Average patterns of brain recruitment, as measured by functional magnetic resonance imaging, in children with typical reading development (left) or dyslexia (right) as they sound out printed words. Left-hemisphere brain regions engaged by typical readers, the parietal cortex (upper left) and fusiform gyrus (lower left), are less engaged by dyslexic readers. See page 280.

Photo illustration: Yael Kats (brain scans, Susan Whitfield-Gabrieli and John Gabrieli; background, iStockphoto.com)
BREVIA

289  Modern Riding Style Improves Horse Racing Times
T. Pfau et al.

Increased horse race speed over the past century can be attributed to the crouching posture and increased work done by jockeys.

RESEARCH ARTICLES

290  Demographic Variability, Vaccination, and the Spatiotemporal Dynamics of Rotavirus Epidemics
V. E. Pitzer et al.

Diarrhea-causing rotavirus epidemics can be predicted by shifts in birth rate rather than by seasonal variables.

294  Nonlocal Transport in the Quantum Spin Hall State
A. Roth et al.

A topological insulator exhibits current flow in edge states around the sample without the need for magnetic fields.

REPORTS

297  Higher-Order Photon Bunching in a Semiconductor Microcavity
M. Aßmann et al.

The tendency for photons to bunch gets stronger as their number increases.

300  Band Formation from Coupled Quantum Dots Formed by a Nanoporous Network on a Copper Surface
J. Lobo-Checa et al.

Trapped electronic states induced by a nanoporous overlayer create an artificial electronic band structure.

303  CH Stretching Excitation in the Early Barrier F + CHD3 Reaction Inhibits CH Bond Cleavage
W. Zhang et al.


306  Deep-Sea Temperature and Ice Volume Changes Across the Pliocene-Pleistocene Climate Transitions
S. Sosdian and Y. Rosenthal

Increases in glacial ice volume and ice-sheet dynamics are implicated in two distinct climate cooling events.

310  Transient Simulation of Last Deglaciation with a New Mechanism for Bølling-Allerød Warming
Z. Liu et al.

A coupled atmosphere-ocean general circulation model simulates the warming of the last deglaciation.

314  Undulatory Swimming in Sand: Subsurface Locomotion of the Sandfish Lizard
R. D. Maladen et al.

X-ray imaging reveals the undulatory motion of a sandfish lizard through a granular fluid.

318  Targeted Retrieval and Analysis of Five Neandertal mtDNA Genomes
A. W. Briggs et al.

Targeted sequencing improves Neandertal mitochondrial DNA retrieval and reveals low diversity among individuals.

321  The Human SepSecS-tRNA Sec Complex Reveals the Mechanism of Selenocysteine Formation
S. Palioura et al.

A crystal structure shows how a pyroxidal phosphate enzyme catalyzes formation of selenocysteine from phosphoserine on transfer RNA.

325  Tiger Moth Jams Bat Sonar
A. J. Corcoran et al.

Bertholdia trigona thwarts the attacks of bats by generating bursts of ultrasound that interfere with the bats’ sonar systems.

328  Functional Amyloids as Natural Storage of Peptide Hormones in Pituitary Secretory Granules
S. K. Maji et al.

Peptide and protein hormones are stored in secretory granules in a nonpathological amyloid conformation.

332  RIP3, an Energy Metabolism Regulator That Switches TNF-Induced Cell Death from Apoptosis to Necrosis
D.-W. Zhang et al.

The protein kinase RIP3 mediates necrotic cell death, likely through regulation of metabolic enzymes.

336  Reversal of RNA Dominance by Displacement of Protein Sequestered on Triplet Repeat RNA
T. M. Wheeler et al.

An antisense oligonucleotide ameliorates the symptoms of myotonic dystrophy in transgenic mice.

340  Genome-Wide RNAi Screen Identifies Genes Involved in Intestinal Pathogenic Bacterial Infection
S. J. F. Cronin et al.

In vivo RNA interference screen reveals regulators of innate immunity in Drosophila.

CONTENTS continued >>
SCIENCEONLINE