

Tomorrow's Earth
pp. 287 & 304

Developed economies enable
gender differences p. 307

Opium poppy genome reveals
metabolic secrets p. 343

Science

\$15
19 OCTOBER 2018
sciencemag.org

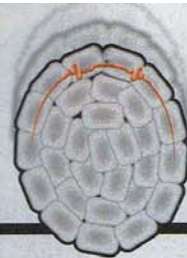
AAAS



NOT SO NUTS

Promise and risk
in treating food allergies
with their triggers

p. 278



Jair Bolsonaro, front-runner for Brazil's presidency, is a scary prospect to some.

NEWS

IN BRIEF

268 News at a glance

IN DEPTH

271 SCIENTISTS WHO BEAT THE ODDS SEEK VICTORY IN NOVEMBER

Candidates, all Democrats, learned in the primaries that a science background by itself does not sway voters

By J. Mervis

273 SCIENTISTS, ENVIRONMENTALISTS BRACE FOR BRAZIL'S RIGHT TURN

Country's likely next president promises R&D investment but favors development over climate and biodiversity

By H. Escobar

274 PLANET HUNTER NEARS ITS END

Kepler space telescope found trove of exoplanets

By D. Clery

275 NASA'S asteroid explorer Dawn soon to go dark

By P. Voosen

276 CHINA NARROWS U.S. LEAD IN R&D SPENDING

But lagging support for basic research may hinder ambitions to become a science superpower

By D. Normile

277 OUTBREAKS OF POLIOLIKE DISEASE POSE A PUZZLE

An enterovirus may cause sudden paralysis in children, but proof is elusive

By G. Vogel

FEATURE

278 TOXIN OR TREATMENT?

Ingesting small doses of peanut products guards against allergic reactions—but an undercurrent of anxiety persists

By J. Couzin-Frankel

▶ VIDEO

INSIGHTS

POLICY FORUM

284 ENDANGERED SPECIES RECOVERY: A RESOURCE ALLOCATION PROBLEM

Explicit articulation of values and objectives is critical

By L. R. Gerber et al.

PERSPECTIVES

287 WELL-BEING IN METRICS AND POLICY

Well-being metrics provide key insights for economic and environmental sustainability

By C. Graham et al.

▶ REVIEW P. 304

289 COMPUTATIONAL COMPLEXITY, STEP BY STEP

For certain linear algebra tasks, quantum circuits are proven to outperform classical ones

By A. Montanaro

▶ REPORT P. 308

290 SUPRACELLULAR CONTRACTIONS PROPEL MIGRATION

Cytoskeletal cords connecting cells at the back of cell groups enable directional migration

By I. Adameyko

▶ REPORT P. 339

291 TOWARD HUMAN EGG-LIKE CELLS IN VITRO

Human precursor egg-like cells are produced in mouse ovary organoids to study infertility

By M. E. Gill and A. H. F. M. Peters

▶ REPORT P. 356

292 A FRIENDLY DANGER

Immune cell receptor DNGR-1 limits inflammatory tissue damage

By F. Salazar and G. D. Brown

▶ REPORT P. 351

294 EARTH'S SOFT HEART

A modern seismological method raises questions about the properties of Earth's inner core

By J. C. E. Irving

▶ REPORT P. 329

BOOKS ET AL.

295 THE FAMILIAR POLITICS OF THE FINAL FRONTIER

Earth's economic woes haunt the first lunar colony in a fictional near future

By J. Trapani

296 RECOGNIZING THE ROLE OF SKILLED IMMIGRATION

A scholar examines the rewards and shortcomings of global talent in the United States

By K. Shih

LETTERS

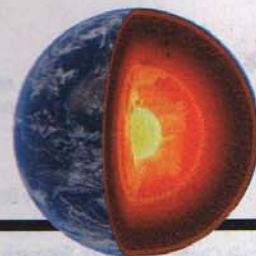
297 ETHICS AND POLITICS OF CONSERVATION TRIAGE

By A. Park

297 NEW NSF POLICY WILL STIFLE INNOVATION

By H. L. Eisthen et al.

