BREVIA

1408 Massive Phytoplankton Blooms Under Arctic Sea Ice
K. R. Arrigo et al.
In midsummer, diatoms have taken advantage of thinning ice cover to feed in nutrient-rich waters.

RESEARCH ARTICLE

1409 U-Series Dating of Paleolithic Art in 11 Caves in Spain
A. W. G. Pike et al.
Dating of calcite crusts overlying art in Spanish caves shows that painting began more than 40,000 years ago.
>> Perspective p. 1387; Science Podcast

REPORTS

1413 Spin-Orbit Echo
N. Sugimoto and N. Nagaosa
A distinct parameter, twisted spin, is predicted to be conserved in a two-dimensional semiconductor with spin-orbit interaction.

1416 Dipolar Antiferromagnetism and Quantum Criticality in LiErF₄
C. Kraemer et al.
Scattering experiments reveal that magnetic ordering can arise from dipolar interactions, not only from exchange.

1420 Ambient-Temperature Isolation of a Compound with a Boron-Boron Triple Bond
H. Braunschweig et al.
A boron analog of an alkyne has been synthesized by reduction of a brominated precursor.
>> Perspective p. 1394

1422 Reticulated Nanoporous Polymers by Controlled Polymerization-Induced Microphase Separation
M. Seo and M. A. Hillmyer
In situ preparation of a block copolymer can be used to induce microphase separation to make mesoporous materials.

1426 Direct Detection of Projectile Relics from the End of the Lunar Basin–Forming Epoch
K. H. Joy et al.
Analysis of lunar rocks from the Apollo missions reveals fragments from meteorites that hit the Moon in the ancient past.
>> Perspective p. 1390

1429 Sparse Pre-Columbian Human Habitation in Western Amazonia
C. H. McMichael et al.
Analysis of soils in western Amazonia finds little evidence for pre-Columbian human occupations there.

1432 A Three-Stage Symbiosis Forms the Foundation of Seagrass Ecosystems
T. van der Heide et al.
A marine plant, small mollusks, and their resident sulfide-oxidizing bacteria survive together.
>> News story p. 1368

1434 Fear of Predation Slows Plant-Litter Decomposition
D. Hawlena et al.
The risk of being eaten by spiders changes the elemental composition of grasshoppers, which affects soil microbes.
>> Science Podcast

1438 Continental-Scale Effects of Nutrient Pollution on Stream Ecosystem Functioning
G. Woodward et al.
Leaf-litter breakdown rates across 100 European streams offer insights into ecosystem health during eutrophication.
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1440 p53 Dynamics Control Cell Fate
J. E. Purvis et al.
After DNA damage, pulses of p53 allow recovery, whereas sustained levels lead to senescence.

1445 A Histone Acetyltransferase Regulates Active DNA Demethylation in Arabidopsis
W. Qian et al.
A plant epigenetic regulator recognizes both histones and methylated DNA and prevents gene silencing.

1448 MORC Family ATPases Required for Heterochromatin Condensation and Gene Silencing
G. Moissiard et al.
A conserved family of adenosine triphosphatases predicted to catalyze alterations in chromosome superstructure is required for gene silencing.
>> Perspective p. 1391

1451 The Structures of COP1-Coated Vesicles Reveal Alternate Coatomer Conformations and Interactions
M. Faini et al.
The flexible coatomer complex makes contact with a variable number of neighbors and coats vesicles of variable size.

1454 Awake Hippocampal Sharp-Wave Ripples Support Spatial Memory
S. P. Jadhav et al.
The neuronal “replay” of past experience may allow animals to retrieve specific memories and use them to guide behavior.

1458 Segregation of Axonal and Somatic Activity During Fast Network Oscillations
T. Dugladze et al.
Inhibition by axo-axonic interneurons functionally separates the input and output of hippocampal pyramidal cells.
Adenylyl Cyclases of Trypanosoma brucei
Inhibit the Innate Immune Response of the Host
D. Salmon et al.
Parasites release cyclic adenosine monophosphate when swallowed up by myeloid cells, thereby turning off a host defense pathway.
10.1126/science.1222753

Function, Targets, and Evolution of Caenorhabditis elegans piRNAs
M. P. Bagijn et al.
Piwi-bound piwi-interacting RNAs recruit endogenous small interfering RNAs to silence mobile genetic elements.
10.1126/science.1220952

Rapid Progression of Ocean Acidification in the California Current System
N. Gruber et al.
Rising concentrations of atmospheric carbon dioxide threaten to amplify the severity of ocean acidification in upwelling zones.
10.1126/science.1216773

Mitochondrial Import Efficiency of ATFS-1 Regulates Mitochondrial UPR Activation
A. M. Nargund et al.
When stressed, the mitochondrion reduces import of a transcription factor, which enters the nucleus instead.
10.1126/science.1223560

Putting the Brakes on the Immune System
Researchers discover powerful but short-lived cells that rein in immune attacks.
http://scim.ag/Immune-Brakes

Aging Is Recorded in Our Genes
As we grow older, we lose DNA modifications that can protect against cancer and other diseases.
http://scim.ag/Age-Genes

Life Blooms Under Arctic Ice
Researchers discover green blooms of phytoplankton more than one meter below the surface.
http://scim.ag/Ice-Blooms

The Signal Transduction Knowledge Environment
12 June issue: http://scim.ag/ss061212

The lin-4 MicroRNA Targets the LIN-14 Transcription Factor to Inhibit Netrin-Mediated Axon Attraction
Y. Zou et al.
A microRNA instructs neurons when to stop axonal pathfinding.

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13 June issue: http://scim.ag/stm061312
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A. Thomson and M. Watson
For more effective vaccine advocacy, scientists and policy-makers must translate and apply insights from the cognitive and social sciences to the way they communicate and engage with the public.

RESEARCH ARTICLE: Cell Carriage, Delivery, and Selective Replication of an Oncolytic Virus in Tumor in Patients
R. A. Adair et al.
Oncolytic reovirus is carried by cells to tumors and protected from neutralizing antibodies in the circulation.

RESEARCH ARTICLE: Myocardial Infarction Triggers Chronic Cardiac Autoimmunity in Type 1 Diabetes
R. V. S. R. K. Gottumukkala et al.
Acute myocardial infarction triggers an autoimmune attack on the heart in a mouse model of type 1 diabetes and in human type 1 diabetic patients.

RESEARCH ARTICLE: Exome Sequencing Can Improve Diagnosis and Alter Patient Management
T. J. Dixon-Salazar et al.
Exome sequencing of 138 patients with neurodevelopmental disorders shows that this technique is useful for identifying new pathogenic mutations and for correcting diagnosis in ~10% of cases.

RESEARCH ARTICLE: Mucus-Penetrating Nanoparticles for Vaginal Drug Delivery
L. M. Ensign et al.
Mucus-penetrating particles improve drug delivery to the mucosal surface of the mouse vagina and deliver acyclovir for enhanced protection against vaginal herpes infection in mice.

RESEARCH ARTICLE: Successful Treatment of Ebola Virus–Infected Cynomolgus Macaques with Monoclonal Antibodies
X. Qiu et al.
Macaques survived infection with Ebola virus when treated starting at 24 hours after infection with a mix of three neutralizing monoclonal antibodies.

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M. Price
The Post-9/11 GI Bill and other programs are enabling some veterans to pursue careers in science.
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D. Jensen
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L. H. Miao et al.
Wheat is a major crop grown in regions prone to drought.

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D. MacArthur
A new method uses unedited RNA to identify the genes that are turned on.

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