

EDITORIAL

- 283 The Young Academy Movement
Bruce Alberts

NEWS OF THE WEEK

- 288 A roundup of the week's top stories

NEWS & ANALYSIS

- 291 Research Holds Up Well in Final 2011 Agreement
>> Science Podcast
- 292 Fukushima Radiation Creates Unique Test of Marine Life's Hardiness
- 293 Outlook Brightens for Plastic Solar Cells
- 294 Chinese Neurosurgeons Quietly Push for Easing of Brain Operation Ban
- 295 Tennessee House Bill Opens Door to Challenges to Evolution, Climate Change
- 296 A Sign of New Particles or General Restlessness?
- 297 Frightening Risk of Marfan Syndrome, and Potential Treatment, Elucidated
>> Reports pp. 358 and 361

NEWS FOCUS

- 298 Uncertain Future for Tropical Ecology
- 300 Do Jumping Genes Spawn Diversity?
- 302 Lunar and Planetary Science Conference
Asteroid Model Shows Early Life Suffered a Billion-Year Battering
Prime Science Achieved at Asteroid
A Badly Battered Vesta Awaits Dawn's Arrival
Snapshots From the Meeting

LETTERS

- 305 Putting the Ocean Under Review
P. A. Bernal
Low-Dose Radiation Knowledge: Priceless
M. H. Barcellos-Hoff et al.
The Risks and Benefits of Re-Consent
J. S. Forsberg et al.
Response
S. B. Trinidad et al.
- 306 CORRECTIONS AND CLARIFICATIONS

BOOKS ET AL.

- 307 A History of Communications
M. T. Poe, reviewed by C. Kelly
- 308 Genetic Justice
S. Krinsky and T. Simoncelli, reviewed by M. A. Goldman

POLICY FORUM

- 309 Genomics, Biobanks, and the Trade-Secret Model
R. Mitchell et al.

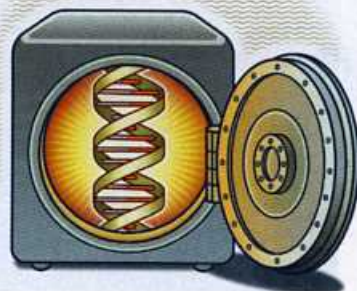
PERSPECTIVES

- 311 Photosynthesis, Reorganized
M. J. West-Eberhard et al.
- 312 Cytogenomes Show Their Colors
M. Affolter and K. Basler
>> Report p. 354
- 313 Make It Quantum and Continuous
P. Grangier
>> Report p. 330
- 315 Another Spin on Graphene
A. H. Castro Neto
>> Report p. 328
- 316 A Frontal Challenge for Climate Models
R. Ferrari
>> Research Article p. 318

CONTENTS continued >>



page 298



page 309



COVER

Schematic representations of DNA nanostructures with complex curvatures including two-dimensional arrangements of concentric rings and three-dimensional shapes, including a nanoflask 70 nanometers tall and 40 nanometers wide (DNA molecule is not shown to scale). On page 342, Han *et al.* describe the creation of these structures using a DNA origami folding technique in which double-helical DNA is bent to follow the rounded contours of the target object.

Image: Dongran Han and Hao Yan, The Biodesign Institute and Department of Chemistry and Biochemistry, Arizona State University

DEPARTMENTS

- 281 This Week in *Science*
- 284 Editors' Choice
- 286 *Science* Staff
- 369 New Products
- 370 *Science* Careers

RESEARCH ARTICLES

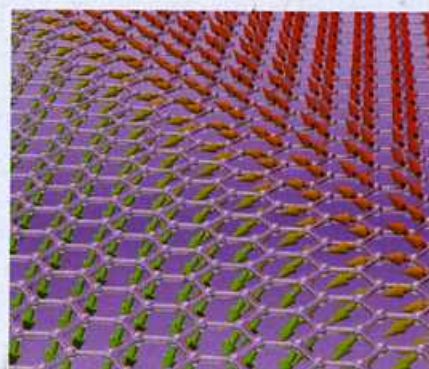
- 318 **Enhanced Turbulence and Energy Dissipation at Ocean Fronts**
E. D'Asaro et al.
Energy in surface ocean currents can dissipate into deep water via enhanced turbulence at the boundaries between water masses.
>> *Perspective p. 316*
- 322 **Structure of an Agonist-Bound Human A_{2A} Adenosine Receptor**
F. Xu et al.
Changes associated with conformationally selective agonist binding shed light on G protein-coupled receptor activation.

