ESSAYS
872 Genome-Sequencing Anniversary: A Celebration of the Genome, Part III
S. Jasanoﬀ
874 A Living Constitution
M. V. Olson
876 What Does a “Normal” Human Genome Look Like?
S. Yamanaka
877 Human Genome Sequencing: Celebrating 10 Years
L. Al-Gazali
878 Gene Patents: The Shadow of Uncertainty
R. Cook-Deegan
879 The Genomic Foundation Is Shifting
J. S. Mattick
880 Famine in the Presence of the Crystal Structure of the Signal Recognition Particle in Complex with Its Receptor
E. Hoal
881 Synthetic Clonal Reproduction Through Seeds
M. P. A. Marinathu et al.
882 Clonal reproduction is engineered in a sexual plant by manipulating conserved genes controlling meiosis.

RESEARCH ARTICLES
877 Extended Nucleation of the 1999 Mw 7.6 Izmit Earthquake
M. Bouchon et al.
878 Low-frequency seismic events may have been part of slip accumulation before a large earthquake.
881 The Crystal Structure of the Signal Recognition Particle in Complex with Its Receptor
S. F. Ataide et al.
882 Guanine triphosphate controls changes in the signal recognition particle that facilitate transfer of the signal sequence to the translocon.
883 Quantum Reﬂection of He2 Several Nanometers Above a Grating Surface
B. S. Zhao et al.
884 The helium molecule can interact at large distances with the evanescent repulsion potential of the surface.
885 Spin Selectivity in Electron Transmission Through Self-Assembled Monolayers of Double-Stranded DNA
B. Göhler et al.
886 Photoelectrons emitted from a DNA-covered gold surface can have an unbalanced spin population of up to 60%.
887 Capillary Forces in Suspension Rheology
E. Koos and N. Willenbacher
888 The addition of a small amount of a nonwetting immiscible ﬂuid to a suspension can drastically alter its rheological properties.
889 Steric Control of the Reaction of CH3Cl with Chlorine Atom
F. Wang et al.
890 Spectroscopy elucidates the complex interplay between orientational and vibrational effects in a simple chemical reaction.
891 The Magnitude and Duration of Late Ordovician–Early Silurian Glaciation
S. Finnegan et al.
892 Carbonate isotopes reveal a link between past ocean temperatures and mass extinction.
893 Hibernation in Black Bears: Independence of Metabolic Suppression from Body Temperature
Ø. Tøien et al.
894 Hibernating black bears suppress their metabolic rate to 25% of normal, but only slightly reduce their body temperature.
895 The Antiproliferative Action of LysM-Type Mycorrhizal Receptor Recruited for Rhizobium Symbiosis in Nonlegume Parasponia
R. Op den Camp et al.
896 Parasponia uses a mycorrhizal signaling receptor essential for arbuscle formation to control rhizobium nodule symbiosis.
897 The Magnitude and Duration of Late Ordovician–Early Silurian Glaciation
S. Finnegan et al.
898 Carbonate isotopes reveal a link between past ocean temperatures and mass extinction.
899 Hibernation in Black Bears: Independence of Metabolic Suppression from Body Temperature
Ø. Tøien et al.
890 Hibernating black bears suppress their metabolic rate to 25% of normal, but only slightly reduce their body temperature.
901 The Antiproliferative Action of LysM-Type Mycorrhizal Receptor Recruited for Rhizobium Symbiosis in Nonlegume Parasponia
R. Op den Camp et al.
902 Parasponia uses a mycorrhizal signaling receptor essential for arbuscle formation to control rhizobium nodule symbiosis.
903 The Magnitude and Duration of Late Ordovician–Early Silurian Glaciation
S. Finnegan et al.
904 Carbonate isotopes reveal a link between past ocean temperatures and mass extinction.
905 Hibernation in Black Bears: Independence of Metabolic Suppression from Body Temperature
Ø. Tøien et al.
906 Hibernating black bears suppress their metabolic rate to 25% of normal, but only slightly reduce their body temperature.
907 The Antiproliferative Action of LysM-Type Mycorrhizal Receptor Recruited for Rhizobium Symbiosis in Nonlegume Parasponia
R. Op den Camp et al.
908 Parasponia uses a mycorrhizal signaling receptor essential for arbuscle formation to control rhizobium nodule symbiosis.
909 The Magnitude and Duration of Late Ordovician–Early Silurian Glaciation
S. Finnegan et al.
910 Carbonate isotopes reveal a link between past ocean temperatures and mass extinction.
911 Hibernation in Black Bears: Independence of Metabolic Suppression from Body Temperature
Ø. Tøien et al.
912 Hibernating black bears suppress their metabolic rate to 25% of normal, but only slightly reduce their body temperature.
913 The Antiproliferative Action of LysM-Type Mycorrhizal Receptor Recruited for Rhizobium Symbiosis in Nonlegume Parasponia
R. Op den Camp et al.
914 Parasponia uses a mycorrhizal signaling receptor essential for arbuscle formation to control rhizobium nodule symbiosis.
915 The Magnitude and Duration of Late Ordovician–Early Silurian Glaciation
S. Finnegan et al.
916 Carbonate isotopes reveal a link between past ocean temperatures and mass extinction.
917 Hibernation in Black Bears: Independence of Metabolic Suppression from Body Temperature
Ø. Tøien et al.
918 Hibernating black bears suppress their metabolic rate to 25% of normal, but only slightly reduce their body temperature.
919 The Antiproliferative Action of LysM-Type Mycorrhizal Receptor Recruited for Rhizobium Symbiosis in Nonlegume Parasponia
R. Op den Camp et al.
920 Parasponia uses a mycorrhizal signaling receptor essential for arbuscle formation to control rhizobium nodule symbiosis.
921 The Magnitude and Duration of Late Ordovician–Early Silurian Glaciation
S. Finnegan et al.
922 Carbonate isotopes reveal a link between past ocean temperatures and mass extinction.
923 Hibernation in Black Bears: Independence of Metabolic Suppression from Body Temperature
Ø. Tøien et al.
924 Hibernating black bears suppress their metabolic rate to 25% of normal, but only slightly reduce their body temperature.
925 The Antiproliferative Action of LysM-Type Mycorrhizal Receptor Recruited for Rhizobium Symbiosis in Nonlegume Parasponia
R. Op den Camp et al.
926 Parasponia uses a mycorrhizal signaling receptor essential for arbuscle formation to control rhizobium nodule symbiosis.
arthropod exoskeletons can turn into fossils. Chemical bonds hold clues to how flexible our Sense of Smell? Do Vibrating Molecules Give Us Our Sense of Smell? The Mystery of the Stone Scorpion

