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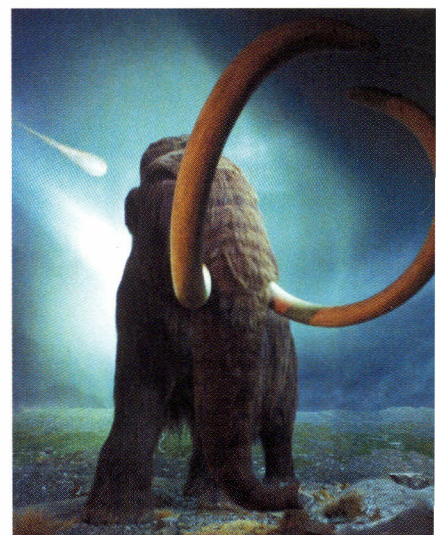
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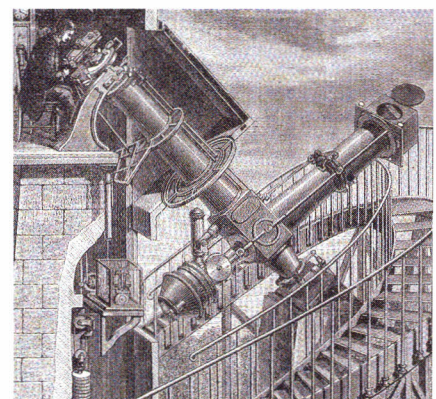
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COVER

False-colored scanning electron micrograph showing the shedding of superficial cells in the urogenital tract of a female mouse (magnification ~3000×). Exfoliation of epithelial cells inhibits microbial colonization of the mucosa. On page 1197, Muenzner *et al.* report how specialized pathogens suppress this host defense to successfully establish a firm foothold in their host.

Image: Jochen Hentschel and Christof R. Hauck/Lehrstuhl Zellbiologie, Universität Konstanz, Germany

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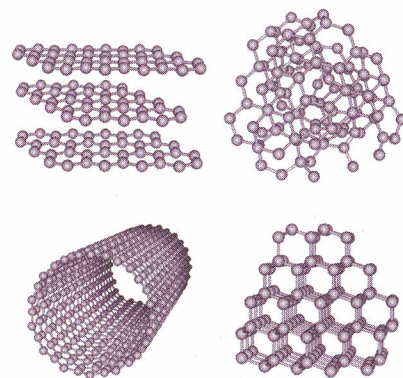
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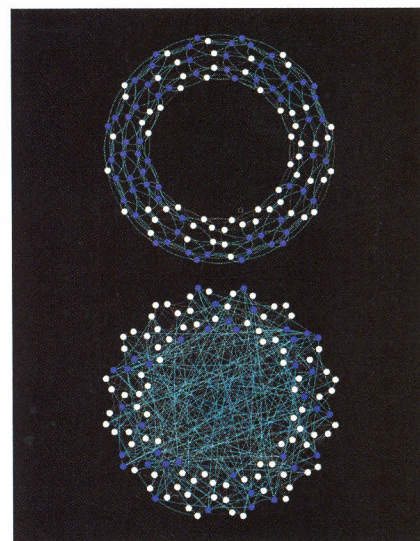
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Piezo1 and Piezo2 Are Essential Components of Distinct Mechanically Activated Cation Channels
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Cation channel genes encode for a transducer molecule that converts mechanical stimuli into cell signaling.

10.1126/science.1193270

A Critical Role for LTA₄H in Limiting Chronic Pulmonary Neutrophilic Inflammation
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Cigarette smoke promotes lung inflammation by hindering an enzyme that degrades an immune cell chemoattractant.

10.1126/science.1190594

The Genetic and Molecular Basis for Sunscreen Biosynthesis in Cyanobacteria
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A gene cluster encodes a four-enzyme pathway that uses an unusual mechanism to synthesize small-molecule sunscreens.

10.1126/science.1193637

Observing Supernova 1987A with the Refurbished Hubble Space Telescope
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Images of the remnants of a stellar explosion reveal details of fast astrophysical shock waves.

10.1126/science.1192134

A New Mixing Diagnostic and Gulf Oil Spill Movement
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10.1126/science.1194607

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One or two quantum particles are enough to approach absolute zero.

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Researchers find evidence for the earliest symbolic meal 12,000 years ago in Israel.

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Overeager trophy hunters may be the biggest threat to African lions.

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EDITORIAL GUIDE: Focus Issue—Systems Analysis of Protein Phosphorylation

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Kinases and phosphatases are stars in the signaling universe.

RESEARCH RESOURCE: Comprehensive Expression Profiles of Genes for Protein Tyrosine Phosphatases in Immune Cells
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Gene expression analysis suggests that protein tyrosine phosphatases exhibit immune cell-specific expression profiles.

RESEARCH RESOURCE: Collection and Motif-Based Prediction of Phosphorylation Sites in Human Viruses
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PROTOCOL: Targeting the Reversibly Oxidized Protein Tyrosine Phosphatase Superfamily
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NETWATCH: Viral Post-Translational Modification Database (virPTM)

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NETWATCH: PHOSIDA Posttranslational Modification Database

Browse and search a database of phosphorylation, acetylation, and N-glycosylation sites determined by mass spectrometry; in Protein Databases.

SCIENCE CAREERS

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Free Career Resources for Scientists

Taken for Granted: The New California Postdoc Contract
B. Benderly

After lengthy talks and some strategic arm-twisting, the University of California comes to terms with its postdoc union.

In Person: How Our Adventures Led to Careers in Science
K. Jardine and A. Jardine

Science and outdoor activities form a positive feedback loop for scientists Kolby and Angela Jardine.

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Integrating Medicine and Science

PERSPECTIVE: Molecular Profiling—Moving Away from Tumor Philately
J. S. Reis-Filho et al.

Cutting-edge technologies that deliver diverse molecular data may dramatically alter breast cancer characterization and treatment.

PERSPECTIVE: Translational Medicine and the Value of Biomarker Qualification
F. M. Goodsaid and D. L. Mendrick

The U.S. Food and Drug Administration's new process for biomarker qualification developed from a need for better biomarkers of renal injury.

RESEARCH ARTICLE: Platelet CD154 Potentiates Interferon- α Secretion by Plasmacytoid Dendritic Cells in Systemic Lupus Erythematosus
P. Duffau et al.

In the autoimmune disease lupus, platelets activated by self-antigens contribute to pathology by triggering the secretion of interferon from immune cells.

RESEARCH ARTICLE: Overlap and Effective Size of the Human CD8⁺ T Cell Receptor Repertoire
H. S. Robins et al.

The adaptive immune system is far less diverse, and the interpersonal overlap of T-cell receptor repertoires is thousands of times larger, than expected.

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Download the 3 September *Science* Podcast to hear about how social network structure affects the spread of behavior, challenging the mammoth-killer impact hypothesis, your letters to *Science*, and more.

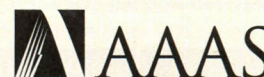
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Science Policy News and Analysis

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