EDITORIAL
10 A New College Science Prize
Bruce Alberts

NEWS OF THE WEEK
14 The Battle Over the 2011 Budget: What’s at Stake for Research
16 ESF Moves Toward Rebirth, But Change Worries Some
17 Studies Point to Possible Contamination in XMRV Findings
18 A Slimy Invader Blooms in the Rivers of Patagonia
19 From Science’s Online Daily News Site
19 From the Science Policy Blog

NEWS FOCUS
20 Was North Africa the Launch Pad for Modern Human Migrations?
>> Science Podcast
24 The Power of One
Single-Cell Tech Primer
27 Meeting for Peer Review at a Resort That’s Virtually Free

LETTERS
29 Fight for Yasuni Far from Finished
K. Swing
Publish and Flourish
R. Refinetti
Indian Science: Steps to Excellence
J. Bayry et al.
Culture and Biodiversity Losses Linked
T. Wu and M. A. Petriello
Response
M. R. W. Rands et al.

BOOKS ET AL.
32 Sydney Brenner
E. C. Friedberg, reviewed by R. H. A. Plasterk
33 The Commodification of Academic Research
H. Radder, Ed., reviewed by S. Shapin

POLICY FORUM
34 Bad Science Used to Support Torture and Human Experimentation
V. Iacopino et al.

PERSPECTIVES
36 When Vernalization Makes Sense
F. Turck and G. Coupland
>> Report p. 76
37 The Feeding Habits of Ammonites
K. Tanabe
>> Report p. 70
38 Getting a Better Estimate of an Atmospheric Radical
I. S. A. Isaksen and S. B. Dalsøren
>> Report p. 67
39 Formin Tip Tracking
T. D. Pollard
>> Report p. 80
41 More Intense, Shorter Pulses
G. Mourou and T. Tajima
42 The Chlorine Dilemma
D. L. Sedlak and U. von Gunten

REVIEW
44 Innate or Adaptive Immunity?
The Example of Natural Killer Cells
E. Vivier et al.

CONTENTS continued >>

COVER
Multiwavelength extreme ultraviolet image of the Sun taken by the Solar Dynamics Observatory’s Atmospheric Imaging Assembly. Colors represent different gas temperatures: ~800,000 kelvin (K) (blue), ~1.3 million K (green), and ~2 million K (red). New observations reveal a link between hot plasma and jets propelled upward from the region immediately above the Sun’s surface and help explain why the Sun’s outer atmosphere, or corona, is much hotter than its surface. See page 55.
Image: NASA/Solar Dynamics Observatory/Atmospheric Imaging Assembly
BREVIA
50  Freshwater Methane Emissions Offset the Continental Carbon Sink  
D. Bastviken et al. 
Inland freshwaters, which include lakes, reservoirs, streams, and rivers, may emit far more methane than previously thought.

RESEARCH ARTICLE
51  Biscrolling Nanotube Sheets and Functional Guests Into Yarns  
M. D. Lima et al.  
Carbon nanotube sheets can support very large fractions of a second material, such as a superconductor or a catalyst.

REPORTS
55  The Origins of Hot Plasma in the Solar Corona  
B. De Pontieu et al.  
The solar corona is heated by jets of plasma propelled upward from the region immediately above the Sun’s surface.

58  Universal Quantum Viscosity in a Unitary Fermi Gas  
C. Cao et al.  
Viscosity studies of an ultracold gas of $^6$Li atoms in two temperature regimes enable comparison with a string theory limit.

61  Time-Resolved Holography with Photoelectrons  
Y. Huismans et al.  
The interference pattern produced by photoelectrons provides holographic snapshots of the photoionization process.

64  Spin Crossover in Ferropericlase at High Pressure: A Seismologically Transparent Transition?  
D. Antonangeli et al.  
An iron spin transition has no effect on the seismologic properties of lower-mantle minerals.

67  Small Interannual Variability of Global Atmospheric Hydroxyl  
S. A. Montzka et al.  
The abundance of the highly reactive hydroxyl radical is well buffered against perturbations.

70  The Role of Ammonites in the Mesozoic Marine Food Web Revealed by Jaw Preservation  
I. Kruta et al.  
Analysis of x-ray microtomographic reconstructions of ammonite fossils reveal their feeding habits.

73  Developmental Plasticity in Sexual Roles of Butterfly Species Drives Mutual Sexual Ornamentation  
K. L. Prudic et al.  
A butterfly switches sexual signaling and mate preferences depending on environmental temperatures during development.

76  Vernalization-Mediated Epigenetic Silencing by a Long Intrinsic Noncoding RNA  
J. B. Heo and S. Sung  
Spring flowering enabled by a winter chill is regulated by interplay between protein-coding and noncoding RNA transcripts.

80  Rotational Movement of the Formin mDia1 Along the Double Helical Strand of an Actin Filament  
H. Mizuno et al.  
Visualization of formin protein rotating along an actin filament gives insight into how it promotes actin assembly.

83  Spontaneous Cortical Activity Reveals Hallmarks of an Optimal Internal Model of the Environment  
P. Berkes et al.  
Internal models of the environment optimize as the brain develops.

87  Electrical Synapses Control Hippocampal Contributions to Fear Learning and Memory  
S. Bissiere et al.  
Neuronal gap-junction channels containing connexin 36 proteins participate in consolidation of fear memories.

91  Structure of Precursor-Bound NifEN: A Nitrogenase FeMo Cofactor Maturase/Insertase  
J. T. Kaiser et al.  
A metalloprotein structure involved in nitrogen fixation offers insight into metal-cluster insertion in nitrogenase.