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Photo illustration: Nayomi Kevitiyagala (image: Grand Tour/Corbis)

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594 Ultrasmooth Patterned Metals for Plasmonics and Metamaterials

P. Nagpal et al.

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597 Probing Spin-Charge Separation in a Tomonaga-Luttinger Liquid

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601 The Formation of Population III Binaries from Cosmological Initial Conditions

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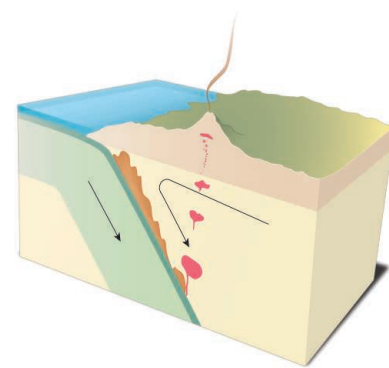
Chronic stress alters brain neural circuits and affects the ability of animals to perform actions based on their consequences.

626 Nucleosomal Fluctuations Govern the Transcription Dynamics of RNA Polymerase II

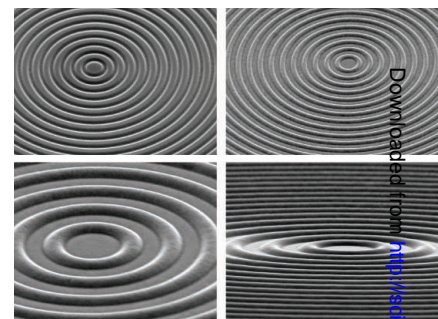
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RNA polymerase acts as a molecular ratchet to force its way through nucleosome-infested DNA.

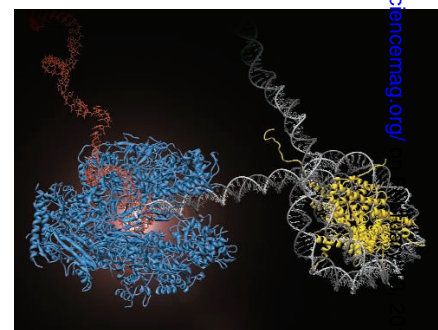
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www.sciencexpress.org

Unprecedented Restoration of a Native Oyster Metapopulation

D. M. Schulte et al.

The height of oyster reefs above the river bed promotes their restoration in the Chesapeake Bay.
10.1126/science.1176516

>> *News story p. 525; Restoration Ecology section p. 555*

Enhancement of Biodiversity and Ecosystem Services by Ecological Restoration: a Meta-Analysis

J. M. Rey Benayas et al.

Restoration, biodiversity, and ecosystem services are positively linked in a wide range of ecosystem types across the globe.
10.1126/science.1172460

>> *Restoration Ecology section p. 555; Science Podcast*

Common Regulatory Variation Impacts Gene Expression in a Cell Type–Dependent Manner

A. S. Dimas et al.

Genetic variation in regulatory elements among humans affects gene expression in a tissue specific manner.
10.1126/science.1174148

Reassessing the Source of Long-Period Comets

N. A. Kaib and T. Quinn

Numerical simulations show that the inner Oort Cloud is a major source of long-period comets that cross Earth's orbit.
10.1126/science.1172676

Barcoding of Plants and Fungi

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10.1126/science.1176906

>> *News story p. 526; Restoration Ecology section p. 555*

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Comment on "Remeasuring the Double Helix"

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full text at www.sciencemag.org/cgi/content/full/325/5940/538-b

Response to Comment on "Remeasuring the Double Helix"

R. S. Mathew-Fenn et al.

full text at www.sciencemag.org/cgi/content/full/325/5940/538-c

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Plant still harbors adaptations that protected it from a long-dead foe.

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New insights into tsunami behavior may help researchers better track them with radar.

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www.sciencesignaling.org

The Signal Transduction Knowledge Environment

EDITORIAL GUIDE: Unraveling Signaling Complexity

N. R. Gough and J. F. Foley

Dynamics adds to the complexity of signaling networks.

RESEARCH ARTICLE: Cell Type–Specific Importance of Ras–c-Raf Complex Association Rate Constants for MAPK Signaling

C. Kiel and L. Serrano

Ras–c-Raf association rates affect downstream signaling in the absence of negative feedback but not in its presence.

RESEARCH ARTICLE: Comparative Analysis Reveals Conserved Protein Phosphorylation Networks Implicated in Multiple Diseases

C. S. H. Tan et al.

Comparing the human phosphoproteome to that of flies, worms, and yeast reveals insights into evolution and disease.

RESEARCH ARTICLE: Integrating Proteomic, Transcriptional, and Interactome Data Reveals Hidden Components of Signaling and Regulatory Networks

S.-S. C. Huang and E. Fraenkel

Analysis of multiple "omic" data sets with a prize-collecting Steiner tree algorithm reveals components of signaling networks that are not obvious by analyzing the data individually.

PERSPECTIVE: Understanding Modularity in Molecular Networks Requires Dynamics

R. P. Alexander et al.

Relating structure and dynamics of molecular networks remains very challenging.

PERSPECTIVE: Proteomic Revelation—SUMO Changes Partners When the Heat Is On

K. Flick and P. Kaiser

A system-level view of SUMOylation dynamics shows the importance of SUMOylation to the heat shock response.

PERSPECTIVE: The Complexity of Cell Signaling and the Need for a New Mechanics

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Studies that make sense of protein networks provide approaches to cope with complex signaling pathways.

PERSPECTIVE: Dynamic Advances in NF- κ B Signaling Analysis

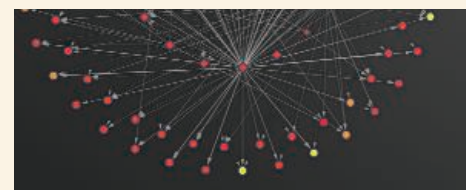
T. Kobayashi and R. Kageyama

Cytokine stimulation of cells at different time intervals produces distinct patterns of NF- κ B–dependent gene transcription.

PODCAST

M. B. Yaffe and A. M. VanHook

Science Signaling's Chief Scientific Editor discusses complexity in signaling networks.



SCIENCE SIGNALING

Kinase-substrate network.

SCIENCE CAREERS

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Free Career Resources for Scientists

Perspective: How to Succeed in Big Science and Still Get Tenure

V. McGovern

You need to show that you are a serious scientist, separate from your work group.

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E. Pain

Demonstrate your independence by negotiating with advisers, seeking individual fellowships, or obtaining a junior-PI position.

Independent Postdocs: Resources

E. Pain

Here is a list of grants, fellowships, and junior-leader positions for postdocs in Europe and the United States.

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