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## COVER

Skull and shoulders of "Selam"—a 3.3-million-year-old female child *Australopithecus afarensis* from Dikika, Ethiopia. The upside-down view reveals her palate, vertebral column, and both shoulder blades (in this orientation, the scapula on the right measures 60 millimeters across). The scapulae were recently freed from their sandstone matrix and are described in the Report on page 514. The scapulae display several apelike characteristics, implying that *A. afarensis* was still a capable climber.

Image: Zeresenay Alemseged/Dikika Research Project

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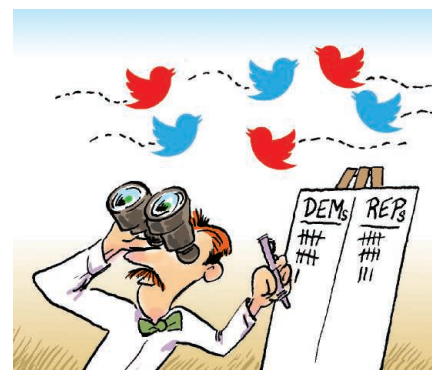
- 496 Detecting Causality in Complex Ecosystems  
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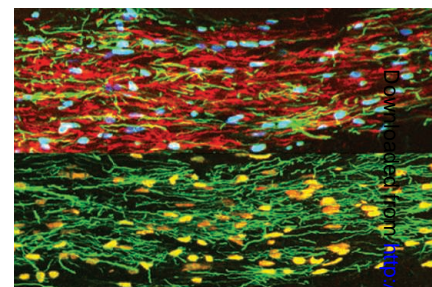
- 500 Biotinylated Rh(III) Complexes in Engineered Streptavidin for Accelerated Asymmetric C–H Activation  
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- 504 Chiral Cyclopentadienyl Ligands as Stereocontrolling Element in Asymmetric C–H Functionalization  
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- 514 *Australopithecus afarensis* Scapular Ontogeny, Function, and the Role of Climbing in Human Evolution  
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- 524 Maturation-Dependent HIV-1 Surface Protein Redistribution Revealed by Fluorescence Nanoscopy  
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- 528 In Vivo Architecture and Action of Bacterial Structural Maintenance of Chromosome Proteins  
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- 532 Regulatory T Cells Increase the Avidity of Primary CD8<sup>+</sup> T Cell Responses and Promote Memory  
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- 536 Elnf1 Regulates Target-Specific Release Probability at CA1-Interneuron Synapses  
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- 540 Oxytocin/Vasopressin-Related Peptides Have an Ancient Role in Reproductive Behavior  
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- 543 Vasopressin/Oxytocin-Related Signaling Regulates Gustatory Associative Learning in *C. elegans*  
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## SCIENCEEXPRESS

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

Publication Ahead of Print

**A Global Pattern of Thermal Adaptation in Marine Phytoplankton**

*M. K. Thomas et al.*

10.1126/science.1224836

**Akt-Mediated Regulation of Autophagy and Tumorigenesis Through Beclin 1 Phosphorylation**

*R. C. Wang et al.*

10.1126/science.1225967

**The *Legionella* Effector RavZ Inhibits Host Autophagy Through Irreversible Atg8 Deconjugation**

*A. Choy et al.*

10.1126/science.1227026

**A Bipolar Spindle of Antiparallel ParM Filaments Drives Bacterial Plasmid Segregation**

*P. Gayathri et al.*

10.1126/science.1229091

**Binary Millisecond Pulsar Discovery via Gamma-Ray Pulsations**

*H. J. Pletsch et al.*

10.1126/science.1229054

## TECHNICAL COMMENTS

**Comment and Response on "Conspecific Negative Density Dependence and Forest Diversity"**

*Comment: I. A. Dickie et al.*

<http://dx.doi.org/10.1126/science.1225520>

*Response: D. J. Johnson et al.*

<http://dx.doi.org/10.1126/science.1225996>

## SCIENCE NOW

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Highlights From Our Daily News Coverage

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A new study supports the idea that cooking helped human ancestors expand their minds.

