



## COVER

Detail from *The Last Automat III* by Max Ferguson. Sluggish operation of the reward circuitry in the brain may lead individuals to eat calorie-dense foods (such as pie) to try to compensate, placing them at risk for obesity. See page 449.

*Image: The Last Automat III, 2003 (oil on panel); Max Ferguson/Bridgeman Art Library/Getty Images*

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## SPECIAL SECTION

# Cell Signaling

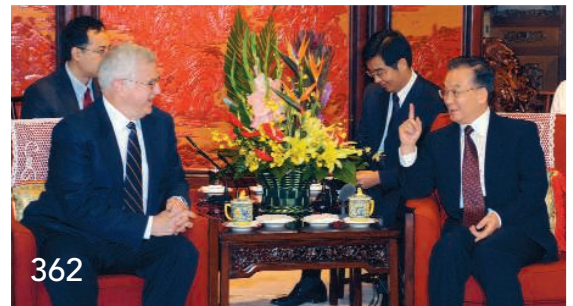
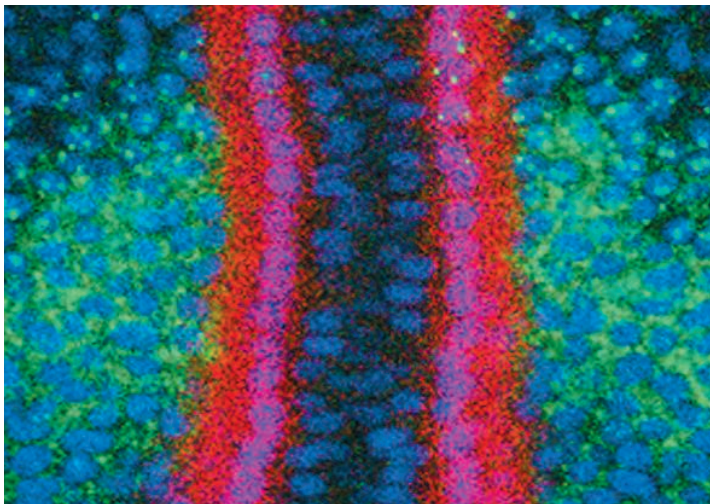
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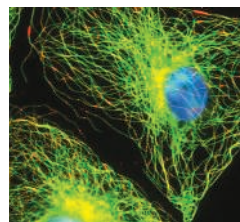
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## SCIENCE EXPRESS

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### BIOCHEMISTRY

#### Structure and Molecular Mechanism of a Nucleobase-Cation-Symport-1 Family Transporter

S. Weyand et al.

The structure of a membrane transporter in an open state suggests that in- and out-facing cavities reciprocally open and close coordinated by two transmembrane segments.

10.1126/science.1164440

### ASTRONOMY

#### The Fermi Gamma-Ray Space Telescope Discovers the Pulsar in the Young Galactic Supernova Remnant CTA 1

G. Kanbach et al.

The Fermi Space Telescope has detected a gamma-ray pulsar associated with a young supernova remnant, implying that such stars may be unidentified gamma-ray sources.

10.1126/science.1165572

### CELL BIOLOGY

#### Detection of GTP-Tubulin Conformation in Vivo Reveals a Role for GTP Remnants in Microtubule Rescues

A. Dimitrov, M. Quesnoit, S. Moutel, I. Cantaloube, C. Poüs, F. Perez

GTP-bound tubulin is found at microtubule ends in living cells and also within microtubules, where it may promote repolymerization and avert microtubule collapse.

10.1126/science.1165401

### ASTRONOMY

#### Observation of Pulsed $\gamma$ -Rays Above 25 GeV from the Crab Pulsar with MAGIC

The MAGIC Collaboration

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10.1126/science.1164718

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*E. Pain*

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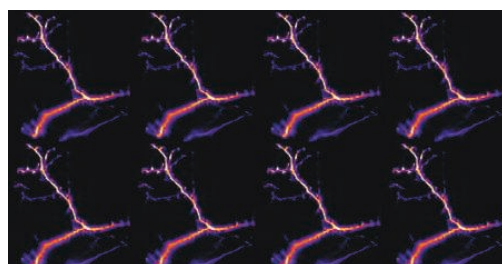
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A microbiologist, a mechanical engineer, and a chemist tell *Science Careers* how they ended up in synthetic biology.

### Science Careers Podcast

*K. Travis*

Hear three scientists talk about their career paths and the future of synthetic biology research.



VILIP1 interacts with P2X2 receptors in dendrites.

## SCIENCE SIGNALING

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THE SIGNAL TRANSDUCTION KNOWLEDGE ENVIRONMENT

### RESEARCH ARTICLE: Regulation of P2X2 Receptors by the Neuronal Calcium Sensor VILIP1

*S. Chaumont, V. Compan, E. Toulme, E. Richler, G. D. Housley, F. Rassendren, B. S. Khakh*

Optics and electrophysiology reveal the dynamics of an ATP-gated ion channel signaling complex.

### RESEARCH ARTICLE: BDNF Selectively Regulates GABA<sub>A</sub> Receptor Transcription by Activation of the JAK/STAT Pathway

*I. V. Lund, Y. Hu, Y. H. Raol, R. S. Benham, R. Faris, S. J. Russek, A. R. Brooks-Kayal*

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### PERSPECTIVE: Acetylation of MKP-1 and the Control of Inflammation

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Toll-like receptor signaling is inhibited by acetylated MKP-1, a mitogen-activated protein kinase phosphatase.

### PREVIEW

Get a sneak peek at articles coming up in the 21 October issue related to this week's *Science* special issue on cell signaling.

>> [Cell Signaling section p. 389 and www.sciencemag.org/cellsignaling08/](#)

## SCIENCE PODCAST

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