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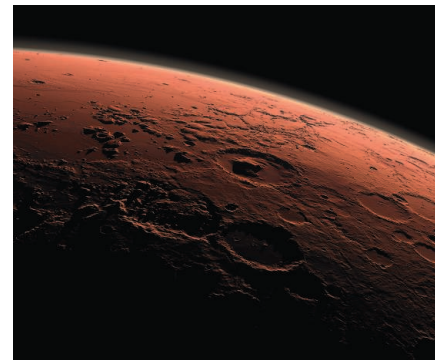
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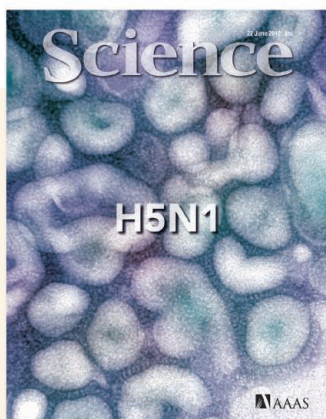
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False-colored transmission electron microscopy image of avian H5N1 influenza virus isolated in Hong Kong (field-of-view width ~260 nm). A highly pathogenic influenza subtype is currently pandemic among the world's wild birds, with serious outbreaks occurring in domestic poultry. Concern about the possibility of the virus evolving into a human pandemic threat has prompted controversial research on mutations that facilitate airborne infection between mammals. See the special section beginning on page 1521 for details of the scientific investigations and policy.

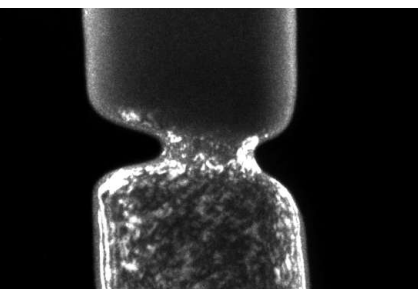
Image: Dr. Gopal Murti/Visuals Unlimited, Inc.

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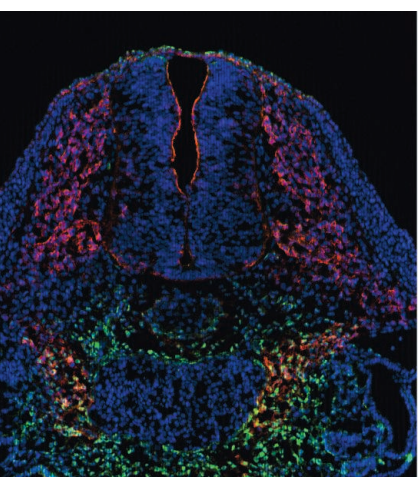
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A quantum critical point may be lurking inside the superconducting dome of a pnictide series.
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N. N. Klimov et al.
Mechanical straining of suspended graphene films leads to confinement of charge carriers into quantum dots.
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- 1566 Breaking the Speed Limits of Phase-Change Memory
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A constant applied voltage causes preordering and accelerates phase changes in $\text{Ge}_2\text{Sb}_2\text{Te}_5$, leading to faster switching.
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- 1573 Baseline Map of Carbon Emissions from Deforestation in Tropical Regions
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- 1578 The Dorsal Aorta Initiates a Molecular Cascade That Instructs Sympatho-Adrenal Specification
D. Saito et al.
Morphogenetic proteins provided by the dorsal aorta control early and late processes in neurovascular development.
- 1581 Membrane Fusion Intermediates via Directional and Full Assembly of the SNARE Complex
J. M. Hernandez et al.
During vesicle membrane fusion, straining of lipids at the edges of an extended contact zone may initiate fusion.
- 1585 The Fission Yeast FANCM Ortholog Directs Non-Crossover Recombination During Meiosis
A. Lorenz et al.
- 1588 FANCM Limits Meiotic Crossovers
W. Crismani et al.
A homolog of a human Fanconi anemia complementation group protein is involved in controlling crossing over during meiosis.
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Y. F. Dagdas et al.
A plant pathogen mechanically ruptures cell walls in rice leaves to enter the plant cells and initiate infection.
- 1595 The *lac* Repressor Displays Facilitated Diffusion in Living Cells
P. Hammar et al.
The *lac* repressor slides along DNA in living cells, frequently passing its operator before binding.

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2.8 Million Years of Arctic Climate Change from Lake El'gygytgyn, NE Russia

M. Melles et al.

A sediment core from a Russian lake provides a high-latitude climate record where prior terrestrial records have been sparse.

10.1126/science.1222135

Kepler-36: A Pair of Planets with Neighboring Orbits and Dissimilar Densities

J. A. Carter et al.

The Kepler spacecraft detected a super-Earth and a Neptune-like planet in very tightly spaced orbits around the same star.

