

CONTENTS

24 May 2018 / Vol 557 / Issue No 7706

THIS WEEK

EDITORIALS

467 POLICY

Clarity needed on data protection

Use personal information with integrity

467 ENVIRONMENT

Climate costs

Action against fossil-fuel use is becoming more urgent

468 ENERGY

Road to nowhere

Help electric cars take priority in sales

WORLD VIEW

469 Transparency rule is a Trojan Horse

Naomi Oreskes

EPA proposal distorts trappings of science

RESEARCH HIGHLIGHTS



470 SELECTIONS FROM THE SCIENTIFIC LITERATURE

Dinosaur nests / Europa's geyser / Ice skating / Worm-eating mice / Short stings / Cold cures

SEVEN DAYS

472 THE NEWS IN BRIEF

EU funding / UK visas / Stem-cell study / Russian minister / Migraine medicine

CAREERS

599 WORKING ABROAD

Globetrot for science

How to navigate cultural variances

601 BACK STORY

Brain stimulator

A materials scientist uses nanowire solar cells to manipulate brain signals

SPOTLIGHT

531 HONG KONG

Building the future

Hong Kong faces barriers in pursuit of a new science economy.

NEWS IN FOCUS

475 PUBLIC HEALTH

Experimental Ebola drugs poised for test in Democratic Republic of the Congo

476 POLICY

Indonesian crackdown on foreign scientists draws protest

477 GEOLOGY

Hawaiian volcano eruption sends scientists scrambling for data



478 SPACE

Chinese probe heads for Moon's far side

479 PUBLISHING

Negotiators across Europe work on brokering open-access contracts

FEATURE



IMMUNOLOGY

Gut reaction

Can gut microbes boost the effectiveness of cancer drugs? **PAGE 482**

TECHNOLOGY

595 IMMUNOLOGY

Single-cell approaches to immune profiling

Probing cell mechanisms with protein- and sequencing-based technologies

COMMENT



SUSTAINABILITY

Learn from global south

Western bias limits progress in coping with environmental change, argues Harini Nagendra **PAGE 485**

BOOKS & ARTS



489 HEREDITY

Beyond the gene

Nick Lane

490 TECHNOLOGY

Can robots make art?

Laura Spinney

491 BOOKS IN BRIEF

CORRESPONDENCE

492 Coral reefs / Lithium-mining perils / Risks of rare metals / Chinese translations

FUTURES

604 DNA exchange

D. A. Xiaolin

Spies



CONTENTS

24 May 2018 / Vol 557 / Issue No 7706

RESEARCH

NEW ONLINE

- 493 Papers published this week at nature.com

NEWS & VIEWS

494 ASTROPHYSICS

Pulsars seen through a new lens

The brightness of pulsars can be boosted by plasma lensing

Jason Hessels [SEE LETTER P.522](#)

495 DEVELOPMENTAL BIOLOGY

Rethinking WNT signalling

WNT signalling can occur independent of LGR proteins

Jessica A Lehoczy & Clifford J Tabin

[SEE LETTER P.564](#)

496 ANTHROPOLOGY

Sizing up human brain evolution

Computer model identifies the key factors driving brain-size evolution

Richard McElreath [SEE LETTER P.554](#)

498 FORUM: ECONOMICS

The cost of a warming climate

Assessing a method of estimating economic impacts of climate change

Wolfram Schlenker, Maximilian

Auffhammer [SEE LETTER P.549](#)

499 NEURODEGENERATION

Sabotage by the brain's supporting cells

The intracellular milieu dictates α -synuclein properties

Lary C Walker [SEE LETTER P.558](#)

500 CANCER

Subtype switch foils pancreatic tumours

KDM6A mutations causes epigenetic remodelling in pancreatic tumours

Fieke Froeling & David Tuveson

501 CONDENSED-MATTER PHYSICS

Plasmon propagation pushed to the limit

Observations of long-lived plasmons in graphene

Justin C W Song [SEE LETTER P.530](#)

ARTICLES

- 503 **MICROBIOLOGY** Mutant phenotypes for thousands of bacterial genes of unknown function
M N Price et al.

- 510 **MOLECULAR BIOLOGY** ANKRD16 prevents neuron loss caused by an

ON THE COVER

Driving force

Taxis are a common mode of transport in most cities, but is the size of the fleet optimal for the number and nature of trips undertaken? In this issue, Mohammad Vazifeh and colleagues reveal that it is possible to deploy 30–40% fewer cabs without causing delays to passengers or requiring them to share taxis. The team used a network-based approach in which the individual vehicles are shared across the transport network, and tested their scheme against the millions of taxi trips taken in New York City over one year. [PAGE 534](#)

editing-defective tRNA synthetase
M-N Vo et al.

- 516 **RNAi** SWI2/SNF2 ATPase CHR2 remodels pri-miRNAs via Serrate to impede miRNA production
Z Wang et al.

LETTERS

- 522 **ASTROPHYSICS** Pulsar emission amplified and resolved by plasma lensing in an eclipsing binary
R Main et al. [SEE N&V P.494](#)
- 526 **ASTRONOMY** An absolute sodium abundance for a cloud-free 'hot Saturn' exoplanet
N Nikolov et al.
- 530 **CONDENSED-MATTER PHYSICS** Fundamental limits to graphene plasmonics
G X Ni et al. [SEE N&V P.501](#)
- 534 **APPLIED MATHEMATICS** Addressing the minimum fleet problem in on-demand urban mobility
M M Vazifeh, P Santi, G Resta, S H Strogatz & C Ratti

- 539 **MATERIALS SCIENCE** Self-reporting and self-regulating liquid crystals
Y-K Kim, X Wang, P Mondkar, E Bukusoglu & N L Abbott

- 545 **EARTH SCIENCES** Rapid emergence of subaerial landmasses and onset of a modern hydrologic cycle 2.5 billion years ago
I N Bindeman et al.

- 549 **ECONOMICS** Large potential reduction in economic damages under UN mitigation targets
M Burke, W M Davis & N S Diffenbaugh
[SEE N&V P.498](#)

- 554 **ANTHROPOLOGY** Inference of ecological and social drivers of human brain-size evolution
M González-Forero & A Gardner
[SEE N&V P.496](#)

- 558 **NEURODEGENERATION** Cellular milieu imparts distinct pathological α -synuclein strains in α -synucleinopathies
C Peng et al. [SEE N&V P.499](#)

- 564 **DEVELOPMENTAL BIOLOGY** RSP02 inhibition of RNF43 and ZNRF3 governs limb development independently of LGR4/5/6
E Szenker-Ravi et al.
[SEE N&V P.495](#)

- 570 **VIROLOGY** Mxra8 is a receptor for multiple arthritogenic alphaviruses
R Zhang et al.

- 575 **TUMOUR IMMUNOLOGY** Bystander CD8⁺ T cells are abundant and phenotypically distinct in human tumour infiltrates
Y Simoni et al.

- 580 **IMMUNOLOGY** Microbial signals drive pre-leukaemic myeloproliferation in a Tet2-deficient host
M Meisel et al.

- 585 **CELL BIOLOGY** KLHL22 activates amino-acid-dependent mTORC1 signalling to promote tumorigenesis and ageing
J Chen et al.

- 590 **STRUCTURAL BIOLOGY** Structural basis for gating pore current in periodic paralysis
D Jiang et al.

COVER IMAGE: SNOWIERIA ZHANG, IRENE DE LA TORRE, FABIO DUARTE/MIT SENSEABLE CITY LAB