The Enduring Spoken Word
M. Dingemanse
Response
D. W. Oard

CORRECTIONS AND CLARIFICATIONS

The Collectors of Lost Souls
W. Anderson, reviewed by M. S. Lindee

The Future of Education
K. Egan, reviewed by J. V. Wertsch

CONTROLLING EUTROPHICATION: NITROGEN AND PHOSPHORUS
D. J. Conley et al.

ATTRACTORS AND DEMOCRATIC DYNAMICS
Y. Bar-Yam et al.

MAKING A CRUST
P. J. Michael and M. J. Cheadle
>> Report p. 1048

ATOMICALLY ENGINEERED OXIDE INTERFACES
J. W. Reiner et al.
>> Research Article p. 1026

A MATTER OF HUMIDITY
A. E. Dessler and S. C. Sherwood
>> Report p. 1063

STRESS RESPONSE AND AGING
L. R. Saunders and E. Verdin
>> Report p. 1067

PETER PRINCIPLE PACKS A PECK OF PHYTOPLANKTON
D. Grünbaum
>> Report p. 1067

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RESEARCH ARTICLE

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An atomic force microscope is used to pattern and fabricate devices created at the interface between different oxides.

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J. H. Kim et al.

A logic circuit involving microRNA and transcription factors ensures the timely demise of plant leaves.

REPORTS

1030 Macroscopic 10-Terabit-per-Square-Inch Arrays from Block Copolymers with Lateral Order
S. Park et al.

The sawtooth topography of annealed sapphire wafers guides the phase separation of a block copolymer to create a nearly defect-free patterned film.

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Injecting energy into a gold film can create a transient excited state with stronger bonds prior to melting.

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Earth-based spectrometers have detected seasonal variations of methane emissions from certain locations on Mars in 2003.

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A modern nitrogen cycle developed and microbial metabolisms evolved as soon as some free oxygen was present.

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A strain of Arabidopsis provides a plant model for the harmful effects of repeat nucleotide expansions in populations.

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The longevity factor SIRT1 influences protein stability by keeping heat shock factor 1 in its active state.

1067 Disruption of Vertical Motility by Shear Triggers Formation of Thin Phytoplankton Layers
W. M. Durham et al.

Extensive sheets of photosynthetic algae accumulate in coastal waters when their upward swimming is disrupted by counter currents in lateral water flow.

1070 Cytosolic Viral Sensor RIG-I Is a 5’-Triphosphate–Dependent Translocase on Double-Stranded RNA
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A host protein that recognizes invading viruses activates innate immunity defenses only when it senses both double-stranded RNA and a 5’ triphosphate.

1074 Neuronal Activity–Induced Gadd45b Promotes Epigenetic DNA Demethylation and Adult Neurogenesis
D. K. Ma et al.

Neural activity induces an immediate early gene that triggers epigenetic modifications needed for neurogenesis.

1077 Harmonic Convergence in the Love Songs of the Dengue Vector Mosquito
L. J. Cator et al.

Male and female mosquitoes change their wing beat frequencies to match each other as a prelude to mating.
SCIENCE

PODCAST
T. Kino and A. M. VanHook
The guanine nucleotide exchange factor Bx is required in lymphocytes for the expression of nfat3 in response to osmotic stress.

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Clinical, cell biological, and genomic data from human tumors are available from the National Cancer Institute; in Bioinformatics Resources.

NETWATCH: CellBASE
Find online research and education resources for cell biologists at this site from the American Society for Cell Biology; in Technical Information.

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L. Austin
Your choice of research problem may determine the course of your career as a physician-scientist.

Tooling Up: The Cold, Hard Truth About Finding a Job in 2009
D. Jensen
Finding a job now takes a plan, perseverance, and a positive attitude.

Faith and Science in Balance
E. Pain
Ph.D. student Imre Szilágyi strives to succeed in order to glorify God.

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