

CONTENTS

23 August 2012 / Vol 488 / Issue No 7412

THIS WEEK

EDITORIALS

425 ECOLOGY

Social dimensions to biodiversity

There's more to protecting the environment than just science

425 ASTRONOMY

The name game

Nomenclature is no laughing matter

WORLD VIEW

431 Sometimes science must give way to religion

Daniel Sarewitz

There is something to be learnt by going beyond the rational

RESEARCH HIGHLIGHTS

432 SELECTIONS FROM THE SCIENTIFIC LITERATURE



Solar dark matter / Herpes spreading in zoos / Protein blocks spermatogenesis / Self-healing graphene / Protein clearance from the brain

SEVEN DAYS

434 THE NEWS IN BRIEF

Court upholds Myriad's gene patents / NASA plans another Mars landing / Dallas declares emergency over West Nile virus / Construction on Amazon dam halted again

CAREERS

545 CAREER DEVELOPMENT

What's your type?

Personality tests can help you find your niche

547 TURNING POINT

The 'two-body' problem is a given of academic life, says geneticist Sohini Ramachandran

NEWS IN FOCUS

437 ENVIRONMENTAL SCIENCE

The end is nigh for Canada's experimental lake system

439 GENETICS

Older fathers pass on the most genetic mutations to their children



440

ASTRONOMY

Cuts loom for US telescopes

441

US ELECTION

The research landscape as seen by Romney's running mate

442 PLANETARY SCIENCE

Astronomical row erupts over names and coordinates

443 POLICY

Big business stumps up cash to keep labels off GM food

FEATURES

448 COMPUTATIONAL SOCIAL SCIENCE

Making the links

Social science is being transformed by the wealth of data offered by the digital age

NEUROSCIENCE

Mind over matter

Yoshiki Sasai reveals how to grow an eye in a dish
PAGE 444



COMMENT

451 SUCCESSFUL COLLABORATIONS

When international partnerships go wrong

David Southwood

Economies of scale make multinational research essential — but hard work

454 BIODIVERSITY MANAGEMENT

Listen to the voices of experience

Esther Turnhout et al.

