COVER
Laser-surveyed topography of the elevation in a Pennsylvania landscape, showing evidence of sediment-filled early American millponds along a stream valley. Terraces around the stream channel descend stepwise from upstream to downstream (dark purple, light purple, pink), each associated with a dam. The deeper stream incision into the two downstream terraces is due to more complete dam breaching. See page 299.

Image: U.S. Geological Survey (LIDAR data and preliminary processing); Michael Rahnis (image analysis and generation)

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Cool It The Skeptical Environmentalist’s Guide to Global Warming B. Lomborg, reviewed by W. F. Ruddiman (U.S. and U.K. editions)

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**MOLECULAR BIOLOGY**
A Shared Docking Motif in TRF1 and TRF2 Used for Differential Recruitment of Telomeric Proteins
Y. Chen et al.
Two similar members of the protein complex that protects the free ends of chromosomes have distinct binding sites for other complex members and accessory proteins.

10.1126/science.1151804

**CELL BIOLOGY**
Differential Regulation of Dynein and Kinesin Motor Proteins by Tau
R. Dixit, J. L. Ross, Y. E. Goldman, E. L. F. Holzbaur
The motor proteins dynein and kinesin both encounter the protein tau as they move along the microtubules; the former reverses direction, whereas the latter detaches.

10.1126/science.1152993

**MEDICINE**
Clonal Integration of a Polyomavirus in Human Merkel Cell Carcinoma
H. Feng, M. Shuda, Y. Chang, P. S. Moore
A rare, but highly aggressive, form of human skin cancer may be caused by a previously uncharacterized human polyomavirus.

10.1126/science.1152586

**GEOPHYSICS**
Rogue Mantle Helium and Neon
F. Albarède
Anomalously high ratios of $^3$He to $^4$He in the recycled basalts under ocean islands may result from helium diffusing in from more pristine, primitive mantle.

10.1126/science.1150060

**PLANT SCIENCE**
Arabidopsis CLV3 Peptide Directly Binds CLV1 Ectodomain
M. Ogawa, H. Shinohara, Y. Sakagami, Y. Matsubayashi
Peptides that maintain the stem cells in the shoot apical meristem of Arabidopsis act by binding to the extracellular portion of a receptor-like kinase.

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**PHYSICS**
Time-Resolved Observation and Control of Supercritical Interactions with Ultracold Atoms in Optical Lattices
S. Trotzky et al.
Ultracold atoms trapped at sites of optical lattices are used to investigate the superexchange interaction between neighboring spins.

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**NEUROSCIENCE**
Lhx2 Selector Activity Specifies Cortical Identity and Suppresses Hippocampal Organizer Fate
V. S. Mangale et al.
The brain’s cortex begins as a one-cell-thick sheet of stem cells, whose ultimate identity is specified by a gene that suppresses noncortical cell fates.

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**ASTRONOMY**
Million-Degree Plasma Pervading the Extended Orion Nebula
M. Güdel et al.
Million-degree gas fills the Orion Nebula, implying that shock-heated gas from stellar outflows is common in our Galaxy.

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Elementary Structural Motifs in a Random Network of Cytosine Adsorbed on a Gold(111) Surface
R. Otero et al.
Upon cooling, cytosine molecules on a gold surface form a disordered network based on the assembly of three elementary structural units, which may have analogies with glasses.

The Subduction Zone Flow Field from Seismic Anisotropy: A Global View
M. D. Long and P. G. Silver
Identification of the fastest seismic-wave propagation speed in subduction zones reveals that trench migration induces flow in the mantle above and beneath the subducting slab.

A Localized Negative Genetic Correlation Constrains Microevolution of Coat Color in Wild Sheep
J. Gratten et al.
Although the fitness of wild sheep increases with size, large, dark sheep are becoming rarer because color is genetically linked to genes that decrease fitness.

Coastal Ecosystem–Based Management with Nonlinear Ecological Functions and Values
E. B. Barbier et al.
Taking into account the nonlinear relation between preserved habitat area and wave attenuation facilitates integrated management of coastal conservation and development.

β-Catenin Defines Head Versus Tail Identity During Planarian Regeneration and Homeostasis
K. A. Gurley, J. C. Rink, A. S. Alvarado
Smed-βcatenin-1 is required for anteroposterior Blastaema Polarity in Planarian Regeneration
C. P. Petersen and P. W. Reddien
After the head or tail of a planarian is severed, the signal intensity of a prominent developmental signaling pathway controls whether a new head or tail regenerates.

Natural Genetic Variation in Lycopene Epsilon Cyclase Tapped for Maize Biofortification
C. E. Harjes et al.
Identification of the gene that controls vitamin A levels in maize will allow production of varieties that can improve global health without using transgenic methods.
A change of heart.

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**PERSPECTIVE: The Endoplasmic Reticulum Takes Center Stage in Cell Cycle Regulation**
P. Fearon and O. Cohen-Fix
The ER appears to play a key role in controlling the spatial localization of proteins involved in the cell cycle.

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Analyze your gene of interest in a range of organisms using the tools available at the UCSC Genome Browser; in Bioinformatics Resources.

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**MiSciNet: Following the Image**
A. Sasso
Ahna Skop built a career from things others pass over, from cellular detritus to shy high school students.

**Mind Matters: Leaving a Lab Gracefully**
I. S. Levine
When it’s time to leave the lab, the key is to make sure the end isn’t bitter.

**Tooling Up: Dealing With Men Who Have a Problem With Women**
D. Jensen
You’re likely to encounter men who have never learned how to relate to strong, competent women.

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