COVER
A three-dimensional model of the topological structure of zeolite SSZ-65. The Gordon Research Conference on Nanoporous Materials will be held 15 to 20 June 2008 at Colby College, Waterville, ME. The schedules for the 2008 Gordon Research Conferences begin on page 637.
Model creation and rendering: Kelly Harvey and Scott Harvey

DEPARTMENTS
543 Science Online
545 This Week in Science
549 Editors’ Choice
550 Contact Science
551 Random Samples
553 Newsmakers
634 2008 Information for Authors
636 New Products
637 Gordon Research Conferences
662 Science Careers

EDITORIAL
548 The Real Debate by Donald Kennedy

NEWS OF THE WEEK
DOE’s Disappointing Budget Makes It Harder to Stick to the Basics
Lancet and MSF Split Over Malnutrition Series
Indian Government Hopes Bill Will Stimulate Innovation
Dutch Revise Policy Blocking Iranian Students
Deaths Prompt a Review of Experimental Probiotic Therapy

SCIENCESCOPE
DNA Assembles Materials From the Ground Up
Aging of the Ovary Linked to PTEN Pathway

NEWS FOCUS
A Seismic Shift for Stem Cell Research
Shinya Yamanaka: Modest Researcher, Results to Brag About
Nuclear Transfer: Still on the Table
Scientists Hope to Adjust the President’s Vision for Space
Getting Up to Speed on Space
The Big Thaw Reaches Mongolia’s Pristine North

LETTERS
Retraction M. A. Dwyer, L. L. Looger, H. W. Hellinga
Comparing Social Skills of Children and Apes
F. B. M. de Waal, C. Boesch, V. Horner, A. Whiten
Response E. Herrmann et al.

BOOKS ET AL.
Evolution of Primary Producers in the Sea
P. G. Falkowski and A. H. Knoll, Eds., reviewed by R. Riding
No Way Home The Decline of the World’s Great Animal Migrations D. S. Wilcove, reviewed by T. Alerstam

POLICY FORUM
Stationarity Is Dead: Whither Water Management?
P. C. D. Milly et al.

PERSPECTIVES
Sweet, Hairy, Soft, and Slippery
S. Lee and N. D. Spencer
The Toll of Cathepsin K Deficiency
A. M. Krieg and G. B. Lipford
Glass Surfaces Not So Glassy
J. R. Dutcher and M. D. Ediger
The Art of Assembly
F. Szoka
Nanowires in Nanoelectronics
D. K. Ferry
Food Security Under Climate Change
M. E. Brown and C. C. Funk

CONTENTS continued >>
Human-Induced Changes in the Hydrology of the Western United States
T. P. Barnett et al.
Combining a regional hydrologic and global climate model implies that human-caused CO$_2$ emissions have already greatly changed river flows and snow pack in the western United States.

10.1126/science.1152538

Asphericity in Supernova Explosions from Late-Time Spectroscopy
K. Maeda et al.
Spectroscopic signatures show that supernova explosions of stars that have lost their hydrogen envelopes are strongly aspherical and may be jetlike.

10.1126/science.1149437

High-Resolution Mapping of Crossovers Reveals Extensive Variation in Fine-Scale Recombination Patterns Among Humans
G. Coop, X. Wen, C. Ober, J. K. Pritchard, M. Przeworski
High-density genotyping of individuals from 82 families shows unexpected variation in the number of meiotic crossovers and in the relative activity of recombination hotspots.

10.1126/science.1151851

Sequence Variants in the RNF212 Gene Associate with Genomewide Recombination Rate
A. Kong et al.
A variant of a human gene associated with high rates of recombination in males and low rates in females is an ortholog of a nematode gene essential for recombination.

10.1126/science.1152422

Languages Evolve in Punctuational Bursts
Q. D. Atkinson et al.
A study of Bantu, Indo-European, Austronesian, and Polynesian languages shows that up to one-third of their words arose in rapid evolutionary bursts from the predecessor tongue.

588

Widespread Genetic Incompatibility in C. elegans Maintained by Balancing Selection
H. S. Seidel, M. V. Rockman, L. Kruglyak
Strong natural selection is maintaining multiple alleles of a gene in wild populations of the nematode C. elegans, despite their negative effect on fitness.