REPORTS

- 328 **Giant Nonlocality Near the Dirac Point in Graphene**
D. A. Abanin et al.
Unusual transport in graphene may be a consequence of the propagation of long-range charge-neutral currents.
>> *Perspective p. 315*
- 330 **Teleportation of Nonclassical Wave Packets of Light**
N. Lee et al.
Teleportation is demonstrated with bunches of photons.
>> *Perspective p. 313*
- 333 **Enhanced Enantioselectivity in Excitation of Chiral Molecules by Superchiral Light**
Y. Tang and A. E. Cohen
Light waves tuned to rotate more sharply than circularly polarized light can better discriminate between chiral molecules.
- 336 **Deterministic Preparation of a Tunable Few-Fermion System**
F. Serwane et al.
Optical traps are used to prepare up to 10 cold lithium atoms to be used for simulating few-body fermionic systems.
- 339 **A Bicycle Can Be Self-Stable Without Gyroscopic or Caster Effects**
J. D. G. Kooijman et al.
A new bicycle design points to the importance of mass distribution for stability.
>> *Science Podcast*
- 342 **DNA Origami with Complex Curvatures in Three-Dimensional Space**
D. Han et al.
Rationally introduced crossover positions bend networks of double-helical DNA strands into complex shapes.

- 346 **Phonemic Diversity Supports a Serial Founder Effect Model of Language Expansion from Africa**
Q. D. Atkinson
Analysis of word sounds suggests that language originated once, in central and southern Africa.
- 349 **Interplay Between Changing Climate and Species' Ecology Drives Macroevolutionary Dynamics**
T. H. G. Ezard et al.
Fossil records show that speciation and extinction are influenced by interaction with other species and with the environment.
- 352 **pH-Dependent Gating in a FocA Formate Channel**
W. Lü et al.
Transport of formate through a pentameric channel is gated by pH-dependent conformational changes.
- 354 **Specificity of *Drosophila* Cytonemes for Distinct Signaling Pathways**
S. Roy et al.
Signaling protein receptors are segregated into different cell protrusions in *Drosophila* cells.
>> *Perspective p. 312*
- 358 **Noncanonical TGF β Signaling Contributes to Aortic Aneurysm Progression in Marfan Syndrome Mice**
T. M. Holm et al.
- 361 **Angiotensin II Type 2 Receptor Signaling Attenuates Aortic Aneurysm in Mice Through ERK Antagonism**
J. P. Habashi et al.
Transforming growth factor- β promotes aortic aneurysm formation through activation of its "noncanonical" signaling pathway.
>> *News story p. 297*
- 365 **Sequential Synaptic Excitation and Inhibition Shape Readiness Discharge for Voluntary Behavior**
K. Kagaya and M. Takahata
In crayfish, specific neurons produce electrical activity in synchrony with different phases of the walking pattern.

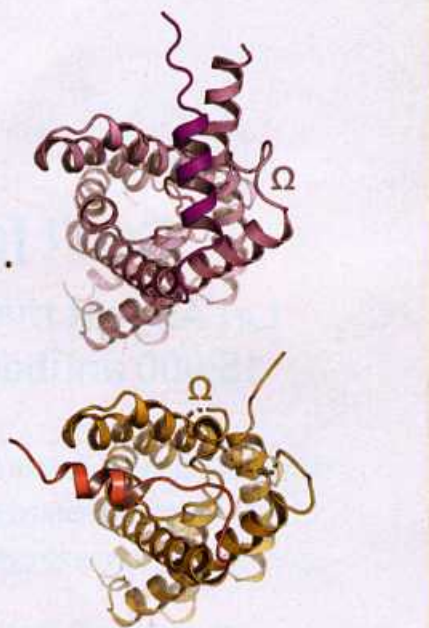
CONTENTS continued >>



pages 315 & 328



page 339



page 352