

## SPECIAL SECTION HIV/AIDS

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Sergey Nenov gives thanks at a church in Odessa, Ukraine. HIV, tuberculosis, and injecting drug use are tightly linked in Eastern Europe, the only region in the world with a growing HIV/AIDS epidemic. Nenov is one of the few people with access to treatment for both infections and opiate dependency. See the special section on HIV/AIDS beginning on page 159 and at [www.sciencemag.org/special/aids2010/](http://www.sciencemag.org/special/aids2010/).

*Photo: Malcolm Linton*

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## RESEARCH ARTICLE

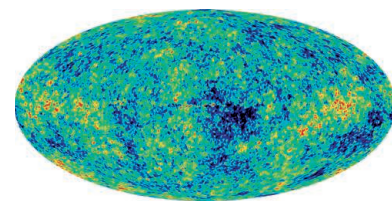
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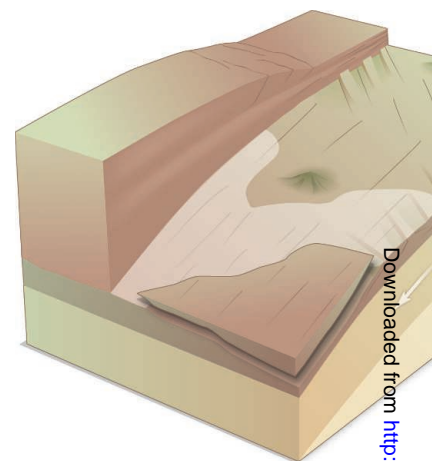
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- 207 Contrasting Décollement and Prism Properties over the Sumatra 2004–2005 Earthquake Rupture Boundary  
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- 210 Seismic Evidence for Active Underplating Below the Megathrust Earthquake Zone in Japan  
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The cleavage status of the egg protein ZP2 regulates the recognition of sperm and prevents adherence of sperm to the two-cell embryo.
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Relative rates of nucleotide substitution between host and parasite cytochrome b set the molecular clock for malaria.
- 229 An Autophagy-Enhancing Drug Promotes Degradation of Mutant  $\alpha_1$ -Antitrypsin Z and Reduces Hepatic Fibrosis  
*T. Hidvegi et al.*  
A mouse model of a human liver disease can be treated using a drug known to be well tolerated.  
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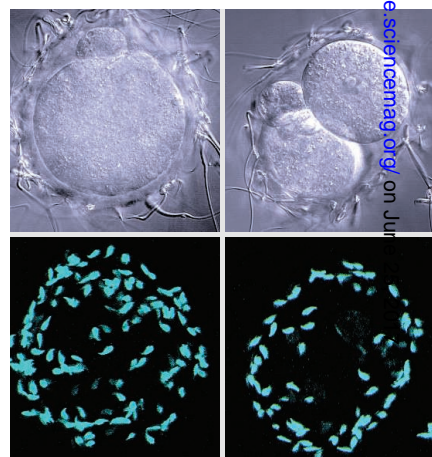
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## SCIENCEONLINE

## SCIENCEEXPRESS

[www.sciencexpres.org](http://www.sciencexpres.org)

**Global Convergence in the Temperature Sensitivity of Respiration at Ecosystem Level**

*M. D. Mahecha et al.*

The long-standing discrepancy between modeled and empirical measures of ecosystem temperature sensitivity is resolved.

10.1126/science.1189587

**Terrestrial Gross Carbon Dioxide Uptake: Global Distribution and Covariation with Climate**

*C. Beer et al.*

A combination of data and models provides an estimate of how much photosynthesis by all the world's plants occurs each year.

10.1126/science.1184984

**Structural Basis for Broad and Potent Neutralization of HIV-1 by Antibody VRC01**

*T. Zhou et al.*

10.1126/science.1192819

**Rational Design of Envelope Identifies Broadly Neutralizing Human Monoclonal Antibodies to HIV-1**

*X. Wu et al.*

A human antibody achieves broad neutralization by binding the viral site of recognition for the primary host receptor, CD4.

10.1126/science.1187659

>> *HIV/AIDS section p. 159*

**High-Resolution Analysis of Parent-of-Origin Allelic Expression in the Mouse Brain**

*C. Gregg et al.*

A large repertoire of genes shows preferential expression of the paternally or maternally inherited allele.

10.1126/science.1190830

**Sex-Specific Parent-of-Origin Allelic Expression in the Mouse Brain**

*C. Gregg et al.*

The relative contributions of the paternal and maternal genomes differ in distinct brain regions and also in males and females.

