

# *NATURE*

## CONTENIDO

VOLUME 467 No.7315, SEPTEMBER 2010

### THIS WEEK

#### EDITORIALS

- 499 **Medicine.**  
**Hope in translation.**  
Researchers are learning how to translate lab results into viable drugs.
- 499 **Politics**  
**Germany rising.**  
Twenty years on, a reunified Germany is recovering its former scientific glory.
- 500 **Policy.**  
**Keep the quangos.**  
UK regulatory bodies are unpopular, but not all deserve the axe.

#### WORLD VIEW

- 501 Canada should not muzzle scientists' access to media.  
*Kathryn O'Hara.*

#### RESEARCH HIGHLIGHTS

- 502 **Selections from the Scientific Literature.**  
Alaskan carbon source / T<sub>H</sub> cells in multiple sclerosis / Personalized cancer therapy / Platinum recycled.

#### SEVEN DAYS

- 504 The news in Brief.  
Academy plagiarism / US science less competitive / UN to refocus on development goals / Genetics advice / UK funding.

#### CAREERS

- 623 Training.  
**The career doctor.**  
PhD graduates' skills are transferable — and they need to be.
- 624 Column.  
**How to navigate the road ahead.**

*Rania Sanford.*

- 625 By the Numbers.  
**Tennessee.**  
Home to Oak Ridge National Laboratory — and Graceland.

#### NATUREJOBS NEWS FEATURES

Spotlight on Tennessee

#### NEWS IN FOCUS

- 507 Ethics.  
**Moving on.**  
Chimpanzees' relocation to Texas lab reignites controversy.
- 508 Astronomy.  
NASA and European Space Agency to duplicate dark-energy missions?
- 510 Higher Education.  
Out-of-date data limit value of survey of US graduate programmes.
- 511 China.  
Beijing anti-fraud campaigner battles on despite physical attack.
- 511 Policy.  
'No change' prediction for science in Brazil's presidential election.
- 513 Quantum Physics.  
Three-qubit solid-state entanglement a step towards quantum computing.

#### FEATURES

- 514 Ocean Science  
**Out of the blue**  
Will the ten-year \$650-million Census of Marine Life deliver?
- 516 Ethics.  
**Sabotage!**  
How a Michigan postdoc destroyed a colleague's cell cultures.

#### COMMENT

- 519 History of Science  
The lost correspondence of Francis Crick.  
*Alexander Gann and Jan Witkowski.*

#### BOOKS & ARTS

- 526 Climate Change.  
Our emissions obsession.

*Daniel Greenberg.*

- 527 Books in Brief.
- 528 Policy.  
Towards nuclear zero.  
*Joseph Cirincione.*
- 529 Environment.  
Venice's fragile lagoon.  
*Colin Martin.*
- 530 Communication.  
A better class of heckle.  
*Helen Pilcher.*

#### CORRESPONDENCE

- 531 Marine stewardship / The sinking of the Cheonan.

#### FUTURES

- 628 Hey you!  
*Marko Jankovic.*

#### RESEARCH

#### NEW ONLINE

- 533 Papers available ahead of print.

#### NEWS & VIEWS

- 534 Water Resources.  
**Beyond infrastructure.**  
A survey of global hydrology highlights the value of the watershed concept.  
*Margaret A Palmer.*  
See Article p. 555.
- 535 Low-Temperature Physics.  
**Paired in one dimension.**  
The quest for an exotic form of superconductivity continues.  
*Immanuel Bloch.*  
See Letter p. 567
- 537 HIV  
**Antibodies with a split personality.**  
Antibody arms may grab two separate epitopes on the HIV seurface.  
*Andreas Plückthun.*  
See Letter p. 591

