



## COVER

A male lark bunting in the Pawnee National Grassland, Colorado. The plumage quality of the males determines their reproductive success, but different aspects of the black and white markings are preferred by females in different years. This variability alters the long-term sexual selection dynamics and may favor the evolution of multiple sexual ornaments. See page 459.

**Photo:** Bruce Lyon

## DEPARTMENTS

- 379 Science Online
- 381 This Week in *Science*
- 387 Editors' Choice
- 388 Contact *Science*
- 391 Random Samples
- 393 Newsmakers
- 422 AAAS News & Notes
- 486 AAAS Meeting Program
- 497 New Products
- 498 Science Careers

## EDITORIAL

- 385 Solutions for Nigeria  
by Rita R. Colwell and Michael Greene

## NEWS OF THE WEEK

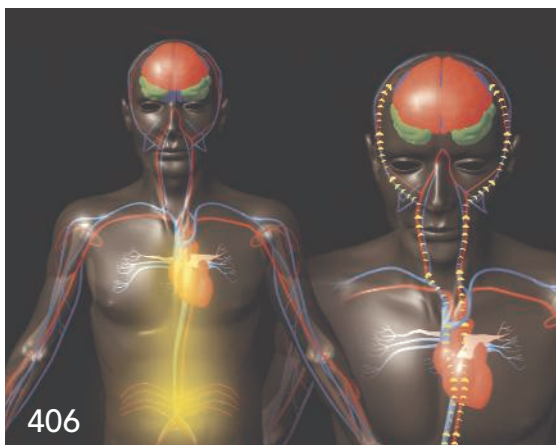
- Dust Storm Rising Over Threat to Famed Rock Art in Utah 394
- A Plan to Capture Human Diversity in 1000 Genomes 395
- Max Planck Accused of Hobbling Universities 396
- France Launches Public Health School à l'Anglo-Saxonne 397

### SCIENCE SCOPE

- Got Data Questions? NSF's Indicators Has (Most of) the Answers 398
- "Little" Cosmic Ray Observatory Aims to Make a Big Mark 400
- Where Has All the Stardust Gone? 401  
>> Report p. 447
- Dutch Universities Split Over Nobel Laureate's Rehabilitation 401

## NEWS FOCUS

- A Time War Over the Period We Live In 402
- Why We're Different: Probing the Gap Between Apes and Humans 404
- Shell Shock Revisited: Solving the Puzzle of Blast Trauma 406



## LETTERS

- Antarctica Invaded A. Ricciardi 409
- A Closer Look at the IPCC Report S. Solomon, R. Alley, J. Gregory, P. Lemke, M. Manning Response M. Oppenheimer et al.

## CORRECTIONS AND CLARIFICATIONS 410

## BOOKS ET AL.

- Vienna in the Age of Uncertainty Science, Liberalism and Private Life D. R. Coen, reviewed by M. D. Laubichler 412
- Musicophilia Tales of Music and the Brain O. Sacks, reviewed by J. Phillips-Silver 413

## EDUCATION FORUM

- Application of Bloom's Taxonomy Debunks the "MCAT Myth" 414  
A. Y. Zheng, J. K. Lawhorn, T. Lumley, S. Freeman

## PERSPECTIVES

- Lining Up to Avoid Bias 416  
A. Rokas >> Report p. 473
- Enlightening Rhythms 417  
O. Lipan >> Report p. 482
- The Rise and Fall of a Great Idea 418  
A. Meibom >> Report p. 453
- Structural Nanocomposites 419  
Y. Dzenis
- Adaptive Composites 420  
R. Vaia and J. Baur

## ASSOCIATION AFFAIRS

- Science and Technology for Sustainable Well-Being 424  
J. P. Holdren



Downloaded from <http://science.sciencemag.org/> on April 22, 2018

413

CONTENTS continued >>

## SCIENCE EXPRESS

[www.sciencexpress.org](http://www.sciencexpress.org)

### APPLIED PHYSICS

**Chemically Derived, Ultrasmooth Graphene Nanoribbon Semiconductors**

*X. Li, X. Wang, L. Zhang, S. Lee, H. Dai*

Unlike nanotubes, 10-nanometer-wide graphene nanoribbons have smooth edges and can act as semiconductors.

10.1126/science.1150878

### IMMUNOLOGY

**Innate Immune Homeostasis by the Homeobox Gene *Caudal* and Commensal-Gut Mutualism in *Drosophila***

*J.-H. Ryu et al.*

A *Drosophila* gene important in development also inhibits the production of harmful antimicrobial peptides that could kill off beneficial gut microbes.

