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Mechanism of Self-Sterility in a Hermaphroditic Chordate
Y. Harada et al.
The sea squirt prevents self-fertilization by using a tightly linked genetic locus to encode a sperm-egg receptor-ligand pair, a system similar to that used by flowering plants.
10.1126/science.1152488

MATERIALS SCIENCE
High-Thermoelectric Performance of Nanostructured Bismuth Antimony Telluride Bulk Alloys
B. Poudel et al.
Milling a thermoelectric alloy, which produces electricity from a thermal gradient, into a nanopowder, then pressing it into a bulk form, greatly improves its performance.
10.1126/science.1156446

TECHNICAL COMMENT ABSTRACTS

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B. P. Boudreau et al.
full text at www.sciencemag.org/cgi/content/full/319/5870/1616b
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NEUROSCIENCE
Pattern Separation in the Human Hippocampal CA3 and Dentate Gyrus
A. Bakker, C. B. Kirwan, M. Miller, C. E. L. Stark
High-resolution imaging of the human brain reveals that, as seen in rodents, recognition of small differences in similar memories requires a particular region of the hippocampus. >> Perspective p. 1623

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S. Ishiwata, Y. Taguchi, H. Murakawa, Y. Onose, Y. Tokura
The polarization of electrons in a complex iron oxide magnet can be manipulated using only a weak magnetic field, not a strong one as required in other systems.

MATERIALS SCIENCE
Observation of Giant Diffusivity Along Dislocation Cores
M. Legros, G. Dehm, E. Arzt, T. J. Balk
Observations on the movements of silicon atoms in a thin film of aluminum show that dislocations can align and act like a channel or pipe to greatly accelerate diffusion.
Comparison of femora from an early, ostensibly human fossil to those from apes, humans, and hominins confirms that Orrorin tugenensis was a basal bipedal hominin. 

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**Orrorin tugenensis** Femoral Morphology and the Evolution of Hominin Bipedalism

B. G. Richmond and W. L. Jungers

Comparison of femora from an early, ostensibly human fossil to those from apes, humans, and hominins confirms that *Orrorin tugenensis* was a basal bipedal hominin. >> News story p. 1599

**CELL BIOLOGY**

Activation of FOXO1 by Cdk1 in Cycling Cells and Postmitotic Neurons

Z. Yuan et al.

A cell cycle–associated kinase phosphorylates the transcription factor FOXO1, which activates transcription of a regulator of mitosis.

**MEDICINE**

**TDP-43 Mutations in Familial and Sporadic Amyotrophic Lateral Sclerosis**

J. Sreedharan et al.

Mutations in a gene that encodes a protein that aggregates in several neurodegenerative disorders are linked to amyotrophic lateral sclerosis (Lou Gehrig’s disease).

**MICROBIOLOGY**

**A Nitric Oxide–Inducible Lactate Dehydrogenase Enables *Staphylococcus aureus* to Resist Innate Immunity**

A. R. Richardson, S. J. Libby, F. C. Fang

*Staphylococcus aureus* is a particularly successful pathogen because it responds to antimicrobial defenses of its host by producing more lactate to maintain its redox balance.

**NEUROSCIENCE**

**Drosophila Egg-Laying Site Selection as a System to Study Simple Decision-Making Processes**

C. Yang, P. Belawat, E. Hafen, L. Y. Jan, Y.-N. Jan

Experiments show how flies make complex decisions when laying eggs, choosing surfaces containing sucrose only when other options are not available.

**PSYCHOLOGY**

**Spending Money on Others Promotes Happiness**

E. W. Dunn, L. B. Aknin, M. I. Norton

A survey, a study of windfall spending, and a lab experiment all indicate that spending money on others results in more happiness than does spending money on oneself.
Four new sections of Science Signaling bring new resources to the cell signaling community.

The 2007 meeting of the Signal Transduction Society focused on results obtained using state-of-the-art imaging methodologies.

Two cultured cell systems provide insight into intracellular and extracellular events involved in cellular differentiation and senescence.

Posttranslational lipid modification of RhoA is necessary for T cell migration into the central nervous system during neuroinflammation.

History of prior antigenic experience controls T cell activation.

The cultural shift from academia to nonacademic workplaces requires careful self-assessment.

The Harvard economist thanks postdocs for their skilled and diligent servitude.

Download the 14 March Science Podcast to hear about the evolution of human bipedalism, subliminal influence on behavior, and for farewell thoughts from senior news correspondent Jean Marx.