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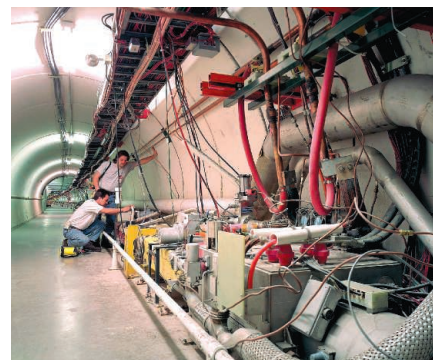
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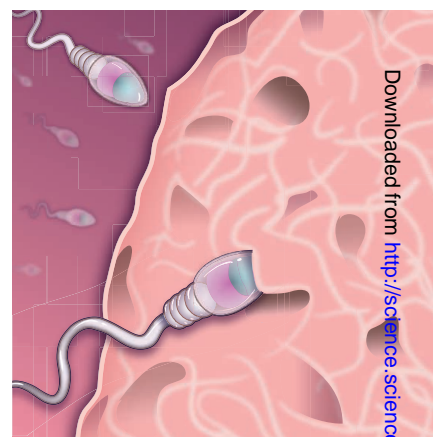
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COVER

Tropical tree species in Soberania National Park, Panama. Differences in species composition across locations (β diversity) generally increase at low latitude and elevation, such that the β diversity of many clades peaks in lowland, tropical areas. Kraft *et al.* show that this trend is more likely driven by differences in the size of species pools than by differences in community assembly processes in temperate versus tropical systems. See page 1755.

Photo: Christian Ziegler, Smithsonian Tropical Research Institute

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Two joined latex strips show complex twisting behavior similar to that of seed pods.
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Analysis of downwind plume evolution using satellite observations can be used for air pollution estimates.
- 1739 Inbreeding Promotes Female Promiscuity**
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After a population bottleneck, polyandry allows females to select sperm with the best prospects for fitness.
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- 1758 A Role for Snf2-Related Nucleosome-Spacing Enzymes in Genome-Wide Nucleosome Organization**
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SCIENCEONLINE

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An Aboriginal Australian Genome Reveals Separate Human Dispersals into Asia

M. Rasmussen et al.

Whole-genome data indicates that early modern humans expanded into Australia 62,000 to 75,000 years ago.

10.1126/science.1211177

>> [News story p. 1689](#); [Science Podcast](#)

Impacts of the Cretaceous Terrestrial Revolution and KPg Extinction on Mammal Diversification

R. W. Meredith et al.

Molecular phylogenetic analysis, calibrated with fossils, resolves the time frame of the mammalian radiation.

10.1126/science.1211028

N-Terminal Acetylation Acts as an Avidity Enhancer Within an Interconnected Multiprotein Complex

D. C. Scott et al.

Acetylation of an N-terminal methionine is important for mediating specific protein-protein interactions.

10.1126/science.1209307

Replication-Dependent Loss of 5-Hydroxymethylcytosine in Mouse Preimplantation Embryos

A. Inoue and Y. Zhang

The oxidation product of methylated cytosine is passively lost from DNA in the zygote as cell division progresses.

10.1126/science.1212483

Increasing N Abundance in the Northwestern Pacific Ocean Due to Atmospheric Nitrogen Deposition

T.-W. Kim et al.

Nitrogen deposition from the atmosphere has altered the nitrate:phosphorus ratio in the marginal seas of the northwestern Pacific Ocean.

10.1126/science.1206583

Partial Retraction of "Detection of an Infectious Retrovirus, XMRV, in Blood Cells of Patients with Chronic Fatigue Syndrome"

R. H. Silverman et al.

10.1126/science.1212182

Failure to Confirm XMRV/MLVs in the Blood of Patients with Chronic Fatigue Syndrome: A Multi-Laboratory Study

G. Simmons et al.

The assays used to detect XMRV in patients with chronic fatigue syndrome are unreliable.

