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Three-dimensional fluorescence images of cellular structures in fixed cells are realized at 20- to 30-nm lateral and 50-nm axial resolution, without scanning.
10.1126/science.1153529

Direct Observation of Hierarchical Folding in Single Riboswitch Aptamers
W. J. Greenleaf et al.
Optical trapping reveals that activation by adenine stabilizes the weakest helix in a riboswitch, after which secondary and tertiary structures are formed sequentially.
10.1126/science.1151298

In humans, an inherited condition with small brain size and near-normal intelligence is caused by mutations that disrupt chromosome separation during cell division.
10.1126/science.1151174

Warming and cooling in different parts of the North Atlantic since 1950 reflect variable atmospheric circulation, complicating our understanding of anthropogenic changes.
10.1126/science.1146436

Genes used preferentially by female pea aphids are under stronger selection than those used by males, probably because females mainly reproduce asexually.

An apparent violation of Haldane’s rule (in hybrid organisms the heterogametic sex tends to be sterile) in frogs can be explained by postulating that males have evolved faster.

Data on deep water formation in the North Atlantic indicate that the sudden draining of a huge glacial lake south of Hudson Bay led to dramatic cooling 8200 years ago.

Comparison of the moss genome sequence with those of other plants reveals hallmarks of colonization of land, including genes to manage terrestrial stresses such as dehydration.

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B. Shen, L. Dong, S. Xiao, M. Kowalewski
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T. Schlegel and S. Schuster
Archerfish shoot their insect prey with a stream of water and then use sensory information and just a few neurons to calculate how to retrieve their food.

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Heterochromatin and RNAi Are Required to Establish CENP-A Chromatin at Centromeres
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Formation of the centromere, the specialized region by which chromosomes are pulled apart during cell division, requires the presence of RNAi-induced heterochromatin.

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Assembly Mechanism of the Contractile Ring for Cytokinesis by Fission Yeast
D. Vavylonis et al.
The contractile ring of cell division is powered by myosin motors on the cell equator, which capture and pull actin filaments growing randomly from the equator.

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Ongoing in Vivo Experience Triggers Synaptic Metaplasticity in the Neocortex
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Editor's Summary

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