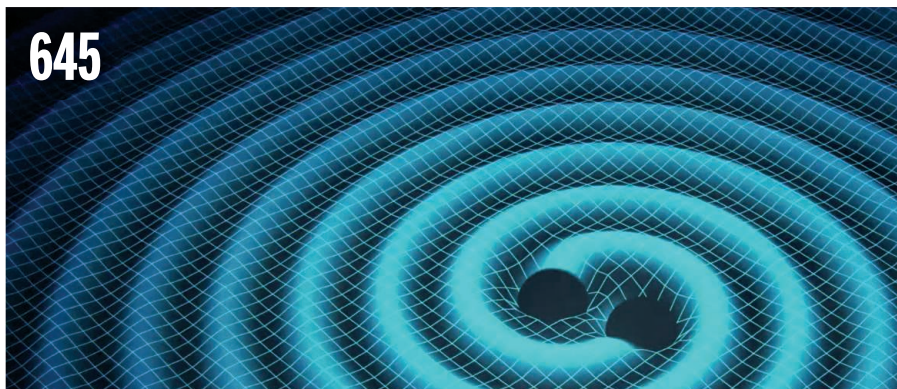


645



NEWS

IN BRIEF

642 News at a glance

IN DEPTH

645 TRIUMPH FOR GRAVITATIONAL WAVE HUNT

Observation made with newly detectable radiation clinches case for black holes *By A. Cho*

647 BENDY BUGS INSPIRE ROBOTICISTS

Bees, wasps, and cockroaches are built to survive bashing and squeezing *By E. Pennisi*

648 NEANDERTAL GENES LINKED TO MODERN DISEASES

DNA inherited from our extinct cousins boosts risk of depression, other disorders *By A. Gibbons*

► REPORT P. 737

649 RESEARCH CHIEF CUTS CLIMATE STUDIES, SETS NEW PRIORITIES

CSIRO to trim staff as it seeks closer alignment with industry *By L. Dayton*

650 RECORD OZONE HOLE MAY OPEN OVER ARCTIC IN THE SPRING

Unusual polar cold produces clouds that could help push ozone losses beyond 2011 mark, releasing extra UV radiation *By E. Hand*

651 A CRYSTAL BALL FOR CHEMICAL SAFETY

By comparing new chemicals to known compounds, toxicologists seek early hazard warning *By T. Rabesandratana*

FEATURE

652 AFTER THE ACCUSATION

A complex case of alleged sexual misconduct rattles a field and signals a cultural shift

By M. Balter

INSIGHTS

PERSPECTIVES

658 A NEW DIET FOR METHANE OXIDIZERS

Archaea that normally depend on sulfate-reducing bacteria can also grow alone *By A.-E. Rotaru and B. Thamdrup*

► REPORT P. 703

659 PATHOGEN TO POWERHOUSE

How did the precursors to the mitochondrion and the plastid evade host defense?

By S. G. Ball et al.

661 A UNIFYING MODEL OF EPIGENETIC REGULATION

Single-cell tracking reveals a common “algorithm” of operation used by chromatin regulators *By A. J. Keung and A. S. Khalil*

► REPORT P. 720

662 MODULATING PULMONARY INFLAMMATION

Neuroepithelial cells suppress pulmonary inflammation and alveolar remodeling

By J. A. Whitsett and E. E. Morrisey

► REPORT P. 707

664 CLIMATE CONFUSION AMONG U.S. TEACHERS

Teachers’ knowledge and values can hinder climate education

By E. Plutzer et al.

666 COPPER CATALYSIS IN A BLUE LIGHT

Visible light, copper, and a phosphine ligand combine for C-N bond formation at fully substituted chiral centers

By M. F. Greaney

► REPORT P. 681

667 IT TAKES TEAMWORK TO MODIFY CHROMATIN

The organization of constituents in a large chromatin-modifying complex reveals specific roles *By J. L. Workman*

► REPORT P. 725

668 FINDING AN ETHICAL PATH FORWARD FOR MITOCHONDRIAL REPLACEMENT

It is ethically permissible to initiate clinical investigations of mitochondrial replacement techniques in humans so long as significant conditions and restrictions are in place

By A. B. Claiborne et al.

670 (TORC)ING UP PURINE BIOSYNTHESIS

An enzyme complex coordinates metabolism and nucleotide production to fuel cell growth *By E. H. Ma and R. G. Jones*

► REPORTS PP. 728 & 733

BOOKS ET AL.

672 THE SECRET WORLD INSIDE YOU

R. DeSalle and S. Perkins, curators, reviewed by V. Thompson

673 UNINFORMED

By A. Lupia, reviewed by J. Junn

673 THE HUMAN FACE OF BIG DATA

S. Smolan, director

LETTERS

674 THE CRUSHING WEIGHT OF URBAN WASTE

By H. Yang et al.