10.1126/science.1213841

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Gene Therapy May Thwart HIV

A promising but preliminary clinical trial could bring the field closer to a potential cure.

<http://scim.ag/HIVgene>

Return of a Killer Volcano

Air pollution from extended Icelandic eruption could kill thousands in Europe.

<http://scim.ag/killer-volcano>

Earth's Ultimate Destruction—And Possible Reincarnation

Astronomers ponder the fate of our world.

<http://scim.ag/earth-fate>

SCIENCE SIGNALING

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The Signal Transduction Knowledge Environment

20 September issue: <http://scim.ag/ss092011>

RESEARCH ARTICLE: A Synthetic Biology Approach Reveals a CXCR4-G₁₃-Rho Signaling Axis Driving Transendothelial Migration of Metastatic Breast Cancer Cells

H. Yagi et al.

PODCAST

J. S. Gutkind and A. M. VanHook

Interfering with a specific G protein-coupled receptor pathway may block metastasis of some forms of breast cancer.

RESEARCH ARTICLE: *Shigella flexneri* Infection Generates the Lipid PI5P to Alter Endocytosis and Prevent Termination of EGFR Signaling

D. Ramel et al.

Shigella keeps infected cells alive by preventing the lysosomal trafficking and degradation of an activated growth factor receptor.

RESEARCH RESOURCE: Phosphoproteomic Analysis of *Salmonella*-Infected Cells Identifies Key Kinase Regulators and SopB-Dependent Host Phosphorylation Events

L. D. Rogers et al.

The foodborne pathogen *Salmonella* triggers distinct phosphorylation events in host cells to promote infection.

TEACHING RESOURCE: An Introduction to Dynamical Systems

E. A. Sobie

TEACHING RESOURCE: An Introduction to MATLAB

E. A. Sobie

TEACHING RESOURCE: Obtaining and Estimating Kinetic Parameters from the Literature

S. R. Neves

Lecture notes and problem sets provide materials for teaching systems biology.

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Integrating Medicine and Science

21 September issue: <http://scim.ag/stm092111>

COMMENTARY: Academic Medical Centers—Ripe for Rapid-Learning Personalized Health Care

G. S. Ginsburg et al.

Academic medical centers must play a central role in unleashing the potential of personalized health care.

COMMENTARY: Integrating Cancer Control into Global Health

H. Varmus and E. L. Trimble

The newly formed Center for Global Health at the National Cancer Institute seeks to control cancer in the world's poorest countries.

RESEARCH ARTICLE: Repeated Vulvovaginal Fungal Infections Cause Persistent Pain in a Mouse Model of Vulvodynia

M. A. Farmer et al.

The development of an animal model of vulvodynia indicates that recurrent candidiasis is a potential cause of the disorder.

RESEARCH ARTICLE: A Plasmablast Biomarker for Nonresponse to Antibody Therapy to CD20 in Rheumatoid Arthritis

K. Owczarczyk et al.

Plasmablast biomarkers predict whether rheumatoid arthritis patients will respond to therapeutic antibodies to CD20.

RESEARCH ARTICLE: Teriparatide as a Chondroregenerative Therapy for Injury-Induced Osteoarthritis

E. R. Sampson et al.

Teriparatide is chondroprotective and chondroregenerative in a mouse model of injury-induced osteoarthritis of the knee.

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Experimental Error: Nobel Gas

A. Ruben

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A Tale of Two Volunteers

E. Pain

Two scientists tell how time spent volunteering in developing countries impacted their lives and careers.

<http://scim.ag/2Volunteers>

How Many Astronauts Do We Need?

M. Price

A newly shuttle-less NASA is trying to figure out how many astronauts to recruit.

http://scim.ag/Astro_Recruitment

SCIENCE PODCAST

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On the 23 September *Science* Podcast: an Aboriginal Australian genome, assessing single-sex education, the latest on XMRV and chronic fatigue, and more.

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