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171  In Situ Studies of Chemistry and Structure of Materials in Reactive Environments
F. (F.) Tao and M. Salmeron

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175  Complex Diel Cycles of Gene Expression in Coral-Algal Symbiosis
O. Levy et al.
Rhythmically expressed genes in reef-building corals may be required to deal with oxidative stress and the coral-algal symbiosis.

RESEARCH ARTICLE
176  Quantitative Analysis of Culture Using Millions of Digitized Books
J.-B. Michel et al.
Linguistic and cultural changes are revealed through the analyses of words appearing in books.

REPORTS
183  A Biological Solution to a Fundamental Distributed Computing Problem
Y. Afek et al.
Modeling of development in the fruit fly yields an algorithm useful in designing wireless communication networks.

186  Observation of Half-Height Magnetization Steps in Sr$_2$RuO$_4$
J. Jang et al.
The magnetic response of an exotic superconductor suggests that vortices with half a quantum of flux are present.

189  Light-Induced Superconductivity in a Stripe-Ordered Cuprate
D. Fausti et al.
Laser pulses are used to enable coherent transport between the copper oxide planes of a cuprate superconductor.

192  Electron Vortex Beams with High Quanta of Orbital Angular Momentum
B. J. McMorran et al.
Diffraction holograms are used to create electron vortex beams that should enable higher-resolution imaging.

195  Solvent-Free Oxidation of Primary Carbon-Hydrogen Bonds in Toluene Using Au-Pd Alloy Nanoparticles
L. Kesavan et al.
A gold- and palladium-based catalyst can be used to oxidize toluene and form a commercially useful ester.

199  Supracolloidal Reaction Kinetics of Janus Spheres
Q. Chen et al.
Colloidal particles that are charged on one side, and hydrophobic on the other, can form chiral helices in salt solutions.

202  The Deglacial Evolution of North Atlantic Deep Convection
D. J. R. Thornalley
Radiocarbon data reveal changes in the timing and strength of deep ocean convection during the last glacial termination.

206  A Basal Dinosaur from the Dawn of the Dinosaur Era in Southwestern Pangaea
R. N. Martinez et al.
Two hundred thirty million years ago, in what is now Argentina, dinosaurs could be found as the dominant carnivores or as small herbivores.

211  Writing About Testing Worries Boosts Exam Performance in the Classroom
G. Ramirez and S. L. Beilock
A brief classroom intervention helps remove anxiety from the testing situation.

214  Genomic Signatures Predict Migration and Spawning Failure in Wild Canadian Salmon
K. M. Miller et al.
High mortality of sockeye salmon in the Fraser River is associated with signals of metabolic and immune stress.

217  The Structure of Human 5-Lipoxygenase
N. C. Gilbert
Substitution of a destabilizing sequence has allowed crystallization of a key enzyme of the inflammatory response.

220  Light-Driven Changes in Energy Metabolism Directly Entrain the Cyanobacterial Circadian Oscillator
M. J. Rust et al.
Cyanobacterial circadian clock components are directly coupled to the metabolic status of the cell through interactions with adenine nucleotides.

223  Suppression of Avian Influenza Transmission in Genetically Modified Chickens
J. Lyall et al.
Transgenic birds expressing a short hairpin RNA that blocks viral polymerase hinder influenza transmission.

226  Human Tears Contain a Chemosignal
S. Gelstein et al.
Merely sniffing women’s negative emotional tears reduces sexual arousal in men.
Proteome Half-Life Dynamics in Living Human Cells

K. Yanagitani et al.

In times of stress, long-lived proteins increase their durability.
10.1126/science.1199784

Aberrant Overexpression of Satellite Repeats in Pancreatic and Other Epithelial Cancers

D. I. Ting et al.

Noncoding RNAs transcribed from DNA repeats in heterochromatin are expressed at surprisingly high levels in tumors.
10.1126/science.1200801

KOI-126: A Triply Eclipsing Hierarchical Triple with Two Low-Mass Stars

J. A. Carter et al.

The Kepler telescope detected a triple stellar system and reveals details of the structure of low-mass stars.
10.1126/science.1201274

2500 Years of European Climate Variability and Human Susceptibility

U. Büntgen et al.

Variability of central European temperature and precipitation shows correlations with some major historical changes.
10.1126/science.1197175

Hubble Confirms Nature of Mysterious Green Blob

‘Hanny’s Voorwerp’ has been an enigma since its discovery in 2007.
http://scim.ag/la3RAV

Rising Seas Look Inevitable

Effects of global warming will persist, even if we stop emitting greenhouse gases.
http://scim.ag/fw98J3

Measures to Save Ozone Stemmed a Lot More Global Warming

1980s spray-can clampdown prevented even larger temperature increase, modeling shows.
http://scim.ag/hlo11u

PROTEIN TRANSLATION

The Signal Transduction Knowledge Environment

11 January issue: http://scim.ag/ss011111

RESEARCH ARTICLE: Activation State of the M3 Muscarinic Acetylcholine Receptor Modulates Mammalian Odorant Receptor Signaling

Y. R. Li and H. Matsunami

PERSPECTIVE: Autonomic Modulation of Olfactory Signaling

R. A. Hall

Crosstalk between neurotransmitter signaling and odorant signaling may enhance the sense of smell.

MEETING REPORT: Cilia 2010—The Surprise Organelle of the Decade

E. F. Smith and R. Rohatgi

Scientists discussed advances in cilia biology and the role of cilia in development and disease.

TEACHING RESOURCE: Signaling by Neuronal Swelling

R. D. Fields

Physical changes associated with the electrical activity of neurons mediate intercellular signaling.

SCIENCE CAREERS

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A Veterinary Scientist’s Unique Career Path

S. Webb

D.V.M.-Ph.D. Laura Richard’s discovery of a novel elephant herpesvirus led to a career in human translational medicine.
http://scim.ag/fy4p5p

Discovering Unsung African-American Chemists

S. Weininger and L. Gortler

The two Knox brothers had distinguished careers in chemistry at a time when that was very difficult for African Americans.
http://scim.ag/ha7Vtc

PERSPECTIVE: Targeting Pain Where It Resides … in the Brain

R. Sharif-Naeini and A. I. Basbaum

An adenylyl cyclase 1 inhibitor acting on the anterior cingulate cortex alleviates neuropathic pain.

RESEARCH ARTICLE: Carrier Testing for Severe Childhood Recessive Diseases by Next-Generation Sequencing

C. J. Bell et al.

>> News story p. 130

PERSPECTIVE: Molecular Technologies

Open New Clinical Genetic Vistas

L. Jackson and R. E. Pyeritz

PODCAST

L. Jackson and O. Smith

New genome-sequencing technologies may enable expansion of carrier and prenatal genetic testing.

THE GONZO SCIENTIST: The Science Hall of Fame

The frequency with which names appear in books has been used to create a pantheon of the most famous scientists of the past two centuries (with video).
>> News story p. 135; Research Article p. 176