SCIENCEONLINE

SPECIAL FEATURE
 Slideshow: 2010 Visualization Challenge
Browse the striking sights, sounds, and motion that represent the contest’s winning entries and honorable mentions. www.sciencemag.org/special/vis2010/

SCIENCEEXPRESS

www.scienceexpress.org
Crystal Structure of the Dynein Motor Domain A. P. Carter et al.
The structure reveals the functional elements of the dynein motor and suggests how they change conformation during motility. 10.1126/science.1202393
Mechanistic Basis of Resistance to PCBs in Atlantic Tomcod from the Hudson River I. Virgin et al.
Chronic pollution of the Hudson River, New York, results in rapid evolution of resistance to the pollutants. 10.1126/science.1197296
>> Science Podcast

The Biodiversity and Ecosystem Services Science-Policy Interface C. Perrings et al.
10.1126/science.1202400
Atmospheric pCO2 Perturbations Associated with the Central Atlantic Magmatic Province M. F. Schaller et al.
Emplacement of the Central Atlantic Magmatic Province 200 million years ago greatly elevated atmospheric CO2 concentrations. 10.1126/science.1199011

Revealing Extraordinary Intrinsic Tensile Plasticity in Gradient Nano-Grained Copper T. H. Fang et al.
Nanometer-sized grain copper confined by a graded substrate leads to a material with both high strength and high ductility. 10.1126/science.1200177

SCIENCENOW

www.sciencenow.org
Highlights From Our Daily News Coverage
Outcast Planets Could Support Life Geothermal activity may sustain hidden oceans on worlds ejected from their planetary systems. http://scim.ag/1oneplanet
The Mystery of the Stone Scorpion Chemical bonds hold clues to how flexible arthropod exoskeletons can turn into fossils. http://scim.ag/stone-scorpion

SCIENCESIGNALING

www.sciencesignaling.org
The Signal Transduction Knowledge Environment 15 February issue: http://scim.ag/ss15Feb11

RESEARCH ARTICLE: MUC1-C Oncoprotein Promotes STAT3 Activation in an Auto-Inductive Regulatory Loop R. Ahmad et al.
An inflammatory response of epithelial cells may be co-opted to promote cancer cell survival.

