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.
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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.
>> Perspective p. 1393

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. Qin 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 COPI-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 “playback” 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.
Adenylate Cyclases of *Trypanosoma brucei* Inhibit the Innate Immune Response of the Host *D. salmoni* 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

Life Blooms Under Arctic Ice

Researchers discover green blooms of phytoplankton more than one meter below the surface.

http://scim.ag/Age-Genes

As we grow older, we lose DNA modifications enabling some veterans to pursue careers in science.

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Tooling Up: Interview Intangibles D. Jensen

The most important aspects of your job interview are things you may not have thought about.

http://scim.ag/TU_Intangibles

Macaques survived infection with Ebola virus when treated starting at 24 hours after infection with a mix of three neutralizing monoclonal antibodies.

X. Qiu et al.

Mucus-penetrating particles improve drug delivery enabling some veterans to pursue careers in science.

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Soldiers Becoming Scientists

The Post-9/11 GI Bill and other programs are enabling some veterans to pursue careers in science.

http://scim.ag/SoldiersScientists

RESEARCH ARTICLE: The Transcription Factor TFEB Links mTORC1 Signaling to Transcriptional Control of Lysosomal Homeostasis A. Rocznik-Ferguson et al.

http://scim.ag/Immune-Brakes

Regulates Mitochondrial UPR Activation A. M. Nargund et al.

For more effective vaccine advocacy, scientists are putting the brakes on the immune system.

A. Thomson and M. Watson

EDITORIAL: Listen, Understand, Engage A. Thomson and M. Watson

For more effective vaccine advocacy, scientists are putting the brakes on the immune system.

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FOCUS: Autoimmune Diabetes Inflames the Heart

Chronic Cardiac Autoimmunity in Type 1 Diabetes

R. H. Eckel and G. S. Eisenbarth

FOCUS: The Virus That Came in from the Cold

enabling some veterans to pursue careers in science.

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RESEARCH ARTICLE: Myocardial Infarction Triggers Chronic Cardiac Autoimmunity in Type 1 Diabetes

R. V. S. R. K. Gottumukkala et al.

FOCUS: Autoimmune Diabetes Inflames the Heart R. H. Eckel and G. S. Eisenbarth

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.

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RESEARCH ARTICLE: Mucus-Penetrating Nanoparticles for Vaginal Drug Delivery

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Protect Against Herpes Simplex Virus L. M. Ensing 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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