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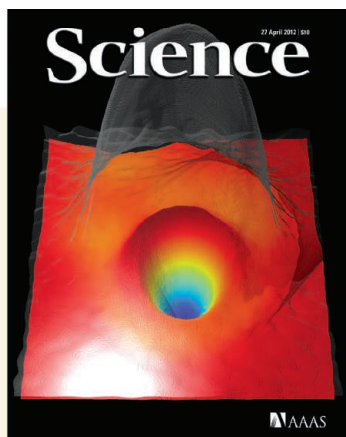


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COVER

Overlaid scanning tunneling and atomic force microscopy images of a single atom (width 1.3 nanometers): tunneling current (gray veil) and force (colored surface) between a tungsten atom and a carbon monoxide molecule. The force shows a strong angular dependence and is attractive (blue minimum) in one direction and repulsive (dark red crescent) in others. The angular dependence of single chemical bonds determines the shape of molecules and crystals. See page 444.

Image: Joachim Welker, University of Regensburg

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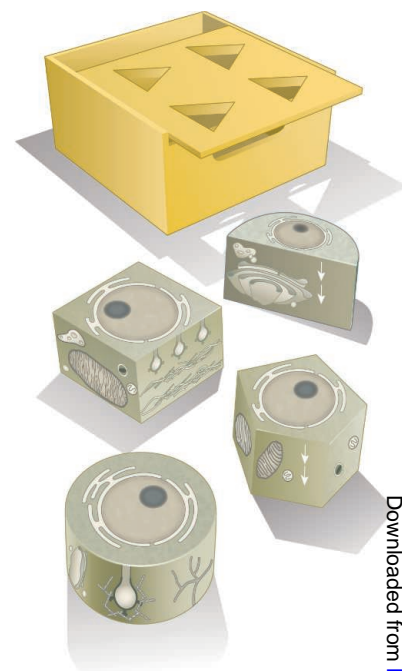
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The Crystal Structure of Human Argonaute2

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The structure of the core protein of the human RNA interference machinery is determined at high resolution.

10.1126/science.1221551

Quantitative Sequencing of 5-Methylcytosine and 5-Hydroxymethylcytosine at Single-Base Resolution

M. J. Booth et al.

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

10.1126/science.1220671

Neural Correlates of a Magnetic Sense

L.-Q. Wu and J. D. Dickman

Neurons in a pigeon's brain encode the direction and intensity of the geomagnetic field.

10.1126/science.1216567

AID-Driven Deletion Causes Immunoglobulin Heavy Chain Locus Suicide Recombination in B Cells

S. Péron et al.

Recombination-induced deletion of the immunoglobulin heavy chain gene in activated B cells may influence B cell homeostasis.

10.1126/science.1218692

Evolutionary Trade-Offs, Pareto Optimality, and the Geometry of Phenotype Space

O. Shoval et al.

The fitness of an organism can be modeled graphically to determine how phenotypic tradeoffs are maximized.

10.1126/science.1217405

TECHNICAL COMMENTS

Comment on "Universality in the Evolution of Orientation Columns in the Visual Cortex"

Y. Meng et al.

Full text at www.sciencemag.org/cgi/content/ful/336/6080/413-c

Response to Comment on "Universality in the Evolution of Orientation Columns in the Visual Cortex"

W. Keil et al.

Full text at www.sciencemag.org/cgi/content/ful/336/6080/413-d

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Highlights From Our Daily News Coverage

No Love for Comet Wipeout

Findings argue against extraterrestrial impact snuffing out mammoths and early Indians.

http://scim.ag/Comet_Wipeout

Where's the Beef? Early Humans Took It

The rise of human hunting and scavenging drove large carnivores extinct, a new study suggests.

http://scim.ag/Early_Humans

Why Creepy People Give Us the Chills

Individuals who inappropriately mimic the body language of their peers can leave acquaintances feeling cold.

http://scim.ag/Creepy_People

SCIENCE SIGNALING

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The Signal Transduction Knowledge Environment
24 April issue: <http://scim.ag/ss042412>

RESEARCH ARTICLE: Differential β -Arrestin-Dependent Conformational Signaling and Cellular Responses Revealed by Angiotensin Analogs

B. Zimmerman et al.

The conformational changes induced in β -arrestin by angiotensin II analogs dictate the cellular response.

RESEARCH RESOURCE: Studying the Dynamics of SLP-76, Nck, and Vav1 Multimolecular Complex Formation in Live Human Cells with Triple-Color FRET

M. H. Pauker et al.

The formation of a multiprotein complex in response to T cell activation is monitored in live cells.

PERSPECTIVE: Linking NAADP to Ion Channel Activity—A Unifying Hypothesis

A. H. Guse

NAADP-mediated regulation of ion channels may occur through intermediary binding partners.

JOURNAL CLUB: The Role of EHD Proteins at the Neuronal Synapse

M. S. Ioannou and A. L. Marat

EHD proteins promote synaptic vesicle formation by limiting the extent of dynamin helix formation.

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Integrating Medicine and Science

25 April issue: <http://scim.ag/stm042512>

RESEARCH ARTICLE: Looking Beyond Historical Patient Outcomes to Improve Clinical Models

C.-C. Chia et al.

FOCUS: Thoroughly Modern Risk Prediction?

M. J. Pencina and R. B. D'Agostino Sr.

The computer revolution may facilitate new methods for the construction of models that predict clinical risk.

RESEARCH ARTICLE: Negative Allosteric Modulation of the mGluR5 Receptor Reduces Repetitive Behaviors and Rescues Social Deficits in Mouse Models of Autism

J. L. Silverman et al.

FOCUS: Tweaking the Social Network

B. Gomez-Mancilla

A preclinical mouse model of autism spectrum disorder paves the way for clinical trials with a glutamate receptor antagonist.

RESEARCH ARTICLE: Suppression of Phosphoinositide 3-Kinase Signaling and Alteration of Multiple Ion Currents in Drug-Induced Long QT Syndrome

Z. Lu et al.

The dangerous heart arrhythmias that are triggered as a side effect of some drugs are caused by many ion channels, prompting a rethinking of how we screen for these adverse events.

SCIENCE CAREERS

www.sciencereers.org/career_magazine
Free Career Resources for Scientists

Experimental Error: Thick Books and Thin Films

A. Ruben

Before you pick up that next thriller novel, remember that scientists are not exactly as they are often portrayed.

<http://scim.ag/HWU12v>

In Person: Consulting for Career Enhancement

M. Schillebeeckx et al.

A group of grad students and postdocs has created a successful nonprofit consulting group to improve their private-sector employment prospects.

<http://scim.ag/J3woee>

Another NPA Founder Speaks

M. Price

Today, NPA cofounder Karen Christopherson is Principal Scientist at a unit of Pfizer.

<http://scim.ag/Jsnjk2>

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