CONTENTS

22 August 2013 / Vol 500 / Issue No 7463

THIS WEEK

EDITORIALS

377 RESEARCH MANIOO III MANIONEE IS DONE

Subject to question available by

Just how informed should informed consent actually be?



WORLD VIEW Vilenes

379 What is to be done about Russian science? Mikhail Gelfand Russia's Academy of Sciences must reform but current proposals are in flux

RESEARCH HIGHLIGHTS

380 SELECTIONS FROM THE SCIENTIFIC LITERATURE

Ant vibrations / Chemical yardstick for tumours / Hot news / Coping with temptation / Ebola potency / Bacterial cancer / Marine bone worm discovery

SEVEN DAYS

382 THE NEWS IN BRIEF



Meet the world's latest carnivore: the olinguito / Ecuador gives green light to drilling in the Amazon / China launches bribery probe / NASA calls time on Kepler / Guidelines issued for naming planets

CAREERS

491 RESEARCH IMPACT

Altmetrics make their mark

Alternatives to citation analysis have a role in career assessment — but handle them with care

493 TURNING POINT

Cancer researcher Jason Weber has propelled the issue of science funding into the US Senate

NEWS IN FOCUS

385 WATER MANAGEMENT

Revamped forecasting system seeks to stop drinking water from silting up

386 PUBLISHING

Dramatic rise in number of research papers that are free to view

387 EVOLUTIONARY GENETICS

Sheep lock horns over fitness



388 POLICY

Romanian science suffers as reversal of reforms begins to bite

389 BIOTECHNOLOGY

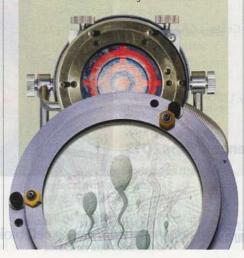
Researchers exploit loophole in US regulation of transgenic crops

FEATURES

STEM CELLS

Egg engineers

How to create sperm and egg cells in the laboratory PAGE 392



COMMENT

395 MEDICINE

Trial unpredictability yields predictable therapy gains

Benjamin Djulbegovic, Ambuj Kumar, Paul Glasziou, Branko Miladinovic & lain Chalmers A survey of 50 years of data shows the clinical trial system in a good light

BOOKS & ARTS



SCIENCE FICTION

New world

Paul McEuen on the final part of Margaret Atwood's dystopian trilogy PAGE 398

399 BOOKS IN BRIEF

CORRESPONDENCE

400 Antibiotics in agriculture / Fukushima fallout / REDD+ and indigenous people

OBITUARY

401 Michael John Morwood (1950–2013) Richard G Roberts & Thomas Sutikna

FUTURES

496 Alone

Marko Jankovic

CONTENTS

22 August 2013 / Vol 500 / Issue No 7463

RESEARCH

NEW ONLINE

403 Papers published this week at nature.com

NEWS & VIEWS

404 PLANT BIOLOGY

Electric defence

Herbivory induces an electrical wave that triggers jasmonate formation Alexander Christmann & Erwin Grill SEE ARTICLE P. 422

405 ASTROPHYSICS Twinkling stars

Correlation between stellar brightness variations and surface gravity Jørgen Christensen-Dalsgaard SEE LETTER P. 427

406 BIOTECHNOLOGY

Programming genomes with light Using optogenetics to regulate gene transcription Andreas Mőglich & Peter Hegemann SEE LETTER P. 472

408 CONDENSED-MATTER PHYSICS

A solid triple point

A coexistence of two insulating phases and a conducting phase in VO₂ Douglas Natelson

SEE LETTER P. 431

409 METABOLISM

Sweet enticements to move

PFK2 activity in endothelial cells accelerates glycolysis and angiogenesis Cholsoon Jang & Zoltan Arany

411 ECOLOGY

Abundant equals nested

Network nestedness is linked to community abundance Colin Fontaine

SEE LETTER P. 449

412 EVOLUTIONARY BIOLOGY

A gut feeling for isolation

A malfunctioning host-microbiome interface can cause hybrid inviability Gregory D D Hurst & Chris D Jiggins

ARTICLES

- 415 CANCER Signatures of mutational processes in human cancer L B Alexandrov et al.
- **422 PLANT SCIENCES GLUTAMATE** RECEPTOR-LIKE genes mediate



Methyl map

The dynamic methylation landscape of the human genome: the x axis (left) corresponds to the maximal observed methylation change across 24 human cell and tissue types, y is the median total methylation and z is the density of CpG dinucleotides. Mapping DNA methylation in this way provides a marker for regulatory dynamics in both normal and disease phenotypes. PAGE 477

leaf-to-leaf wound signalling S A R Mousavi, A Chauvin, F Pascaud,

S Kellenberger & E E Farmer SEE N&V P. 404

LETTERS

- 427 ASTRONOMY An observational correlation between stellar brightness variations and surface gravity F A Bastien, K G Stassun, G Basri & J Pepper SEE N&V P. 405
- 431 PHYSICS Measurement of a solid-state triple point at the metal-insulator transition in VO2 JH Park et al. SEE N&V P. 408
- OPTICS AND PHOTONICS The role of spin in the kinetic control of recombination in organic photovoltaics A Rao et al.
- 440 CLIMATE SCIENCES Onset of deglacial warming in West Antarctica driven by local orbital forcing WAIS Divide Project Members
- 445 EVO-DEVO Digit loss in archosaur evolution and the interplay between selection and constraints

MAG de Bakker et al.

- 449 ECOLOGY Emergence of structural and dynamical properties of ecological mutualistic networks
 - S Suweis, F Simini, J R Banavar & A Maritan SEE N&V P. 411
- 453 EVOLUTIONARY GENETICS Genomic evidence for ameiotic evolution in the bdelloid rotifer Adineta vaga J-F Flot et al.
- 458 NEUROSCIENCE Oxytocin enhances hippocampal spike transmission by modulating fast-spiking interneurons S F Owen et al.
- 463 BIOPHYSICS Non-vesicular trafficking by a ceramide-1-phosphate transfer protein regulates eicosanoids D K Simanshu et al.
- 468 CELL BIOLOGY The histone H4 lysine 16 acetyltransferase hMOF regulates the outcome of autophagy J Füllgrabe et al.
- 472 BIOTECHNOLOGY Optical control of mammalian endogenous transcription and epigenetic states S Konermann et al. SEE N&V P. 406
- **EPIGENOMICS Charting a dynamic** DNA methylation landscape of the human genome M J Ziller et al.
- 482 BIOPHYSICS DNA unwinding heterogeneity by RecBCD results from static molecules able to equilibrate B Liu, R J Baskin & S C Kowalczykowski
- STRUCTURAL BIOLOGY Structural basis for molecular recognition of folic acid by folate receptors C Chen et al.
- 490 CORRIGENDUM Replication stress links structural and numerical cancer chromosomal instability R A Burrell et al.
- 490 RETRACTION Oligosaccharide ligands for NKR-P1 protein activate NK cells and cytotoxicity K Bezouška et al.
- 490 ERRATUM The importance of feldspar for ice nucleation by mineral dust in mixed-phase clouds J D Atkinson et al.