

12 JUNE 2015 • VOLUME 348 • ISSUE 6240



NEWS

IN BRIEF

1180 Roundup of the week's news

IN DEPTH

1183 AMID PANIC, A CHANCE TO LEARN ABOUT MERS

South Korea's explosive outbreak gives scientists fresh opportunities to study the virus *By K. Kupferschmidt*

1184 SIGNS OF ANCIENT PROTEINS SEEN INSIDE DINOSAUR BONES

Can soft tissue survive 75 million years? *By R. F. Service*

1185 DINOSAUR CLIMATE PROBED

Ancient lake sediments in China record epic temperature swings, biotic turnover before the mass extinction *By J. Qiu*

1186 BRAIN IMPLANT TRIALS RAISE ETHICAL CONCERNS

NIH workshop delves into challenges of testing invasive neuromodulation technology *By E. Underwood*

1187 THE SCIENTIST BEHIND THE 'PERSONHOOD' CHIMPS

Susan Larson defends her work with two research chimpanzees at the heart of a legal battle *By D. Grimm*

1188 HIV FAMILY TREES REVEAL VIRAL SPREAD

New studies could aid public health efforts *By J. Cohen*

FEATURES

1190 BUSINESS DECISIONS

What does it take for an academic scientist to become an entrepreneur? Here are some of their stories *By J. Mervis* > EDITORIAL P. 1179; PERSPECTIVES P. 1200; QUIZ

1194 GIVE US YOUR BEST PITCH

Two venture capitalists explain the investor's mindset *By J. Cohen* ► EDITORIAL P. 1179; PERSPECTIVES P. 1200

1196 GOT A STARTUP? RENT A BENCH

Biotech incubators such as LabCentral are lowering barriers to entrepreneurship *By T. Gura* ► EDITORIAL P. 1179; PERSPECTIVES P. 1200

INSIGHTS

PERSPECTIVES

ENTREPRENEURSHIP

1200 Financing experiments By R. Nanda and M. Rhodes-Kropf

1200 Founders and joiners By M. Roach and H. Sauermann

1201 Cash from the crowd By M. G. Colombo et al.

1202 Intangible but bankable By Y. V. Hochberg et al.

1202 Accelerators and ecosystems By Y. V. Hochberg and D. C. Fehder

 1203 Linking and leveraging By F. Murray and S. Stern
EDITORIAL P. 1179; NEWS STORIES PP. 1190, 1194, & 1196



1204 EARTHQUAKES INDUCED BY FLUID INJECTIONS

Controlling fluid injection may mitigate the extent of induced earthquakes *By F. H. Cornet* ▶ REPORT P. 1224

1207

immunity

Bacterial metabolite drives

1205 MAKING HEADS OR TAILS OF SHATTERED CHROMOSOMES

Isolation of lagging chromosomes in micronuclei causes catastrophic genome rearrangements *By W. P. Kloosterman*

1207 MICROBIAL METABOLITE TRIGGERS ANTIMICROBIAL DEFENSE

Bacteria can activate innate immune responses by releasing a metabolite that enters host cells *By S. W. Brubaker and D. M. Monack*

▶ REPORT P. 1251

1208 BRINGING PGE2 IN FROM THE COLD

A small molecule that prevents the breakdown of a prostaglandin promotes tissue regeneration *By G. A. FitzGerald* ▶ RESEARCH ARTICLE P. 1223

1210 CAN CLIMATE FEEL THE PRESSURE?

Changes in atmospheric pressure may be an important long-term climate forcing mechanism *By D. J. Peppe and D. L. Royer*

▶ REPORT P. 1238

1211 ECONOMICAL ROUTES TO COLLOIDAL NANOCRYSTALS

A new precursor library yields highquality quantum dots for device applications *By Z. Hens* ▶ REPORT P. 1226

1212 VISUAL TRACKING IN THE DEAD OF NIGHT

Even in dim light, hawkmoths can track the motions of wind-tossed flowers *By E. Warrant* REPORT P. 1245

BOOKS ET AL.

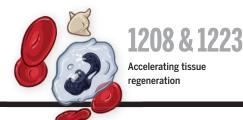
1214 THE OUTSOURCER

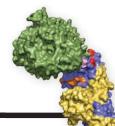
By D. C. Sharma, reviewed by S. Banerjee

1215 THE END OF PLENTY

By J. K. Bourne Jr., reviewed by J. L. Steiner

Science Staff	1178
New Products	1274
Science Careers	1275





1260 & 1264

Keeping the cell cycle in check

LETTERS

1216 DEFINING THE HAPPINESS GAP *By A. Van Hiel* et al.

1216 RESPONSE By S. P. Wojcik et al.

1216 PROTECT RESEARCHERS FROM HARASSMENT

By S. E. Hyman and M. E. Goldberg

1217 TECHNICAL COMMENT ABSTRACTS



IN BRIEF

1218 From Science and other journals

REVIEWS

ECOLOGY

1221 Aquatic animal telemetry: A panoramic window into the underwater world *N. E. Hussey* et al. REVIEW SUMMARY; FOR FULL TEXT: dx.doi.org/10.1126/science.1255642 ► PODCAST

