

## **EDITORIAL**

## **564** The new reality for American academia

-H. H. Thorp

## **NEWS**

## **566** Trump proposes massive cuts to research spending

Funding for key science agencies would be cut in half under 2026 budget plan -Science News staff

## **568** NIH bans future grant sharing with foreign scientists

Stirring outrage, halt on new "subawards" could complicate international projects including large clinical trials

-J. Cohen and M. Wadman

## 570 'Unethical' Al research on Reddit under fire

Ethics experts raise concerns over consent and study design -C. O'Grady

## **571** NIH dismantles training pipeline for **Deaf researchers**

The one-of-a-kind initiative offered support from high school to postdoctoral levels −P. Jacobs

## **572** Trump slashes studies of online lies-and how to counter them

Hundreds of grants get axed in a research field where the United States was a global leader -K. Kupferschmidt

## 574 'Data manipulations' alleged in study that led to Microsoft's quantum chip

Internal emails from 2021 reveal tension among researchers hunting for elusive Majorana particle —A. Orrall, Retraction Watch

## **FEATURES**

# **576** How Trump upended

A chaotic 100-day push to remake federal research will have lasting consequences -D. Malakoff PODCAST

## 578 NIH under siege

Agency scientists say Trump's assault has left the health institutes demoralized and diminished, their future uncertain -J. Kaiser

## **581** The human impact

As the second Trump administration sends U.S. science into upheaval, countless researchers are fighting for their futures - Science News staff

## **584** The next **100** days

Budget fights and court rulings could shape Trump's science agenda –J. Mervis

## COMMENTARY

#### **PERSPECTIVES**

## **586** Flowers with bad breath

How an old gene acquired a new function to exploit an insect's sense of smell -L. Caputi and S. E. O'Connor RESEARCH ARTICLE p. 65

Science 8 MAY 2025

# 588 Replicating a tissue with sound waves

Ultrasound waves can penetrate thick tissues and print implants on demand inside a body —X. Kuang RESEARCH ARTICLE p. 616

# **589 Extending ketamine's** antidepressant effects

Boosting an intracellular signaling pathway preserves the antidepressant response to ketamine —K. Hashimoto RESEARCH ARTICLE p. 646

## **591** An obstacle course for molecules

The precise size and shape of a molecule are determined on a patterned microchip—R. H. Goldsmith and B. A. Brewster
RESEARCH SUMMARY p. 608

# **592** The hunt for common tumor antigens

Pancreatic cancer cells express cryptic peptides shared across patients that may be therapeutic targets —D. A. Tuveson RESEARCH SUMMARY p. 607

#### **BOOKS ET AL.**

# **594** Quieting inflammation with a shock to the system

A physician-scientist touts the therapeutic potential of vagus nerve stimulation —E. Dolgin

# **595** Forget the future, Al is causing harm now

Hypothetical threats posed by the technology distract from ongoing damage, argue a pair of authors —P. M. Tagarro

#### **LETTERS**

# **596** WHO and USAID budget cuts hurt the US

-M. S. Jalali

# **596** US policies undermine climate change efforts

-C. Wang and J. Yang

# **597** Science's enduring role in climate policy

-Y. T. Yang

## **ANALYSIS**

## **POLICY ARTICLE**

# 599 Young people's social mobility expectations in an unequal world

Adolescents' expectations of upward mobility are higher where income disparities are more pronounced —F. Borgonovi and A. Pokropek

## RESEARCH

## **HIGHLIGHTS**

**602** From *Science* and other journals

## **RESEARCH SUMMARIES**

## Microbiology

**605** Sedentary chromosomal integrons as biobanks of bacterial antiphage defense systems

—B. Darracq *et al.* 

**606** Mobile integrons encode phage defense systems

—N. Kieffer et al.

#### 607 Cancer

Pancreatic cancer–restricted cryptic antigens are targets for T cell recognition —Z. A. Ely *et al.*PERSPECTIVE p. 592

## 608 Biophysics

Measurements of molecular size and shape on a chip —X. Zhu *et al.* **PERSPECTIVE p. 591** 

## 609 Sustainability

Reducing emissions and air pollution from informal brick kilns: Evidence from Bangladesh
—N. Brooks *et al.* 

#### **RESEARCH ARTICLES**

#### **610 Robotics**

Physical synchronization of soft self-oscillating limbs for fast and autonomous locomotion

—A. Comoretto *et al.* 

## **616 3D printing**

Imaging-guided deep tissue in vivo sound printing

—E. Davoodi et al.

PERSPECTIVE p. 588

## **624** Magnetism

Pseudogap and Fermi arc induced by Fermi surface nesting in a centrosymmetric skyrmion magnet —Y. Dong et al.

## **631** Organic chemistry

1,2-Acyl transposition through photochemical skeletal rearrangement of 2,3-dihydrobenzofurans—R. T. Steele et al.

#### 639 Solar cells

Spontaneous formation of robust two-dimensional perovskite phases —S. Tan *et al.* 

## **646** Neuroscience

Enhanced ERK activity extends ketamine's antidepressant effects by augmenting synaptic plasticity —Z. Z. Ma et al.

PERSPECTIVE p. 589

## **656** Plant evolution

Convergent acquisition of disulfide-forming enzymes in malodorous flowers

—Y. Okuyama et al.

PERSPECTIVE p. 586

#### 662 Paleontology

Shishania is a chancelloriid and not a Cambrian mollusk —J. Yang et al.

## 665 Protein design

De novo design of porphyrincontaining proteins as efficient and stereoselective catalysts —K. Hou *et al.* 

## **WORKING LIFE**

# 674 Moving past the detractors

-L. N. Chaplin

562 Science Staff671 Science Careers

## **ON THE COVER**



Coal-fired brick kilns have proliferated in Bangladesh to meet the demand for building materials from the rapidly growing economy. Regulations have struggled to keep up with the growth of informal brick manufacturing. Pollution from brick kilns worsens air quality, accelerates global climate change, and harms human health. Practical interventions can reduce these harms. See page 609. Photo: Probal Rashid/ZUMA Press



## **ON THE PODCAST**

Analyzing music from ancient Greece and Rome, and the 100 days that shook science

Science serves as a forum for discussion of important issues related to the advancement of science by publishing material on which a consensus has been reached as well as including the presentation of minority or conflicting points of view. Accordingly, all articles published in Science—including editorials, news, commentary, and book reviews—are signed and reflect the individual views of the authors and not official points of view adopted by AAAS or the individual views of the Authors are affiliated. Science (ISSN 0036-8075) is published weekly on Thursday, except last week in December, by the American Association for the Advancement of Science 1200 New York Avenue, NW, Washington, DC 2005. Periodicals mail postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 2025 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): \$2865; Foreign postage extra: Air assist delivery: \$135. 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 2009–6178. Single-copy sales: \$15 each plus shipping and handling available from backissues.science.org; 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 can be obtained through the Copyright Clearance Center (CCC), www.copyright.com. The identification code for Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.

Science 8 MAY 2025 561