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COVER

A young polar bear (*Ursus maritimus*) on a piece of ice that is drifting in the Barents Sea, northeast of Svalbard, Norway. Polar bears depend on sea ice as a platform for hunting seals, but current melting and retreat of sea ice is increasingly forcing them onto land. A recent study has found polar bears to be evolutionarily older and genetically more distinct than was previously thought. See page 344.

Photo: Florian Schulz, www.visionsofthewild.com

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SCIENCEONLINE

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www.scienceexpress.org

The Ancient Drug Salicylate Directly Activates AMP-Activated Protein Kinase

S. A. Hawley et al.

A possible molecular mechanism of action for a metabolite of aspirin is described.

10.1126/science.1215327

Don't Look Back in Anger! Responsiveness to Missed Chances in Successful and Nonsuccessful Aging

S. Brassen et al.

Emotionally healthy older adults show a reduced responsiveness to regret when performing a sequential decision task.

10.1126/science.1217516

Strongly Interacting Rydberg Excitations of a Cold Atomic Gas

Y. O. Dudin and A. Kuzmich

Illumination of an ensemble of cold rubidium atoms ultimately leads to high-level excitation of just a single atom.

10.1126/science.1217901

The Active Site of Methanol Synthesis over Cu/ZnO/Al₂O₃ Industrial Catalysts

M. Behrens et al.

Catalysis is favored by stepped copper nanoparticles decorated with zinc oxide, which promotes stronger intermediate binding.

10.1126/science.1219831

TECHNICALCOMMENTS

Comment on "Detection of Emerging Sunspot Regions in the Solar Interior"

D. C. Braun

Full text at www.sciencemag.org/cgi/content/full/336/6079/296-c

Response to Comment on "Detection of Emerging Sunspot Regions in the Solar Interior"

S. Ikonidis et al.

Full text at www.sciencemag.org/cgi/content/full/336/6079/296-d

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Highlights From Our Daily News Coverage

Drugged Honeybees Do the Time Warp

General anesthesia disrupts the insect's circadian rhythm.

http://scim.ag/Drugged_Honeybees

Unhappiness Is in the Eye of the Beholder

Facial expressions not universal, as scientists once thought.

http://scim.ag/Facial_Expressions

Dangers of Chinese Medicine Brought to Light by DNA Studies

Sequencing pinpoints origins and helps reveal unknown ingredients.

http://scim.ag/Chinese_Medicine

SCIENCECAREERS

www.sciencecareers.org/career_magazine

Free Career Resources for Scientists

CAREER Q&A: From Science to Fiction

E. Pain

Spanish pharmacologist Amalia Lafuente has written a novel about the personal and professional conflicts faced by early-career researchers.

<http://scim.ag/AmaliaLafuente>

Tooling Up: You Will Never Be Appreciated

D. Jensen

Scientists and other professionals can increase their job satisfaction by kicking their addiction to praise.

<http://scim.ag/PraiseAddiction>

SCIENCE SIGNALING

www.sciencesignaling.org

The Signal Transduction Knowledge Environment

17 April issue: <http://scim.ag/ss041712>

EDITORIAL GUIDE: Focus Issue—Adding Math to the Signaling Toolkit

W. Wong and J. F. Foley

Computational approaches can reveal how cells interpret, process, and respond to signals.

RESEARCH ARTICLE: Synthetic Signal Propagation Through Direct Cell-Cell Interaction

M. Matsuda et al.

PERSPECTIVE: Understanding Signaling Dynamics Through Synthesis

A. L. Slusarczyk and R. Weiss

An engineered system based on Notch and Delta in mammalian cultured cells recapitulates signal propagation, a phenomenon that occurs in development.

RESEARCH ARTICLE: Quantifying Crosstalk Among Interferon- γ , Interleukin-12, and Tumor Necrosis Factor Signaling Pathways Within a T_H1 Cell Model

D. J. Klinken II et al.

Combining experiments with mathematical modeling provides insights into the responses of T cells to cytokines.

PERSPECTIVE: Unmasking Functional Motifs Within Disordered Regions of Proteins

R. K. Das et al.

The application of a computational approach to identify short linear motifs may enable the engineering of signaling networks.

REVIEW: Computational Approaches for Analyzing Information Flow in Biological Networks

B. Kholodenko et al.

Signaling network construction and analysis provide insights into biology and medicine.

PROTOCOL: A Systematic Approach for Analysis of Peptide Array Kinome Data

Y. Li et al.

A new method of analysis of kinome data takes account of the differences between peptide arrays and DNA microarrays.

ST NETWATCH: Plant Metabolic Network (PMN)

An integrated network of researchers and data provide plant metabolic pathway models.

ST NETWATCH: Systems Biology Experiment Analysis Management System (SBEAMS)

Integrate microarray and proteomics data with a database manager and analysis package.

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Integrating Medicine and Science

18 April issue: <http://scim.ag/stm041812>

FOCUS: The Power of One

D. Louvard et al.

A single mouse Lgr5-positive colon stem cell can be expanded into a 3D organoid that, after transplant, contributes to the repair of injured colon epithelia in a mouse model of colitis.

RESEARCH ARTICLE: Dendrimer-Based Postnatal Therapy for Neuroinflammation and Cerebral Palsy in a Rabbit Model

S. Kannan et al.

FOCUS: A Baby Step for Nano

S. Tan

A dendrimer-drug conjugate attenuates neuroinflammation and improves motor function in a rabbit model of cerebral palsy.

>> [News story p. 286](#)

RESEARCH ARTICLE: Patient-Specific Induced Pluripotent Stem Cells as a Model for Familial Dilated Cardiomyopathy

N. Sun et al.

Cardiomyocytes derived from iPSC cells from patients with familial dilated cardiomyopathy can be used to model this disease.

RESEARCH ARTICLE: Targeted Delivery of PLK1-siRNA by ScFv Suppresses Her2⁺ Breast Cancer Growth and Metastasis

Y. Yao et al.

Antibody-mediated delivery of anticancer small interfering RNAs suppresses Her2⁺ breast cancer growth and metastasis.

SCIENCEPODCAST

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Free Weekly Show

On the 20 April Science Podcast: synthetic genetics, confidence in decision-making, California's citrus crisis, and more.

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