The IPCC's troubles hold lessons for conservationists' new body

BOOKS & ARTS

456 ANATOMY

Flayed, pickled, plastinated

Ewen Callaway

457 FICTION

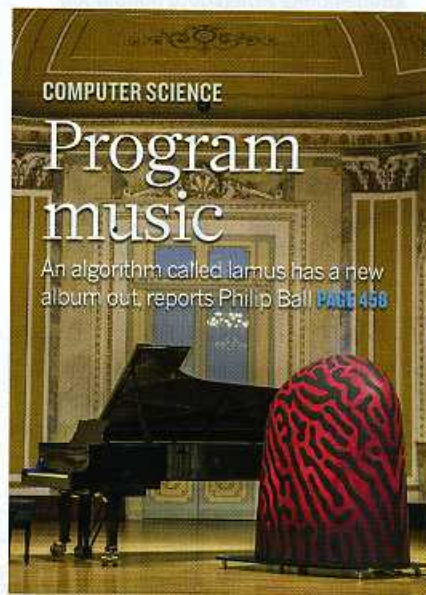
New moral arbiters

Jennifer Rohn

COMPUTER SCIENCE

Program music

An algorithm called Iamus has a new album out, reports Philip Ball **PAGE 458**



CORRESPONDENCE

459 Olympic swims analysed / Ethical organ transplantation

OBITUARY

460 Sally Ride (1951–2012)

Maggie McKee

FUTURES

550 The write rules

Freya Morris

CONTENTS

23 August 2012 / Vol 488 / Issue No 7412

RESEARCH

NEW ONLINE

461 Papers published this week at nature.com

NEWS & VIEWS

462 FORUM: CANCER

Resolving the stem-cell debate

Cancer stem cells sustain long-term growth of solid tumours

Richard J Gilbertson; Trevor A Graham

SEE LETTERS PP. 522 & 527

464 QUANTUM PHYSICS

Electrons in perfect drag

Dissipationless currents in two adjacent conducting layers

Steven M Girvin SEE LETTER P. 481

465 ANGIOGENESIS

Blood vessels on a chip

Living vascular networks can be created using microfluidics

Claudio Franco & Holger Gerhardt

466 PLANT NUTRITION

Rooting for more phosphorus

A protein kinase improves rice yield on phosphorus-deficient soils

Leon V Kochian SEE LETTER P. 535

467 GENETICS

The rate of human mutation

More mutations in children born to older fathers

Alexey Kondrashov SEE LETTER P. 471

468 GLACIOLOGY

Himalayan glacier mass balance

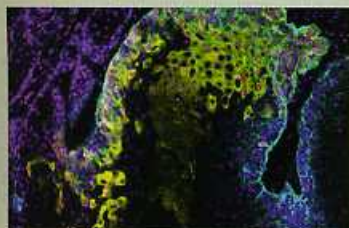
Altimetric study of glacier mass balance in the Himalayas

J Graham Cogley SEE LETTER P. 495

CANCER

Clone attack

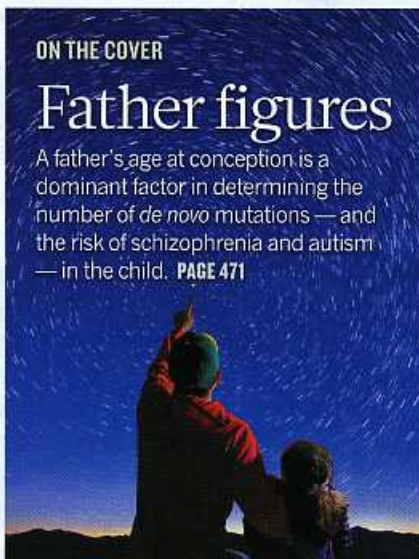
A cancer stem cell population in a solid tumour. **PAGE 527**



ON THE COVER

Father figures

A father's age at conception is a dominant factor in determining the number of *de novo* mutations — and the risk of schizophrenia and autism — in the child. **PAGE 471**



ARTICLES

- 471 **GENETICS** Rate of *de novo* mutations and the importance of father's age to disease risk
A Kong et al. SEE N&V P. 467

LETTERS

- 476 **PHYSICS** Non-classical light generated by quantum-noise-driven cavity optomechanics
D W C Brooks et al.
- 481 **PHYSICS** Exciton condensation and perfect Coulomb drag
D Nandi, A D K Finck, J P Eisenstein, L N Pfeiffer & K W West SEE N&V P. 464
- 485 **MATERIALS** Room-temperature ferroelectricity in supramolecular networks of charge-transfer complexes
A S Tayi et al.
- 490 **CLIMATE** Long-term decline of global atmospheric ethane concentrations and implications for methane
I J Simpson et al.
- 495 **GEOPHYSICS** Contrasting patterns of early twenty-first-century glacier mass change in the Himalayas
A Käb, E Berthier, C Nuth, J Gardelle & Y Arnaud SEE N&V P. 468
- 499 **NEUROSCIENCE** Mutations in the profilin 1 gene cause familial amyotrophic lateral sclerosis
C-H Wu et al.

- 504 **CANCER** Chromatin organization is a major influence on regional mutation rates in human cancer cells
B Schuster-Böckler & B Lehner

- 508 **DISEASE** TNF receptor 1 genetic risk mirrors outcome of anti-TNF therapy in multiple sclerosis
A P Gregory et al.

- 512 **NEUROSCIENCE** A subset of dopamine neurons signals reward for odour memory in *Drosophila*
C Liu et al.

- 517 **NEUROSCIENCE** Protocadherins mediate dendritic self-avoidance in the mammalian nervous system
J L Lefebvre, D Kostadinov, W V Chen, T Maniatis & J R Sanes

- 522 **CANCER** A restricted cell population propagates glioblastoma growth after chemotherapy
J Chen et al. SEE N&V P. 462

- 527 **CANCER** Defining the mode of tumour growth by clonal analysis
G Driessens, B Beck, A Caauwe, B D Simons & C Blanpain SEE N&V P. 462

- 531 **PLANT SCIENCES** NRT/PTT transporters are essential for translocation of glucosinolate defence compounds to seeds
H H Nour-Eldin et al.

- 535 **PLANT SCIENCES** The protein kinase Pstol1 from traditional rice confers tolerance of phosphorus deficiency
R Gamuyao et al. SEE N&V P. 466

PLANT SCIENCES

Growth plan

A gene in traditional rice varieties stimulates growth in poor soil. **PAGE 535**