CONTENTS



294 & 329

Core constraints

19 OCTOBER 2018 • VOLUME 362 • ISSUE 6412

298 CHINA'S FIGHT AGAINST SOIL POLLUTION

By Y. Zhou and Y. Liu

298 TECHNICAL COMMENT ABSTRACTS

RESEARCH

IN BRIEF

300 From *Science* and other journals

REVIEWS

303 QUANTUM INFORMATION

Quantum internet: A vision for the road ahead *S. Wehner et al.*

REVIEW SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.aam9288](https://doi.org/10.1126/science.aam9288)

304 CONSERVATION

Landscapes that work for biodiversity and people *C. Kremen and A. M. Merenlender*

REVIEW SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.aau6020](https://doi.org/10.1126/science.aau6020)
▶ PERSPECTIVE P. 287

RESEARCH ARTICLES

ION CHANNELS

305 Structure of the human voltage-gated sodium channel Na_v1.4 in complex with β1 *X. Pan et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.aau2486](https://doi.org/10.1126/science.aau2486)

306 Structural basis for the modulation of voltage-gated sodium channels by animal toxins *H. Shen et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.aau2596](https://doi.org/10.1126/science.aau2596)

307 SOCIAL SCIENCE

Relationship of gender differences in preferences to economic development and gender equality *A. Falk and J. Hermle*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.aas9899](https://doi.org/10.1126/science.aas9899)

REPORTS

308 QUANTUM COMPUTING

Quantum advantage with shallow circuits *S. Bravyi et al.*

▶ PERSPECTIVE P. 289

311 ORGANIC CHEMISTRY

Chiral Lewis acids integrated with single-walled carbon nanotubes for asymmetric catalysis in water *T. Kitano et al.*

315 OPTICAL METAMATERIALS

Hierarchically porous polymer coatings for highly efficient passive daytime radiative cooling *J. Mandal et al.*

319 CHEMICAL SENSING

Aptamer-field-effect transistors overcome Debye length limitations for small-molecule sensing *N. Nakatsuka et al.*

324 GRAPHENE

A family of finite-temperature electronic phase transitions in graphene multilayers *Y. Nam et al.*

329 GEOPHYSICS

Shear properties of Earth's inner core constrained by a detection of *J* waves in global correlation wavefield *H. Tkalečić and T.-S. Pham*

▶ PERSPECTIVE P. 294

333 TOPOLOGICAL MATTER

Evidence for Majorana bound states in an iron-based superconductor *D. Wang et al.*

336 MAGNETIC RESONANCE

Hyperfine interaction of individual atoms on a surface *P. Willke et al.*

339 NEURODEVELOPMENT

Supracellular contraction at the rear of neural crest cell groups drives collective chemotaxis *A. Shellard et al.*

▶ PERSPECTIVE P. 290

343 PLANT SCIENCE

The opium poppy genome and morphinan production *L. Guo et al.*

347 SCIENCE AND SOCIETY

Realizing private and practical pharmacological collaboration *B. Hie et al.*

351 IMMUNOLOGY

DNCR-1 in dendritic cells limits tissue damage by dampening neutrophil recruitment *C. del Fresno et al.*

▶ PERSPECTIVE P. 292

356 GERM CELL DEVELOPMENT

Generation of human oogonia from induced pluripotent stem cells in vitro *C. Yamashiro et al.*

▶ PERSPECTIVE P. 291

DEPARTMENTS

267 EDITORIAL

Network for safe and secure labs
By James W. Le Duc and Zhiming Yuan

370 WORKING LIFE

Leaving my comfort zone
By Jet-Sing M. Lee

ON THE COVER



Between 1 and 2% of people in the United States are allergic to peanuts. A new treatment strategy exposes affected children to peanuts or peanut proteins in hopes of desensitizing their immune system. This approach has gained popularity as doctors in private practice offer it and two commercial products are nearing potential approval. But it also comes with risks and uncertainties. See page 278.
Photo: Myurgatoryyears/iStock.com

| | |
|-----------------------|-----|
| Science Staff | 266 |
| New Products | 361 |
| Science Careers | 364 |

SCIENCE (ISSN 0036-8075) is published weekly on Friday, except 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 © 2018 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership, including subscription (12 months): \$165 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$1808; 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 #125488122. 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 each plus shipping and handling; bulk rate on request. Authorization to reproduce 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 others who use Copyright Clearance Center (CCC) Pay-Per-Use services 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.