

SPECIAL SECTION

Human Conflict

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COVER

We are all too familiar with human conflict, such as this bombing on 13 August 2006 in Beirut, Lebanon, by the Israel Defense Forces. In the special section on Human Conflict (see page 818), we examine the origins of conflict, trace its path through history, and consider its modern manifestations. We also analyze our innate ability to foster peace and look at societies that eschew war. This cover was chosen for visual imagery and not for any political message or endorsement.

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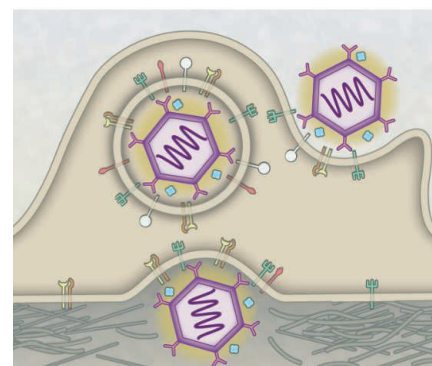
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- 886 Evolutionary Diversity of the Mitochondrial Calcium Uniporter
A. G. Bick et al.
Phylogenetic analysis of the mitochondrial calcium transporter shows that it was a feature of early eukaryotes.

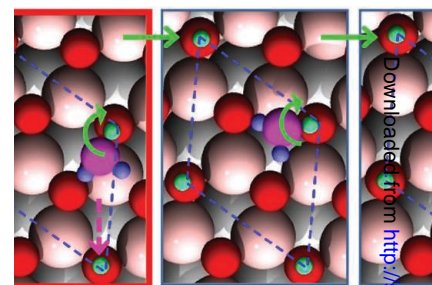
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A sequencing method can discriminate epigenetically modified cytosine nucleotides within embryonic stem cell DNA.

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SCIENCEEXPRESS

www.sciencexpress.org

Evolution and Functional Impact of Rare Coding Variation from Deep Sequencing of Human Exomes

J. A. Tennesen et al.

Most functionally consequential variants in protein-coding genes are rare and, thus, difficult to find.

10.1126/science.1219240

An Abundance of Rare Functional Variants in 202 Drug Target Genes Sequenced in 14,002 People

M. R. Nelson et al.

A pharmacogenomics analysis shows how challenging it will be to associate rare variants with phenotypes.

10.1126/science.1217876

Oscillatory Dynamics of Cdc42 GTPase in the Control of Polarized Growth

M. Das et al.

The regulation of a yeast cell-growth enzyme is dynamic rather than on-off.

10.1126/science.1218377

Graphene Barristor, a Triode Device with a Gate-Controlled Schottky Barrier

H. Yang et al.

The absence of defects and surface oxides at a graphene/silicon interface enables voltage control of graphene devices.

10.1126/science.1220527

Direct Detection of Projectile Relics from the End of the Lunar Basin—Forming Epoch

K. H. Joy et al.

Analysis of lunar rocks from the Apollo missions reveals fragments from meteorites that hit the Moon in the ancient past.

10.1126/science.1219633

Fragments of the Lunar Cataclysm

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10.1126/science.1224184

Roton-Type Mode Softening in a Quantum Gas with Cavity-Mediated Long-Range Interactions

R. Mottl et al.

Low-energy excitations of the type present in superfluid helium are observed in a cold gas of rubidium atoms.

10.1126/science.1220314

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Highlights From Our Daily News Coverage

Electronics Go Viral

Researchers create an electrical generator out of viruses.

http://scim.ag/Electronics_Viral

Engravings of Female Genitalia

May Be World's Oldest Cave Art

Images found on the ceiling of a collapsed shelter may predate those of France's famed Chauvet Cave.

<http://scim.ag/Cave-Art>

Heat Trickery Paves Way for Thermal Computers

Devices harness heat currents instead of electrical ones.