10.1126/science.1190831

**Long Noncoding RNA as Modular Scaffold of Histone Modification Complexes**

*M.-C. Tsai et al.*

The long noncoding RNA HOTAIR binds two distinct protein complexes that modify chromatin and repress transcription.

10.1126/science.1192002

## TECHNICALCOMMENTS

**Comment on "Differential Sensitivity to Human Communication in Dogs, Wolves, and Human Infants"**

*S. Fiset*

Full text at [www.sciencemag.org/cgi/content/full/329/5988/142-b](http://www.sciencemag.org/cgi/content/full/329/5988/142-b)

**Comment on "Differential Sensitivity to Human Communication in Dogs, Wolves, and Human Infants"**

*S. Marshall-Pescini et al.*

Full text at [www.sciencemag.org/cgi/content/full/329/5988/142-c](http://www.sciencemag.org/cgi/content/full/329/5988/142-c)

**Response to Comments on "Differential Sensitivity to Human Communication in Dogs, Wolves, and Human Infants"**

*J. Topál et al.*

Full text at [www.sciencemag.org/cgi/content/full/329/5988/142-d](http://www.sciencemag.org/cgi/content/full/329/5988/142-d)

## SCIENCENOW

[www.sciencenow.org](http://www.sciencenow.org)

Highlights From Our Daily News Coverage

**Moon's Craters Hold Clues to the Lunar Interior**  
The Kaguya lunar orbiter finds possible similarities between the moon's and Earth's mantles.

**Did Mammoth Extinction Warm Earth?**

A sudden surge in northern birch forests 15,000 years ago is linked to climate change.

**Friendly Baboons Live Longer**

Study shows that people are not the only ones to benefit from having many friends.

## SCIENCE SIGNALING

[www.sciencesignaling.org](http://www.sciencesignaling.org)

The Signal Transduction Knowledge Environment

**RESEARCH ARTICLE: Error Minimization in Lateral Inhibition Circuits**

*O. Barad et al.*

## PODCAST

*N. Barkai and A. M. VanHook*

Lateral inhibition in proneuronal clusters in the fruit fly relies on competition between cis and trans Notch signaling.

**MEETING REPORT: Zinc Bells Rang in Jerusalem!**

*M. Hershinkel et al.*

Researchers met to discuss zinc signaling in health and disease.

## SCIENCE CAREERS

[www.sciencereers.org/career\\_magazine](http://www.sciencereers.org/career_magazine)

Free Career Resources for Scientists

**Getting to Know the Enemy**

*E. Pain*

Russian epidemiologist Elena Dukhovlina studies genetic diversity and transmission of HIV circulating in St. Petersburg.

>> *HIV/AIDS section p. 159 and www.sciencemag.org/special/aids2010/*

**Taken for Granted: The Immigration Guru**

*B. L. Bendersly*

In a debate long dominated by industry voices, statistician and technology expert Norman Matloff speaks up for the little people.

## SCIENCE TRANSLATIONAL MEDICINE

[www.sciencetranslationalmedicine.org](http://www.sciencetranslationalmedicine.org)

Integrating Medicine and Science

**EDITORIAL: Recombinant Innovation and Translational Science Trainees**

*F. J. Meyers*

Diversely trained young scholars form the center of an innovation network in translational medicine.

**PERSPECTIVE: Twenty-Five Years of Translational Medicine in Antiretroviral Therapy—Promises to Keep**

*S. Broder*

## PODCAST

*S. Broder and A. M. VanHook*

Early translational research on dideoxynucleoside drugs set HIV-1/AIDS on a hopeful path.

>> *HIV/AIDS section p. 159 and www.sciencemag.org/special/aids2010/*

**RESEARCH ARTICLE: A Generalized Linear-Quadratic Model for Radiosurgery, Stereotactic Body Radiation Therapy, and High-Dose Rate Brachytherapy**

*J. Z. Wang et al.*

A mathematical model enables better treatment planning for current high-dose cancer therapies.

## SCIENCEPODCAST

[www.sciencemag.org/multimedia/podcast](http://www.sciencemag.org/multimedia/podcast)

Free Weekly Show

Download the 9 July *Science* Podcast to hear about HIV/AIDS in Eastern Europe, adaptation to parasites via symbiosis, why fireflies synchronize, and more.

## SCIENCEINSIDER

[news.sciencemag.org/scienceinsider](http://news.sciencemag.org/scienceinsider)

Science Policy News and Analysis

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