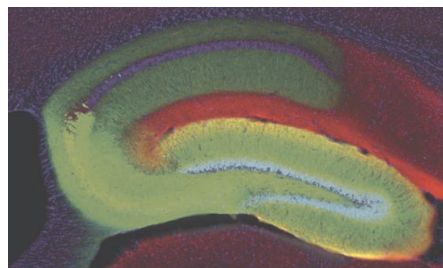
10.1126/science.1149357

### IMMUNOLOGY

**The Right Resident Bugs**

*N. Silverman and N. Paquette*

10.1126/science.1154209



### NEUROSCIENCE

**Transgenic Inhibition of Synaptic Transmission Reveals Role of CA3 Output in Hippocampal Learning**

*T. Nakashiba, J. Z. Young, T. J. McHugh, D. L. Buhl, S. Tonegawa*

Blockade of neural activity in the CA3 region of the hippocampus with a reversible, inducible transgenic method inhibits rapid learning but spares certain spatial tasks.

10.1126/science.1151120

### MOLECULAR BIOLOGY

**Complete Chemical Synthesis, Assembly, and Cloning of a *Mycoplasma genitalium* Genome**

*D. G. Gibson et al.*

A complete bacterial genome is synthesized, assembled, and cloned, providing a method that will be useful for generating large DNA molecules de novo.

10.1126/science.1151721

## BREVIA

### COMPUTER SCIENCE

**100% Accuracy in Automatic Face Recognition**

435

*R. Jenkins and A. M. Burton*

The simple process of image averaging can boost the performance of a commercial face recognition system to 100% accuracy.

## REPORTS

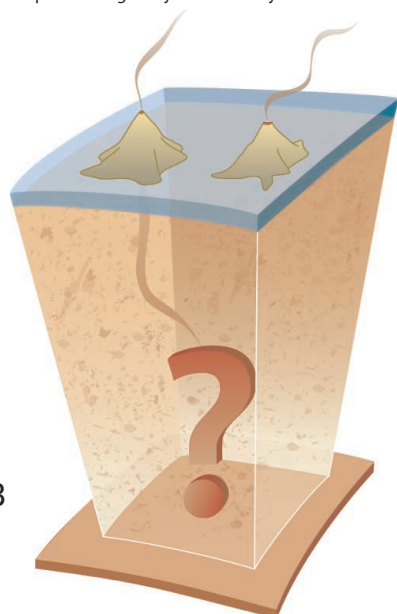
### PHYSICS

**Probing the Carrier Capture Rate of a Single Quantum Level**

436

*M. Berthe et al.*

Scanning tunneling microscopy reveals how electrons tunnel through a single dangling silicon bond and shows that local subsurface doped holes greatly affect the dynamics.



453

### CHEMISTRY

**Spin Conservation Accounts for Aluminum Cluster Anion Reactivity Pattern with O<sub>2</sub>**

438

*R. Burgert et al.*

Small metal clusters with an even number of atoms react rapidly with oxygen because electron spin is conserved, whereas odd clusters are more stable because it is not.

### CHEMISTRY

**NMR Imaging of Catalytic Hydrogenation in Microreactors with the Use of para-Hydrogen**

442

*L.-S. Bouchard et al.*

The flow of para-hydrogen through industrial catalytic reactors allows magnetic resonance imaging of the gas flow and of the hydrogenation reactions, facilitating optimization.

### APPLIED PHYSICS

**GaN Photonic-Crystal Surface-Emitting Laser at Blue-Violet Wavelengths**

445

*H. Matsubara et al.*

Surface-emitting lasers fabricated with photonic crystal structures can now emit at technologically relevant blue-violet wavelengths.

### GEOCHEMISTRY

**Comparison of Comet 81P/Wild 2 Dust with Interplanetary Dust from Comets**

447

*H. A. Ishii et al.*

The silicate minerals found in interplanetary dust particles are not seen in Comet 81P/Wild 2, implying that the comet is devoid of material from the outer solar system.

>> *News story p. 401*

CONTENTS continued >>

REPORTS CONTINUED...

GEOCHEMISTRY

Elasticity of (Mg,Fe)O Through the Spin Transition of Iron in the Lower Mantle 451

*J. C. Crowhurst, J. M. Brown, A. F. Goncharov, S. D. Jacobsen*

Gradual softening of a prominent mineral in Earth's lower mantle in response to an electronic phase transition may explain the seismic properties of this region.

GEOCHEMISTRY

Enriched Pt-Re-Os Isotope Systematics in Plume Lavas Explained by Metasomatic Sulfides 453

*A. Luguët et al.*

An isotopic signal thought to be a fingerprint of material from Earth's core in ocean magmas may instead reflect the presence of sulfide mineralization in the melting region.