<http://scim.ag/Thermal-Computers>

SCIENCE SIGNALING

www.sciencesignaling.org

The Signal Transduction Knowledge Environment

15 May issue: <http://scim.ag/ss051512>

RESEARCH RESOURCE: MicroSCALE Screening Reveals Genetic Modifiers of Therapeutic Response in Melanoma

K. C. Wood et al.

Miniaturized functional genomics uncovers potentially useful combination therapies and drug targets for melanoma.

PERSPECTIVE: The Structure of the Full-Length Tetrameric PKA Regulatory R β Complex Reveals the Mechanism of Allosteric PKA Activation

J. M. Elkins and S. Knapp

The conformational changes caused by cAMP binding to the regulatory subunit in the PKA holoenzyme are shown.

PERSPECTIVE: The Structural Basis of DKK-Mediated Inhibition of Wnt/LRP Signaling

J. Bao et al.

Structural analysis indicates that the binding sites on a receptor for ligand and inhibitor partially overlap.

PRESENTATION: Roles of GRK2 in Cell Signaling Beyond GPCR Desensitization—GRK2-HDAC6 Interaction Modulates Cell Spreading and Motility

P. Penela et al.

GRK2 modulates tubulin acetylation dynamics in an HDAC6-dependent manner to affect epithelial cell spreading and motility.

SCIENCE TRANSLATIONAL MEDICINE

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Integrating Medicine and Science

16 May issue: <http://scim.ag/stm051612>

EDITORIAL: APO ϵ 4 Status and Traumatic Brain Injury on the Gridiron or the Battlefield

S. Gandy and S. T. DeKosky

Should APO ϵ 4 genotyping be required for high school or college athletes and military personnel?

RESEARCH ARTICLE: Chronic Traumatic Encephalopathy in Blast-Exposed Military Veterans and a Blast Neurotrauma Mouse Model

L. E. Goldstein et al.

Blast exposure is associated with chronic traumatic encephalopathy and persistent cognitive deficits in veterans and athletes.

>> *News story p. 790*

RESEARCH ARTICLE: Gene Therapy for Aromatic L-Amino Acid Decarboxylase Deficiency

W.-L. Hwu et al.

Gene therapy can restore some motor function in patients with aromatic L-amino acid decarboxylase deficiency.

RESEARCH ARTICLE: CD25 Blockade Depletes and Selectively Reprograms Regulatory T Cells in Concert with Immunotherapy in Cancer Patients

A. J. Rech et al.

CD25 monoclonal antibody therapy rapidly and durably depletes T_{regs} in cancer patients through a mechanism consistent with reprogramming.

RESEARCH ARTICLE: High-Throughput Sequencing Detects Minimal Residual Disease in Acute T Lymphoblastic Leukemia

D. Wu et al.

High-throughput sequencing can detect minimal residual disease comparable to multiparametric flow cytometry in T-ALL patients.

PERSPECTIVE: Drug-Based Optical Agents—Infiltrating Clinics at Lower Risk

W. Scheuer et al.

Using drugs as optical imaging agents and “microdosing” amounts reduces risk or clinical translation of fluorescence molecular imaging.

SCIENCE CAREERS

www.sciencereers.org/career_magazine

Free Career Resources for Scientists

Winning Over Hearts Means Understanding Minds

M. Price

For scientists who study conflict's motivations and consequences, the brain is the battlefield that matters.

<http://scim.ag/HeartsandMinds>

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Tooling Up: How to Swim With Sharks

D. Jensen

Here's what you need to know about third-party services that offer to help with your job search.

http://scim.ag/TU_Sharks

In Person: Family-Friendly Science Careers

T. Ainsworth

We need to let young women know that it is possible to have a science career and a family.

<http://scim.ag/InPersonAinsworth>

SCIENCE PODCAST

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Free Weekly Show

On the 18 May Science Podcast: a special show exploring human conflict, including strife among our primate ancestors, the biological underpinnings of racism, and the fundamentals of “peace systems.”

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