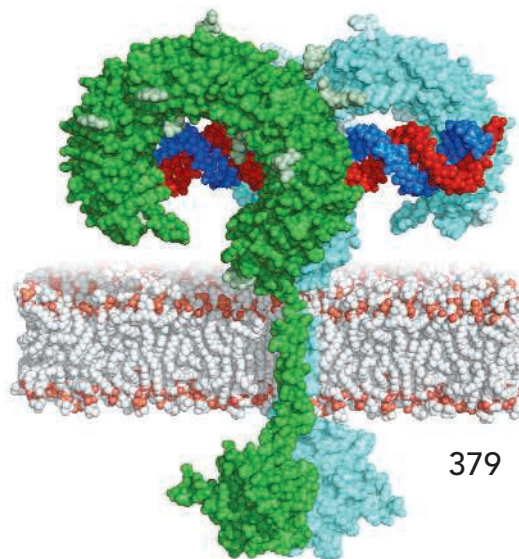
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Financial trading can wreak havoc on physiology.

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Bad Day for the Dow? Blame Hormones

Market activity is reflected in financial traders' testosterone and cortisol levels.

Case Closed for Free Will?

The unconscious brain makes choices several seconds before the conscious mind knows about it.



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SCIENCE CAREERS

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CAREER RESOURCES FOR SCIENTISTS

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Fellowships are available that let scientists contribute to local and national policies. >> *Editorial p. 289*

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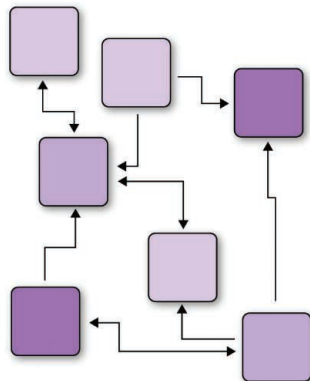
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Modeling cell signaling.

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