589

Insights into Phases of Liquid Water from Study of Its Unusual Glass-Forming Properties
C. A. Angell

582

Single-Molecule Cut-and-Paste Surface Assembly
S. K. Kufer et al.
An atomic force microscope tip derivatized with DNA can pick up and assemble large molecules bearing DNA handles into specific patterns on a surface in aqueous solution.

594

Electronic Liquid Crystal State in the High-Temperature Superconductor YBa$_2$Cu$_3$O$_{6.45}$
V. Hinkov et al.
Neutron-scattering measurements suggest that ordering of fluctuating electron spins explains the liquid crystal phases recently seen in some correlated electron systems.

597
REPORTS CONTINUED...

MATERIALS SCIENCE
Measuring the Surface Dynamics of Glassy Polymers  600
Z. Fakhraai and J. A. Forrest
Removal of gold nanospheres dimpling the surface of a polymer film reveals that polymer chains near the surface relax more rapidly than the bulk.

GEOCHEMISTRY
Abiogenic Hydrocarbon Production at Lost City Hydrothermal Field  604
G. Proskurowski et al.
The abundance of hydrocarbons and isotopic data imply that hydrocarbons are produced chemically from mantle carbon at a cool Atlantic Ocean hydrothermal system.

CLIMATE CHANGE
Prioritizing Climate Change Adaptation Needs for Food Security in 2030  607
D. B. Lobell et al.
Analysis of 12 food-insecure regions for vulnerability to crop failure from climate change indicates that those in southern Africa and south Asia are in particular need of attention.

DEVELOPMENTAL BIOLOGY
Oocyte-Specific Deletion of Pten Causes Premature Activation of the Primordial Follicle Pool  611
P. Reddy et al.
In mice, a tumor suppressor commonly mutated in human cancers prevents premature activation of ovarian follicles, allowing them to form oocytes throughout life.

IMMUNOLOGY
Cathepsin K–Dependent Toll-Like Receptor 9 Signaling Revealed in Experimental Arthritis  624
M. Asagiri et al.
A lysosomal enzyme normally associated with osteoclasts of the bone has further function in signaling through an innate receptor in immune cells.

BIOCHEMISTRY
Direct Observation of Hierarchical Folding in Single Riboswitch Aptamers  630
W. J. Greenleaf et al.
Optical trapping reveals that activation by adenine stabilizes the weakest helix in a riboswitch, after which secondary and tertiary structures are formed sequentially.

DEVELOPMENTAL BIOLOGY
The Maternal Nucleolus Is Essential for Early Embryonic Development in Mammals  613
S. Ogushi et al.
After fertilization or somatic cell nuclear transfer, the oocyte’s nucleolus but not the sperm’s is essential for subsequent development.

MEDICINE
Profiling Essential Genes in Human Mammary Cells by Multiplex RNAi Screening  617
J. M. Silva et al.
Cancer Proliferation Gene Discovery Through Functional Genomics  620
M. R. Schlabach et al.
Systematic inhibition of gene expression with RNA interference screening reveals genes essential for growth and survival of tumor cells, potentially leading to new cancer drugs.
Perspective: Metabotropic Glutamate Receptors and Fragile X Mental Retardation Protein—Partners in Translational Regulation at the Synapse

J. A. Ronesi and K. M. Huber

On the road to protein synthesis–dependent plasticity, FMRP is the brake and mGluRs are the gas.

Events

Plan to attend a meeting related to cell signaling.

Making connections through collaboration.

Maximizing Productivity and Recognition, Part 2: Collaboration and Networking

S. Pfriman, P. Balsam, R. E. Bell, J. D. Laird, P. Culligan

Collaboration and networking help make connections that can advance both science and your career.

What’s Ahead for Early-Career Scientists?

B. L. Benderly

A comprehensive examination finds opportunities in the U.S. brighter in industry than in academia.

Learning to Manage

H. Franzen

A workshop series in Germany teaches management skills to young scientists before they need them.

February 2008 Funding News

J. Fernández

Learn about the latest in research funding opportunities, scholarships, fellowships, and internships.
Science 319 (5863), 545-661.