ΠU N28/e **INSIGHT** Tumour heterogeneity

mature

THE INTERNATIONAL WEEKLY JOURNAL OF SCIENCE

OUTLOOK FOR EARTH

THE IPCC ISSUES
ITS NEXT CLIMATE
FORECAST

PAGE 297

NEUROSCIENCE

A MODEL FOR THE BRAIN

Pea-sized organoids grown from patients' stem cells
PAGES 319 & 373

ENERGY

SOLAR CELLS SIMPLIFIED

Discard complexity to gain efficiency PAGES 323 & 395 CAREERS

PERSONAL DIFFERENCES

Conflict resolution in the laboratory PAGE 449 **→** NATURE.COM/NATURE

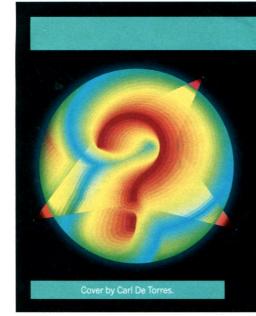
19 September 2013 £10

Vol. 501, No. 7467



CONTENTS

19 September 2013 / Vol 501 / Issue No 7467



OUTLOOK FOR EARTH

EDITORIAL

281 The final assessmentThe IPCC should change the way it

issues climate reports

FEATURES

297 Outlook for Earth

Striking a balance between uncertainty and the need for action

298 25 years of the IPCC

A history of the planet's climate watchdog

300 Rising tide

The struggle to predict the effects of climate change on the oceans

303 The climate chairman

How Ottmar Edenhofer attains consensus among the experts in the IPCC

COMMENT

307 A patchwork of emissions cuts

Elliot Diringer

A nation-by-nation approach could work for climate mitigation

310 Pushing the climate frontier

K John Holmes We can still learn from nineteenthcentury environmental surveys

nature.com/IPCC2013

THIS WEEK

EDITORIALS

282 CRYPTOGRAPHY

Spooked

Public trust in the Internet's security cannot be allowed to falter

282 LITERATURE

Book smart

The art of story-telling — with added science

WORLD VIEW

283 The Himalayas must be protected

Maharaj K Pandit
An international network is needed to monitor this fragile ecosystem

RESEARCH HIGHLIGHTS

284 SELECTIONS FROM THE SCIENTIFIC LITERATURE

Graphene photodetectors shine / Variation in amyloids / Salamanders infected / Fruit cuts diabetes risk / Fossils record volcanism

SEVEN DAYS

286 THE NEWS IN BRIEF

Voyager 1 reaches interstellar space / Australia does away with science minister / Massive water resources found in Kenya / Meningitis vaccine proves successful

NEWS IN FOCUS

289 POLICY

German scientists prepare for election outcome

291 AGRICULTURE

Plant breeders create grass that limits nitrogen emissions

292 ASTRONOMY

Telescope strike stirs worker unrest in Chile

293 FUNDING

Israel rejects Horizon 2020 rules

294 VIROLOGY

Scientists lament lack of data on MERS coronavirus

CAREERS

449 LABLIFE

Battle zone

Personal differences are inevitable but there are ways of limiting the fallout

451 CAREER BRIEFS

NATUREJOBS ADVERTISING FEATURE

Spotlight on postdoctoral positions

COMMENT

BOOKS & ARTS

312 FICTION

Silicon and surveillance

Sean Carroll

313 INNOVATION

Superpowered inventionLeonid Gokhberg & Dirk Meissner

314 MATHEMATICS

Master puzzler

David Singmaster

CORRESPONDENCE

316 Ecuador's forests under siege / Restrict antimicrobials in food production / E-learning helps the poor / Italian impasse



FUTURES 454 Reach for the stars Priya Chand

CONTENTS

19 September 2013 / Vol 501 / Issue No 7467

RESEARCH

NEW ONLINE

317 Papers published this week at nature.com

NEWS & VIEWS

318 CLIMATE SCIENCE

The cause of the pause

An explanation for the recent hiatus in global warming Isaac M Held SEE LETTER P.403

319 DEVELOPMENTAL NEUROSCIENCE

Miniature human brains

Generation of cerebral organoids from human iPS cells Oliver Brüstle SEE ARTICLE P.373

321 OCEANOGRAPHY

Mountain waves in the deep ocean

Internal lee waves and deep-ocean mixing Jennifer MacKinnon

322 PARASITOLOGY

Molecular one-upmanship

Mechanisms of immune resistance in Trypanosoma brucei gambiense Jayne Raper & David J Friedman **SEE LETTER P.430**

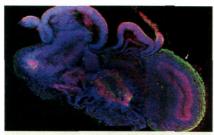
323 MATERIALS SCIENCE

Fast-track solar cells

Perovskite-containing solar cells break the 15% efficiency barrier Michael D McGehee SEE LETTER P.395

Down's syndrome link to ageing

Role of the deubiquitinating enzyme Usp16 in stem-cell self-renewal George P Souroullas & Norman E Sharpless **SEE ARTICLE P.380**



DEVELOPMENTAL NEUROSCIENCE

Brain work

Using patient-derived stem cells to create a brain-like organoid. PAGE 373



Good as gold

Siver nanoclusters can rival gold for stability - and usefulness. PAGE 399

ARTICLES

- 373 NEUROGENESIS Cerebral organoids model human brain development and microcephaly M A Lancaster et al. SEE N&V P.319
- 380 STEM CELLS Usp16 contributes to somatic stem-cell defects in Down's syndrome M Adorno et al. SEE N&V P.325
- 385 PROTEIN FOLDING Structural insight into the biogenesis of β-barrel membrane proteins N Noinaj et al.

LETTERS

- 391 ASTRONOMY A strong magnetic field around the supermassive black hole at the centre of the Galaxy R P Eatough et al.
- 395 SOLAR CELLS Efficient planar heterojunction perovskite solar cells by vapour deposition M Liu, M B Johnston & H J Snaith **SEE N&V P.323**
- 399 NANOPARTICLES Ultrastable silver nanoparticles A Desireddy et al.
- 403 CLIMATE CHANGE Recent globalwarming hiatus tied to equatorial Pacific surface cooling Y Kosaka & S-P Xie SEE N&V P.318
- 408 CLIMATE SCIENCE Rapid cross-density ocean mixing at mid-depths in the Drake Passage measured by tracer release

A J Watson et al.

- 412 GENETICS Germline mitochondrial DNA mutations aggravate ageing and can impair brain development J M Ross et al.
- 416 GENETICS DNA damage in germ cells induces an innate immune response that triggers systemic stress resistance M A Ermolaeva et al.
- 421 CANCER Synthetic lethal metabolic targeting of cellular senescence in cancer therapy JR Dörr et al.
- 426 MICROBIOME Bacterial colonization factors control specificity and stability of the gut microbiota SM Lee et al.
- 430 PARASITOLOGY Mechanism of Trypanosoma brucei gambiense resistance to human serum P Uzureau et al. SEE N&V P.322
- 435 IMMUNOLOGY Evolutionary implications of a third lymphocyte lineage in lampreys M Hirano et al.
- 439 IMMUNOLOGY Cross-neutralization of four paramyxoviruses by a human monoclonal antibody D Corti et al.
- 444 STRUCTURAL BIOLOGY The structural mechanism of KCNH-channel regulation by the eag domain Y Haitin, A E Carlson & W N Zagotta