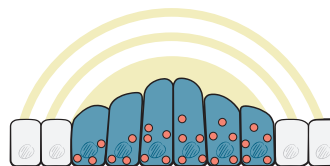
674 CHINA’S PARTIAL EMISSION CONTROL

By A. Lin et al.

675 MISGUIDED STRATEGY FOR MOSQUITO CONTROL

By V. M. Azevedo-Santos et al.

CONTENTS



662 & 707

Suppressing pulmonary inflammation

12 FEBRUARY 2016 • VOLUME 351 • ISSUE 6274

RESEARCH

IN BRIEF

676 From *Science* and other journals

REVIEW

679 GENE REGULATION

Retrotransposons as regulators of gene expression *R. A. Elbarbary et al.*

REVIEW SUMMARY; FOR FULL TEXT:
dx.doi.org/10.1126/science.aac7247

RESEARCH ARTICLE

680 GENE REGULATION

Lineage-specific enhancers activate self-renewal genes in macrophages and embryonic stem cells *E. L. Soucie et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:
dx.doi.org/10.1126/science.aad5510

REPORTS

681 PHOTOCATALYSIS

Asymmetric copper-catalyzed C-N cross-couplings induced by visible light *Q. M. Kainz et al.*

► PERSPECTIVE P. 666

684 PLANT IMMUNITY

Using decoys to expand the recognition specificity of a plant disease resistance protein *S. H. Kim et al.*

688 VALLEYTRONICS

Valley-polarized exciton dynamics in a 2D semiconductor heterostructure *P. Rivera et al.*

691 MATERIALS SCIENCE

On-chip and freestanding elastic carbon films for micro-supercapacitors *P. Huang et al.*

696 CARBON CYCLE

Enhanced seasonal CO₂ exchange caused by amplified plant productivity in northern ecosystems *M. Forkel et al.*



699 GLOBAL WATER CYCLE

A decade of sea level rise slowed by climate-driven hydrology *J. T. Reager et al.*

703 MICROBIAL PHYSIOLOGY

Artificial electron acceptors decouple archaeal methane oxidation from sulfate reduction *S. Scheller et al.*

► PERSPECTIVE P. 658

707 LUNG PHYSIOLOGY

Pulmonary neuroendocrine cells function as airway sensors to control lung immune response *K. Branchfield et al.*

► PERSPECTIVE P. 662

711 AUTOIMMUNITY

Pathogenic CD4⁺ T cells in type 1 diabetes recognize epitopes formed by peptide fusion *T. Delong et al.*

714 IMMUNOLOGY

Broadly targeted CD8⁺ T cell responses restricted by major histocompatibility complex E *S. G. Hansen et al.*

720 EPIGENETICS

Dynamics of epigenetic regulation at the single-cell level *L. Bintu et al.*

► PERSPECTIVE P. 661

725 TRANSCRIPTION

Structural basis for histone H2B deubiquitination by the SAGA DUB module *M. T. Morgan et al.*

► PERSPECTIVE P. 667

728 METABOLISM

mTORC1 induces purine synthesis through control of the mitochondrial tetrahydrofolate cycle *I. Ben-Sahra et al.*

► PERSPECTIVE P. 670; REPORT P. 733

733 BIOCHEMISTRY

Spatial colocalization and functional link of purinosomes with mitochondria *J. B. French et al.*

► PERSPECTIVE P. 670; REPORT P. 728

737 HUMAN GENOMICS

The phenotype legacy of admixture between modern humans and Neandertals *C. N. Simonti et al.*

► NEWS STORY P. 648; PODCAST

DEPARTMENTS

641 EDITORIAL

Economics of public safety
By Marcia McNutt

782 WORKING LIFE

Science in the shadows
By Andrew Scott

ON THE COVER



Bubbles floating on top of a foaming solution, showing the formation of thin films, which give rise to interference effects. Analysis of thin-film drainage and stability is an active research area with

many open questions. The Gordon Research Conference on Granular Matter will be held 24 to 29 July 2016 in Easton, Massachusetts. See page 742 for the Gordon Research Conference schedule and preliminary programs. *Photo: Wiebke Drenckhan, Université Paris-Sud, CNRS, France*

Science Staff	640
Gordon Research Conferences	742
New Products	775
Science Careers	776

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 © 2016 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): \$165 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$1522. Foreign postage extra: Mexico, Caribbean (surface mail) \$55; other countries (air assist delivery) \$89. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request. GST #R1254 88122. Publications Mail Agreement Number 1069624. 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 96178, Washington, DC 20090-6178. Single-copy sales: \$15.00 current issue, \$20.00 back issue prepaid 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 \$35.00 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

351 (6274)

Science **351** (6274), 641-782.

ARTICLE TOOLS

<http://science.sciencemag.org/content/351/6274>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. The title *Science* is a registered trademark of AAAS.

Copyright © 2016 The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works.