10.1126/science.1223269

Identifying Influential and Susceptible Members of Social Networks

S. Aral and D. Walker

A randomized experiment based on product adoption among Facebook friends identified trend setters and followers.

10.1126/science.1215842

>> [Science Podcast](#)

Human α -Defensin 6 Promotes Mucosal Innate Immunity Through Self-Assembled Peptide Nanonets

H. Chu et al.

Rather than killing bacteria directly, a gut antimicrobial peptide forms netlike structures that ensnare invading bacteria.

10.1126/science.1218831

Deformations Within Moving Kinetochores Reveal Different Sites of Active and Passive Force Generation

S. Dumont et al.

Distinct active, force-generating and passive, frictional interactions with microtubules allow processive chromosome movement.

10.1126/science.1221886

PI4P and PI(4,5)P₂ Are Essential But Independent Lipid Determinants of Membrane Identity

G. R. V. Hammond et al.

The phospholipid phosphatidylinositol 4-phosphate defines important physical properties of the cell membrane.

10.1126/science.1222483

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Comment on "Seroevidence for H5N1 Influenza Infections in Humans: Meta-Analysis"

M. D. Van Kerkhove et al.

Full text at www.sciencemag.org/cgi/content/full/336/6088/1506-b

Response to Comment on "Seroevidence for H5N1 Influenza Infections in Humans: Meta-Analysis"

T. T. Wang and P. Palese

Full text at www.sciencemag.org/cgi/content/full/336/6088/1506-c

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DarwinTunes helps explain how composers refine their compositions based on audience input.

http://scim.ag/DarwinTunes_Composers

Stem Cells Move Into Prime Time

Two promising studies head toward clinical research.

http://scim.ag/Promising_Studies

You Owe Your Life to Rock

The erosion of metal-rich granite long ago set the stage for multicellular organisms.

http://scim.ag/Life_Rock

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The Signal Transduction Knowledge Environment

19 June issue: <http://scim.ag/ss061912>

RESEARCH ARTICLE: Direct Modification and Activation of a Nuclear Receptor-PIP₂ Complex by the Inositol Lipid Kinase IPMK

R. D. Blind et al.

PODCAST

H. A. Ingraham et al.

The transcriptional activity of a nuclear receptor is regulated by the phosphorylation status of a bound lipid.

RESEARCH ARTICLE: Histone Deacetylases 6 and 9 and Sirtuin-1 Control Foxp3⁺ Regulatory T Cell Function Through Shared and Isoform-Specific Mechanisms

U. H. Beier et al.

Combined inhibition of distinct histone deacetylases enhances the suppressive effects of regulatory T cells.

PERSPECTIVE: How Growth Abnormalities Delay "Puberty" in *Drosophila*

I. K. Hariharan

An insulin-like peptide delays metamorphosis of the fruit fly in response to injury or tissue overgrowth.

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Integrating Medicine and Science

20 June issue: <http://scim.ag/stm062012>

RESEARCH ARTICLE: DNazyme Targeting *c-jun* Suppresses Skin Cancer Growth

H. Cai et al.

FOCUS: Resurrecting DNazymes as Sequence-Specific Therapeutics

J. S. Rossi et al.

Catalytic DNA molecules that target the transcription factor *c-jun* inhibit skin cancer growth in mice.

RESEARCH ARTICLE: The Structural Basis for Serotype-Specific Neutralization of Dengue Virus by a Human Antibody

E. P. Teoh et al.

The mechanism of action of a serotype-specific natural human antibody against dengue virus has been identified.

RESEARCH ARTICLE: mTOR Inhibitors Synergize on Regression, Reversal of Gene Expression, and Autophagy in Hepatocellular Carcinoma

H. A. Thomas

Combination therapy causes gene reprogramming, autophagy, and tumor regression in a mouse model approximating human HCC.

RESEARCH ARTICLE: Recombinant MG53 Protein Modulates Therapeutic Cell Membrane Repair in Treatment of Muscular Dystrophy

N. Weisleder et al.

FOCUS: A Molecular Bandage for Diseased Muscle

D. J. Burkin and R. D. Wuebbles

Recombinant human MG53 protein can increase membrane repair after injury in cells and can reduce pathology in animal models of muscle injury and muscular dystrophy.

SCIENCE CAREERS

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Free Career Resources for Scientists

Can NIH Renovate the Biomedical Workforce?

M. Price

An NIH committee recommends overhauling training, increasing postdoc pay, and improving and expanding staff scientist positions.

<http://scim.ag/RenovateWorkforce>

Career Q&A: Equality for Quality

E. Pain

Curt Rice of the University of Tromsø discusses why helping women prepare for promotion is both right and smart.

http://scim.ag/QA_CurtRice

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