EDITORIAL GUIDE: Focus Issue—Conquering the Data Mountain N. R. Gough and M. B. Yaffe
Massive data sets create challenges for annotation, sharing, and presentation.

PERSPECTIVE: Effective Representation and Storage of Mass Spectrometry-Based Proteomic Data Sets for the Scientific Community J. V. Olsen and M. Mann
Proteomics data need a “reliability” tag to allow scientists to discriminate among data sets in public repositories.

PERSPECTIVE: The Potential Cost of High-Throughput Proteomics E. M. White
The production of false leads by automated curation of high-throughput proteomic data sets exerts a toll on biological research and advancement.

PERSPECTIVE: Integrating Multiple Types of Data for Signaling Research—Challenges and Opportunities H. S. Wiley
Easy integration of biological data has enormous potential to drive advances in biology and medicine.

PERSPECTIVE: Setting the Standards for Signal Transduction Research J. Saez-Rodriguez et al.
Standardized methods to link large, complex data sets to models are needed.

PRESENTATION: Visual Representation of Scientific Information B. Wong
Judicious choice of graphical representations can improve visual communication.

SCO NCECAREERS

www.sciencemag.org/career_magazine
Free Career Resources for Scientists
Tooling Up: Playing the Name Game D. Jensen
Need to find out who’s who inside a company? Here’s how the pros do it.
http://scim.ag/hopNC
Seeing Is Believing J. Carpenter
Trained as a chemical engineer, Jon Heras has moved on to become a professional science illustrator and animator.
http://scim.ag/106erj

SCIENTRANSLATIONAL MEDICINE

www.sciencetranslationalmedicine.org
Integrating Medicine and Science
16 February Issue: http://scim.ag/stm021611

COMMENTARY: Thinking Outside the Box—Fostering Innovation and Non-Hypothesis-Driven Research at NIH R. Aragon
NIH programs that fund the development of high-risk technologies contribute to translational research.

RESEARCH ARTICLE: Growth Hormone Receptor Deficiency Is Associated with a Major Reduction in Pro-Aging Signaling, Cancer, and Diabetes in Humans J. Guevara-Aguirre et al.
Ecuadorians who have a genetic mutation in the growth hormone receptor almost never die of cancer or diabetes complications.

RESEARCH ARTICLE: The Effect of Treatment Expectation on Drug Efficacy—Imaging the Analogic Benefit of the Opioid Remifentanil U. Bingel et al.
PERSPECTIVE: For Placebo Effects in Medicine, Seeing Is Believing R. L. Gollub and J. Kong
Non-invasive whole-brain imaging can enhance our understanding of brain-based placebo effects.

SCIENCEPODCAST

www.sciencemag.org/multimedia/podcast
Free Weekly Show
On the 18 February Science Podcast: pollutant-resistant fish, forensic genetics, the 2010 Visualization Challenge, and more.

SCIENCEINSIDER

news.sciencemag.org/scienceinsider
Science Policy News and Analysis

SPECIAL SERIES

http://scim.ag/genome10
Human Genome 10th Anniversary
A special month-long series explores the impacts of the genomics revolution on science and society.

SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005. Periodicals Mail postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 2011 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): $149 ($74 allocated to subscription). Domestic Institutional subscription (11 issues): $490; foreign postage extra: Mexico, Caribbean (surface mail 155); other countries (air assist delivery) 185. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request, GST #12324 80322. Publications Mail Agreement Number 1069642. Printed in the U.S.A. Change of address: Allow 4 weeks, giving old and new addresses and 8-digit account number. Postmaster: Send change of address to AAAS, P.O. Box 91276, Washington, D.C. 20090-6767. Single-copy sales: $15.00 current issue, $15.00 back issue prepay includes surface postage, bulk rates on request. Authorization to photocopy material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act is granted by AAAS to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that $25.00 per article is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923. The identification code for Science is 0036-8075. Science is indexed in the Reader’s Guide to Periodical Literature and in several specialized indexes.
Science 331 (6019), 817-956.