Nighttime view of present-day Chicago, USA. Since the 1893 Chicago World’s Fair introduced alternating current to the public, demand for electrical power has soared. Increased use of power from renewable resources will require new materials to store energy or generate power to ensure proper load balancing, as discussed in the special section beginning on page 921.

Photo: Jim Richardson/National Geographic/Getty Images
Evidence for Interstitial Carbon in Nitrogenase FeMo Cofactor
T. Spatzal et al.
Structural data show that the light atom at the center of the nitrogenase active site cofactor is a carbon.
>> Perspective p. 914; Report p. 940

Crystal Structure of the Eukaryotic 60S Ribosomal Subunit in Complex with Initiation Factor 6
S. Klinge et al.
The 3.5 angstrom–resolution structure provides insights into the architecture of the eukaryotic ribosome and its regulation.

The Large, Oxygen-Rich Halos of Star-Forming Galaxies Are a Major Reservoir of Galactic Metals
J. Tumlinson et al.
Observations with the Hubble Space Telescope show that halos of ionized gas are common around star-forming galaxies.

The Hidden Mass and Large Spatial Extent of a Post-Starburst Galaxy Outflow
T. M. Tripp et al.
A galaxy that has experienced a recent burst of star formation has an extended halo of hot, ionized gas surrounding it.

A Reservoir of Ionized Gas in the Galactic Halo to Sustain Star Formation in the Milky Way
N. Lehner and J. C. Howk
Clouds of ionized gas located inside our Galaxy provide a major supply of matter for fueling ongoing star formation.

Giant Piezoelectricity on Si for Hyperactive MEMS
S. H. Baek et al.
High-quality piezoelectric thin films are grown and exhibit superior properties for microelectromechanical systems.

Ultralight Metallic Microlattices
T. A. Schaedler et al.
A route is developed for fabricating extremely low-density, hollow-strut metallic lattices.

Silica-Like Malleable Materials from Permanent Organic Networks
D. Montarnal et al.
A polymer shows thermoset-like stability while displaying melt processability like that of a thermoplastic.

Domain Dynamics During Ferroelectric Switching
C. T. Nelson et al.
The role of defects and interfaces on switching in ferroelectric materials is observed with high-resolution microscopy.

Negative Frequency-Dependent Selection of Sexually Antagonistic Alleles in Myodes glareolus
M. Mokkonen et al.
Selection of rare-male types in a population can maintain genetic variation that benefits one sex but harms the other.

X-ray Emission Spectroscopy Evidences a Central Carbon in the Nitrogenase Iron-Molybdenum Cofactor
K. M. Lancaster et al.
A central light atom in a cofactor at the nitrogenase active site is identified as a carbon.

Structural Basis of Silencing: Sir3 BAH Domain in Complex with a Nucleosome at 3.0 Å Resolution
K.-J. Armache et al.
A regulatory protein forms extensive interactions with the nucleosome core particle to create the basis for gene silencing.

Active Starvation Responses Mediate Antibiotic Tolerance in Biofilms and Nutrient-Limited Bacteria
D. Nguyen et al.
During growth arrest, bacteria tolerate the presence of antibiotics, thanks to mechanisms that protect against oxidant stress.

H₂S: A Universal Defense Against Antibiotics in Bacteria
K. Shatalin et al.
Sulfide formation helps to protect various bacteria from antibiotic toxicity.

Wolbachia Enhance Drosophila Stem Cell Proliferation and Target the Germline Stem Cell Niche
E. M. Fast et al.
A bacterial endosymbiont up-regulates mitosis of Drosophila germline stem cells and blocks programmed cell death.

Correction of Sickle Cell Disease in Adult Mice by Interference with Fetal Hemoglobin Silencing
J. Xu et al.
Manipulation of a transcriptional repressor promotes expression of protective fetal globin genes.

Locomotor Primitives in Newborn Babies and Their Development
N. Dominici et al.
Mammalian locomotion patterns share common roots.

Rational Choice, Context Dependence, and the Value of Information in European Starlings (Sturnus vulgaris)
E. Freidin and A. Kacelnik
Context-related information improves serial decision-making but impairs simultaneous choice.

CONTENTS continued >>
Imaging of *Plasmodium* Liver Stages to Drive Next-Generation Antimalarial Drug Discovery
S. Meister et al.
Imidazolopiperazine compounds inhibit liver-stage malaria parasites with one oral dose in mice.
10.1126/science.1211936
>> Science Podcast

Host Proteasomal Degradation Generates Amino Acids Essential for Intracellular Bacterial Growth
C. T. D. Price et al.
The bacterial pathogen *Legionella pneumophila* ensures amino acid supplies by promoting degradation of target host proteins.
10.1126/science.1212868

Calibrating the End-Permian Mass Extinction
S. Shen et al.
High-precision geochronologic dating constrains probable causes of Earth’s largest mass extinction.
10.1126/science.1213454

The Origin of OB Runaway Stars
M. S. Fuji and S. P. Zwart
Most of the unusually fast, young stars in our galaxy are produced in three-body encounters within dense clusters of stars.
10.1126/science.1211927

FOCUS: Biomarker-Based Early Cancer Detection—Is It Achievable?
W. D. Hazleton and E. G. Luebeck
A new mathematical model evaluates the power of blood-based biomarkers for early cancer detection.

RESEARCH ARTICLE: Mathematical Model Identifies Blood Biomarker—Based Early Cancer Detection Strategies and Limitations
I. R. Young et al.
T cell receptor signaling in thymocytes determines their responsiveness to a survival cytokine later in life.
ST NETWATCH: The Nobel Prize in Physiology or Medicine 2011
This year’s Prize was awarded for breakthroughs in innate and adaptive immunity.

SCIENCE SIGNALING
www.sciencesignaling.org
The Signal Transduction Knowledge Environment
15 November Issue: http://scim.ag/ss111511

RESEARCH ARTICLE: Signaling by the Matrix Proteoglycan Decorin Controls Inflammation and Cancer Through PDCD4 and MicroRNA-21
R. Merlino et al.
A component of the extracellular matrix promotes inflammatory responses in sepsis and in tumors.

RESEARCH ARTICLE: Local Application of Neurotrophins Specifies Axons Through Inositol 1,4,5-Trisphosphate, Calcium, and Ca2+/Calmodulin–Dependent Protein Kinases
S. Nakamura et al.
Neurotrophins stimulate calcium signaling to promote axon specification.

RESEARCH ARTICLE: The Long-Term Survival Potential of Mature T Lymphocytes Is Programmed During Development in the Thymus
C. Sinclair et al.
T cell receptor signaling in thymocytes determines their responsiveness to a survival cytokine later in life.

ST NETWATCH: The Nobel Prize in Physiology or Medicine 2011
This year’s Prize was awarded for breakthroughs in innate and adaptive immunity.
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