- 538 Biogeochemistry.  
**Ocean biomes blended.**  
Modelling work conveys a mixed message about nutrient ratios.  
*Raymond N. Sambrotto.*  
See Article p. 550
- 539 Genomics.  
**The long and the short of it.**  
Genome-wide association studies provide data on human-height variation.  
*Sadaf Shadan.*
- 540 Biodiversity.  
**A standard for species.**  
A welcome initiative aims to tackle taxonomic inflation.  
*Thomas M Brooks & Kristofer M Helgen.*
- 541 Nanoscience.  
**Dark-hot resonances.**  
Nanoplasmonic Fano resonances offer practical application.  
*Mark I Stockman.*

#### PERSPECTIVE

- 543 Medical Research.  
Translating cancer research into targeted therapeutics.  
*J S de Bono & A Ashworth.*

#### ARTICLES

- 550 Earth Science  
Ocean nutrient ratios governed by plankton biogeography.  
*T S Weber & C Deutsch.*  
See N&V p. 538
- 555 Environmental Science  
Global threats to human water security and river biodiversity.  
*C.J. Vörösmarty et al.*  
See N&V p. 534
- 562 **Molecular Biology.**  
Structure of RCC1 chromatin factor bound to the nucleosome core particle.  
*R D Makde, J R England, H P Yennawar & S Tan.*

#### LETTERS

- 567 Physics.  
Spin-imbalance in a one-dimensional Fermi gas.  
*Y-a Liao et al.*  
See N&V p. 535

- 570 Applied Physics.  
Generation of three-qubit entangled states using superconducting phase qubits.  
*M Neeley et al.*
- 574 Applied Physics.  
Preparation and measurement of three-qubit entanglement in a superconducting circuit.  
*L DiCarlo et al.*
- 579 Geophysics.  
Vertical extension of the subglacial drainage system into basal crevasses.  
*J T Harper, J H Bradford, N F Humphrey & T W Meierbachtol.*
- 583 Geophysics.  
Decay of aftershock density with distance does not indicate triggering by dynamic stress.  
*K Richards-Dinger, R S Stein & S Toda.*
- 587 Evolution.  
Genome-wide analysis of a long term evolution experiment with *Drosophila*.  
*M K Burke et al.*
- 591 Immunology.  
Polyreactivity increases the apparent affinity of anti-HIV antibodies by heteroligation.  
*H Mouquet et al.*  
See N&V p. 537
- 596 Drug Discovery.  
Clinical efficacy of a RAF inhibitor needs broad target blockade in BRAF-mutant melanoma.  
*G Bollag et al.*
- 600 Cell Biology.  
Selectivity mechanism of the nuclear pore complex characterized by single cargo tracking.  
*A R Lowe et al.*
- 604 Cell Biology.  
In vivo imaging of labeled endogenous  $\beta$ -actin mRNA during nucleocytoplasmic transport.  
*D Grünwald & R H Singer.*
- 608 Molecular Biology.  
Identification of a quality-control mechanism for mRNA 5'-end capping.  
*X Jiao et al.*

- 612 Molecular Biology.  
Two enzymes bound to one transfer RNA assume alternative conformations for consecutive reactions.  
*T Ito & Yokoyama.*
- 617 Cell Biology.  
Anisotropies in cortical tension reveal the physical basis of polarizing cortical flows.  
*M Mayer, M Depken, J S Bois, F Jülicher & S W Grill.*
- 622 Corrigendum.  
Release of chromatin protein HMGB1 by necrotic cells triggers inflammation.  
*P Scaffidi, T Misteli & M E Bianchi.*
- 622 Corrigendum.  
Treatment frontiers.  
*K Smith.*
- 622 Erratum.  
The genetics of ageing.  
*C J Kenyon.*

#### ON THE COVER

##### **Troubled Waters.**

The security of water supply for humans and the biodiversity of rivers are often seen as competing goals, but need that be the case? A new global-scale analysis of freshwater resources advances the field by considering threats both to river biodiversity (the left-hand globe) and to human water security, after accounting for investments in infrastructure and water services (right).

Pages 534-555.