1222 Terrestrial animal tracking as an eye on life and planet *R. Kays* et al. REVIEW SUMMARY; FOR FULL TEXT: dx.doi.org/10.1126/science.aaa2478

RESEARCH ARTICLE

1223 TISSUE REGENERATION

Inhibition of the prostaglandindegrading enzyme 15-PGDH potentiates tissue regeneration *Y. Zhang* et al. RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: dx.doi.org/10.1126/science.aaa2340

▶ PERSPECTIVE P. 1208

REPORTS

1224 INDUCED SEISMICITY

Seismicity triggered by fluid injectioninduced aseismic slip *Y. Guglielmi* et al.

▶ PERSPECTIVE P. 1204



1226 NANOMATERIALS

A tunable library of substituted thiourea precursors to metal sulfide nanocrystals *M. P. Hendricks* et al. PERSPECTIVE P. 1211

1230 ELECTROCHEMISTRY

High-performance transition metaldoped Pt_3Ni octahedra for oxygen reduction reaction *X. Huang* et al.

1234 SOLAR CELLS

High-performance photovoltaic perovskite layers fabricated through intramolecular exchange *W. S. Yang* et al.

1238 CLIMATE CHANGE

Long-term climate forcing by atmospheric oxygen concentrations *C. J. Poulsen* et al. PERSPECTIVE P. 1210

1241 BRAIN NETWORKS

Correlated gene expression supports synchronous activity in brain networks *J. Richiardi* et al.

1245 INSECT FLIGHT

Luminance-dependent visual processing enables moth flight in low light *S. Sponberg* et al. > PERSPECTIVE P. 1212

1248 BIOGEOGRAPHY

The dispersal of alien species redefines biogeography in the Anthropocene *C. Capinha* et al.

1251 INNATE IMMUNITY

Cytosolic detection of the bacterial metabolite HBP activates TIFA-dependent innate immunity *R. G. Gaudet* et al. PERSPECTIVE P. 1207

1255 PHYSIOLOGY

Regulation of breathing by CO₂ requires the proton-activated receptor GPR4 in retrotrapezoid nucleus neurons *N. N. Kumar* et al.

CELL DIVISION CYCLE

- **1260** Kinetochore attachment sensed by competitive Mps1 and microtubule binding to Ndc80C *Z. Ji* et al.
- **1264** Competition between MPS1 and microtubules at kinetochores regulates spindle checkpoint signaling *Y. Hiruma* et al.

1268 SEX DETERMINATION

A male-determining factor in the mosquito *Aedes aegypti A. B. Hall* et al.

DEPARTMENTS

1179 EDITORIAL The entrepreneurial gardeners *By Iqbal Quadir* ► NEWS STORIES PP. 1190, 1194, & 1196; PERSPECTIVES P. 1200

1282 WORKING LIFE

You'll be OK By Michelle E. Portman

ON THE COVER



With governments pushing for innovations to bolster economies and universities eager to make money off of technology transfer, academic scientists are increasingly considering how to commercialize

their research discoveries—and others are studying what makes such entrepreneurship flourish. See pages 1179, 1190, 1194, 1196, and 1200. *Illustration: Davide Bonazzi*

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 © 2015 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): \$153 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$1282; Foreign postage extra: Mexico, Caribbean (surface mail) \$553 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$1282; Foreign postage extra: Mexico, Caribbean (surface mail) \$553 (sther countries) (air assist delivery) \$85, First Audent, and emeritus rates on request. Caradian rates with 165 ravailable upon request, CaraTivate Pails \$253 (sther countries) (air assist delivery) \$85, First Audent, and emeritus rates on request. Caradian rates with 165 ravailable upon request, Caradian rates with 165 ravailable upon request, Caradian rates with 165 ravailable upon request. Caradian rates with 165 ravailable upon request, Caradian rates reporting the reprint reprint reprint or reprint reprint reprint rates reprint rates reprint rates reprint rates reprint rates reprint reprint rates reprint rates reprint rates reprint reprint rates reprint rates reprint rates reprint rates reprint reprint rates reprint rates reprint reprint rates reprint rates reprint rates reprint rates reprint rates reprint reprint rates reprint rates reprint rates reprint reprint rates reprint rates reprint rates reprint rates represent rates r



348 (6240) (June 12, 2015) *Science* **348** (6240), 1179-1282.

Editor's Summary

This copy is for your personal, non-commercial use only.

Article Tools	Visit the online version of this article to access the personalization and article tools: http://science.sciencemag.org/content/348/6240
Permissions	Obtain information about reproducing this article: http://www.sciencemag.org/about/permissions.dtl

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published weekly, except the last week in December, by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. Copyright 2016 by the American Association for the Advancement of Science; all rights reserved. The title *Science* is a registered trademark of AAAS.