[http://scim.ag/Big\\_Brains](http://scim.ag/Big_Brains)

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A temple erected by a Roman emperor is among the earliest evidence of orchids in Western art.

[http://scim.ag/Evidence\\_Orchids](http://scim.ag/Evidence_Orchids)

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Researchers find deadly hospital bacterium in rabbits and a migratory shorebird.

<http://scim.ag/Hospital-Bacterium>

## SCIENCE SIGNALING

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

The Signal Transduction Knowledge Environment

**23 October issue: <http://scim.ag/ss102312>**

**RESEARCH ARTICLE: Akt Phosphorylates the Transcriptional Repressor Bmi1 to Block Its Effects on the Tumor Suppressing *Ink4a-Arf* Locus**

*Y. Liu et al.*

## PODCAST

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**Akt counteracts growth-promoting signals by stimulating the transcription of tumor suppressor genes.**

**PERSPECTIVE: PKR-Dependent Inflammatory Signals**

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**The RNA-dependent protein kinase activates the inflammasome to promote inflammation.**

**PRESENTATION: The Effect of Acute and Chronic Stress on Growth**

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**The glucocorticoids and inflammatory cytokines induced by stress can impair bone growth.**

**PRESENTATION: The Effects of Acute and Chronic Stress on Diabetes Control**

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**Stress-induced hormonal changes alter glucose homeostasis in both diabetic and healthy patients.**

**PRESENTATION: P450 Oxidoreductase Deficiency—A Disorder of Steroidogenesis with Multiple Clinical Manifestations**

*W. L. Miller et al.*

**Mutations in a steroid biosynthetic enzyme cause a range of clinical symptoms.**

## SCIENCE TRANSLATIONAL MEDICINE

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Integrating Medicine and Science

**24 October issue: <http://scim.ag/ss102412>**

**RESEARCH ARTICLE: NADPH Oxidase Inhibits the Pathogenesis of Systemic Lupus Erythematosus**

*A. M. Campbell et al.*

**Neutrophil NETs are not required for SLE development in a mouse model.**

**RESEARCH ARTICLE: Targeting Cancer with a Lupus Autoantibody**

*J. E. Hansen et al.*

## FOCUS: Lupus Antibody Tops Cancer Cells

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**A cell-penetrating lupus anti-DNA antibody inhibits DNA repair and is toxic to cancer cells.**

**RESEARCH ARTICLE: Quantitative Image Analysis of Cellular Heterogeneity in Breast Tumors Complements Genomic Profiling**

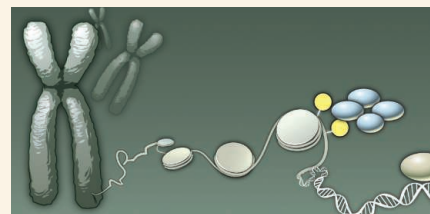
*Y. Yuan et al.*

**Quantitative image analysis of breast tumors contributes to a predictor of survival.**

**FOCUS: Building a Life Sciences Innovation Ecosystem**

*K. D. Harrison et al.*

**Universities should support research with commercial potential.**



## SCIENCE SIGNALING

Silencing a transcriptional silencer.

## SCIENCE CAREERS

[www.sciencecareers.org/career\\_magazine](http://www.sciencecareers.org/career_magazine)

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**<http://scim.ag/SciCareers26October2012>**

**Experimental Error: A Cure for Listlessness**

*A. Ruben*

**Our columnist lists the top N of everything in science careers, where N = fun.**

**Teaching Postdocs to Be Professors**

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**An NIH program readies teaching-focused postdocs—especially minorities—for lab-and-classroom jobs.**

**Life at the Bottleneck**

*R. Müller*

**A social scientist discusses how career pressures affect how postdocs work and relate in the lab.**

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**338 (6106)**

*Science* **338** (6106), 439-549.

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