enoito e CONTENTS

7 October 2010 / Vol 467 / Issue No. 7316

THIS WEEK

EDITORIALS

633 MEDICINE

Stem-cell laws in China revisted

The new regulations on stem-cell treatments are not tough enough

633 AGRICULTURE

Transgenic harvest

Africa has much to gain from the wider use of GM technology

634 SCIENTIFIC COMMUNITY

Garage biology

Professionals and amateurs can both gain through greater cooperation

WORLD VIEW



635 Scientists need a shorter path to research freedom Francis Collins

RESEARCH HIGHLIGHTS

636 SELECTIONS FROM THE SCIENTIFIC LITERATURE

Milkshake test / Fibroblasts in nerve growth / Groundwater shortage / RNAinduced iPS cells / Surviving extinction

SEVEN DAYS

638 THE NEWS IN BRIEF

Continued funding for stem-cell research / Plants on the brink / One more time for the shuttle? / French research spared / Planet is most-Earthlike yet / Herpes vaccine fails

CAREERS

739 EMPLOYMENT

The spread of postdoc unions

Unionizing on US campuses could prove divisive

741 BRIEFS

Postdoc Appreciation Week—'it's official / Howard Hughes institute looks to plants / Travel awards

NATUREJOBS

The latest listings

NEWS IN FOCUS

642 AWARDS

Graphene scores rapid win in physics Nobel

643 POLICY

Plan to merge NIH's alcohol and drug addiction institutes faces opposition

644 CIVIL RIGHTS

Supreme Court to rule on NASA's high-intensity security checks

645 Q&A

Susan Reverby on the shock discovery that US researchers exposed Guatemalan prisoners to syphilis

646 GENE EXPRESSION

First fruits of major epigenome mapping project

647 REGULATION

Green campaigners take on Europe's food-safety agency

FEATURES

648 EARTH SCIENCE

Weighing the world

ESA's troubled gravity-sensing satellite is back in business

650 GARAGE BIOTECH

Life hackers

Can amateur researchers revolutionize molecular biology?

AWARDS

It's a prize!

Medicine Nobel goes to Robert Edwards, pioneer of in vitro fertilization PAGE 641



COMMENT

ANIMAL BEHAVIOUR

In it together

John Whitfield on what we can learn about decision making from a swarm of bees PAGE 658



653 EVOLUTION

Altruism researchers must cooperate Samir Okasha

BOOKS & ARTS

657 COSMOLOGY

No rhiracle in the multiverse Michael Turner

659 BOOKS IN BRIEF

660 HISTORY

The light and shade of German science Alison Abbott

CORRESPONDENCE

661 On kin selection and the evolution of eusociality

FUTURES

744 War of the roses Polenth Blake



NEWS & VIEWS

664 SURFACE SCIENCE

Seeing the spin through

Atomic-level view offers insight into the use of organic molecules for spintronics Stefano Sanvito

665 MEDICAL MICROBIOLOGY

A toxin contest

The role of Clostridium difficile toxins remains open to debate

Jimmy D Ballard SEE LETTER P.711

666 NANOFLUIDICS

Tiny electrostatic traps

Electrostatic traps open new frontiers in the study of particle systems Jan C T Eijkel & Albert van den Berg SEE LETTER P.692

667 DNA REPAIR

A protein giant in its entirety

Three papers advance knowledge of the tumour-suppressor BRCA2 Lee Zou SEE ARTICLE P. 678

668 ATMOSPHERIC PHYSICS

Solar surprise?

Satellite data on solar spectral irradiance contrast with model predictions

Rolando R Garcia SEE LETTER P.696

669 MYCOLOGY

Spores ride a cooperative wind

The synchronized discharge of fungal spores aids their dispersal Tim Lincoln

670 VISION

Neurons show their true colours

Recordings of ganglion cells illuminate the initial stages of colour vision Jonathan B Demb & David H Brainard SEE ARTICLE P. 673

ARTICLES

- 673 NEUROSCIENCE Functional connectivity in the retina at the resolution of photoreceptors G D Field et al. SEE N&V P.670
- 678 MOLECULAR BIOLOGY Purified human BRCA2 stimulates RAD51-mediated recombination



ON THE COVE

Galactic turmoil

Despite living in one, we have little understanding of how disk galaxies formed. Many disk galaxies of the early Universe are much larger and more turbulent than modern spirals. But the discovery of a sample of 'turbulent disk' galaxies persisting to today adds spice to the debate. In this simulation, cold gas (in red) feeds star formation and the resulting turbulent outflows (blue). PAGE 684

R B Jensen, A Carreira & S C Kowalczykowski SEE N&V P.667

LETTERS

- 684 ASTRONOMY High star formation rates as the origin of turbulence in early and modern disk galaxies A W Green et al.
- 687 APPLIED PHYSICS Single-shot readout of an electron spin in silicon A Morello et al.
- 692 APPLIED PHYSICS Geometry-induced electrostatic trapping of nanometric objects in a fluid M Krishnan, N Mojarad, P Kukura & V Sandoghdar SEE N&V P.666
- 696 CLIMATE SCIENCE An influence of solar spectral variations on radiative forcing of climate

J D Haigh, A R Winning, R Toumi & J W Harder SEE N&V P.668

700 EARTH SCIENCES Melting above the anhydrous solidus controls the location of volcanic arcs P C England & R F Katz

- 704 CLIMATE SCIENCE Global metabolic impacts of recent climate warming M E Dillon, G Wang & R B Huey
- 707 GENETICS The ploidy conveyor of mature hepatocytes as a source of genetic variation

 A W Duncan et al.
- 711 MEDICAL MICROBIOLOGY The role of toxin A and toxin B in Clostridium difficile infection S A Kuehne et al. SEE N&V P.665
- 714 CELL BIOLOGY Asterless is a scaffold for the onset of centriole assembly NS Dzhindzhev et al.
- 719 CELL BIOLOGY Phosphorylation of the CPC by Cdk1 promotes chromosome bi-orientation T Tsukahara, Y Tanno & Y Watanabe
- 724 CELL BIOLOGY Direct visualization of secondary structures of F-actin by electron cryomicroscopy T Fujii, A H Iwane, T Yanagida & K Namba
- 729 STRUCTUÄAL BIOLOGY Crystal structure of the human symplekin–Ssu72–CTD phosphopeptide complex K Xiang et al.
- 734 STRUCTURAL BIOLOGY Structure of a fucose transporter in an outwardopen conformation S Dang et al.

NEUROSCIENCE

Vision on

A cell-by-cell circuit diagram of the primate retina. PAGE 673