>> *Perspective p. 418*

CLIMATE CHANGE

Irreconcilable Differences: Fine-Root Life Spans and Soil Carbon Persistence 456

*A. E. Strand et al.*

Two common ways to measure residence times of root carbon in soils measure different things; neither is correct for inferring carbon cycling in ecosystems.

EVOLUTION

Adaptive Plasticity in Female Mate Choice Dampens Sexual Selection on Male Ornaments in the Lark Bunting 459

*A. S. Chaine and B. E. Lyon*

Female lark buntings prefer different male traits from year to year, suggesting how multiple ornamental features might evolve as a result of female mate choice.

MOLECULAR BIOLOGY

Control of Genic DNA Methylation by a *jmjC* Domain-Containing Protein in *Arabidopsis thaliana* 462

*H. Saze, A. Shiraishi, A. Miura, T. Kakutani*

A plant demethylase checks the spread of DNA methylation from silenced transposons and repetitive DNA to nearby genes, preventing their inappropriate inhibition.

MOLECULAR BIOLOGY

Concurrent Fast and Slow Cycling of a Transcriptional Activator at an Endogenous Promoter 466

*T. S. Karpova et al.*

A yeast transcription factor binds onto and off its promoter rapidly, controlling initiation, but also shows a 30-min cycle as the number of accessible promoters varies.

CELL BIOLOGY

Centromeric Aurora-B Activation Requires TD-60, Microtubules, and Substrate Priming Phosphorylation 469

*S. E. Rosasco-Nitcher et al.*

A kinase that regulates chromosome segregation to daughter cells during metaphase is confined to the inner centromere through its interactions with other centromeric proteins.

GENETICS

Alignment Uncertainty and Genomic Analysis 473

*K. M. Wong, M. A. Suchard, J. P. Huelsenbeck*

Comparative evolutionary genomics can be improved by taking into account the uncertainties inherent in aligning genes from organism to organism. >> *Perspective p. 416*

IMMUNOLOGY

NFAT Binding and Regulation of T Cell Activation by the Cytoplasmic Scaffolding Homer Proteins 476

*G. N. Huang et al.*

Signals coming into the T cell are coordinated by two scaffolding proteins, which determine whether the cell will be activated or permanently shut down.

CELL BIOLOGY

The Frequency Dependence of Osmo-Adaptation in *Saccharomyces cerevisiae* 482

*J. T. Mettetal et al.*

Modeling the dynamics of the osmotic stress response in yeast reveals an unexpected, rapid nontranscriptional mechanism that may involve glycerol transport. >> *Perspective p. 417*



462



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CONTENTS continued >>



U.S. jaguars are in danger.

## SCIENCE NOW

[www.sciencenow.org](http://www.sciencenow.org) DAILY NEWS COVERAGE

### No Recovery Plan for U.S. Jaguars

In controversial decision, Fish and Wildlife Service says plan would not promote conservation.

### The Secret Ingredient in Yellowstone's Travertine

Researcher presents first evidence that microbes are key to Mammoth Hot Springs mineralization.

### An Eye for Sexual Orientation

People are able to spot a gay or straight face in less than a second.



Human ITPK1.

## SCIENCE SIGNALING

[www.stke.org](http://www.stke.org) THE SIGNAL TRANSDUCTION KNOWLEDGE ENVIRONMENT

### PERSPECTIVE: Human ITPK1—A Reversible Inositol Phosphate Kinase/Phosphatase that Links Receptor-Dependent Phospholipase C to Ca<sup>2+</sup>-Activated Chloride Channels

*A. Saiardi and S. Cockcroft*

Studies of ITPK1 reveal subtle interconnections between simple metabolism and regulation of a signaling event.

### GLOSSARY

Find out what NOSIP, SIPK, and STAND mean in the world of cell signaling.



Handling troublesome lab colleagues.

## SCIENCE CAREERS

[www.sciencecareers.org](http://www.sciencecareers.org) CAREER RESOURCES FOR SCIENTISTS

### Mastering Your Ph.D.: Dealing With Difficult Colleagues

*P. Gosling and B. Noordam*

Some troublesome types who frequent laboratories require special handling.

### MiSciNet: Educated Woman, Postdoc Edition, Chapter 12—Reflections

*M. P. DeWhyse*

The fog on Micella's steamy mirror starts to clear.

### Opportunities: The Curse of Brains

*P. Fiske*

Effectiveness requires more than just intellectual smarts.

### From the Archives: Scientists as Parents

When it comes to the question of balancing parenting and careers, the answers are contingent on one or two (and eventually more) individuals.

## SCIENCE PODCAST



Download the 25 January *Science* Podcast to hear about improving automatic face recognition, synthesis of a bacterial genome, subtle effects of brain trauma, and more.

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