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Recycling aluminum cans (shown here in bales at a facility in Philadelphia, PA) is just one of the many approaches directed toward doing something productive with the world’s ever-expanding stream of waste. In the special section Working with Waste (page 662), we survey multifaceted efforts to tackle this global challenge. For the story behind the cover, go to http://scim.ag/cover095.

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713  Exceptional Activity for Methane Combustion over Modular Pd@CeO$_2$ Subunits on Functionalized Al$_2$O$_3$  
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724  Earthquake in a Maze: Compressional Rupture Branching During the 2012 $M_w$ 8.6 Sumatra Earthquake  
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749  Bergmann Glial AMPA Receptors Are Required for Fine Motor Coordination  
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Signaling by glial cells helps to preserve cerebellar neurons that control movements.

753  The Pulvinar Regulates Information Transmission Between Cortical Areas Based on Attention Demands  
Y. B. Saalmann et al.  
A region of the thalamus synchronizes neuronal firing in two cortical areas and thus allocates attention.
New observations roll in just minutes after Curiosity's touchdown.

Mars Rover Already Doing Science

A study fills in the genetic map of Jewish history.

'black drink' at least 700 years ago.

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SCIENCE

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Serotonergic Neuron Inhibition"

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Conformational Control of the Ste5 Scaffold Protein Insulates Against MAP Kinase Misactivation J. G. Zalatan et al.

A scaffold protein controls signal transmission by using an auto-inhibitory domain as a gate. 10.1126/science.1220939

Highly Conserved Protective Epitopes on Influenza B Viruses C. Dreyfus et al.

Three broadly neutralizing human monoclonal antibodies protect mice against influenza B. 10.1126/science.1222908

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PODCAST

Garbology 101, challenges in metal recycling, the “yuck factor,” and an end to waste.

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The Signal Transduction Knowledge Environment

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RESEARCH ARTICLE: Microtubules Underlie Dysfunction in Duchenne Muscular Dystrophy R. J. Khairallah et al.

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C. W. Ward et al.

Decreasing microtubule density reduces contraction-induced muscle injury.

RESEARCH ARTICLE: Nucleolar Localization of a Netrin-1 Isoform Enhances Tumor Cell Proliferation C. Dellaoye-Bourgeois et al.

A nucleolar-localized isoform of netrin may enhance ribosome biogenesis to promote cancer growth.

REVIEW: The Abluminal Endothelial Membrane in Neurovascular Remodeling in Health and Disease D. M. Hermann and A. Eilä Understand brain vascular remodeling may allow effective intervention in cases of injury or disease that disrupt the blood-brain barrier.

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Integrating Medicine and Science

8 August issue: http://scimap.org/stm080812


The Hendra virus attachment G glycoprotein fully protects nonhuman primates from lethal Nipah virus challenge.

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RESEARCH ARTICLE: Selective Activation of Adenosine A_{2A} Receptors on Immune Cells by a CD73-Dependent Pro-Drug Suppresses Joint Inflammation in Experimental Rheumatoid Arthritis U. Flögel et al.

PERSPECTIVE: The Outsiders—Emerging Roles of Ectonucleotidases in Inflammation C. Szabo and P. Pacher

Phosphorylated adenosine A_{2A} receptor agonists suppressed inflammation in a model of arthritis without A_{2A}-mediated vasodilatory side effects.

RESEARCH ARTICLE: Instructive Nanofiber Scaffolds with VEGF Create a Microenvironment for Arteriogenesis and Cardiac Repair Y.-D. Lin et al.

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An intramyocardial microenvironment was created using nanofibers and VEGF for endogenous cardiac repair after infarction.

RESEARCH ARTICLE: A Combination of Buprenorphine and Naltrexone Blocks Compulsive Cocaine Intake in Rodents Without Producing Dependence S. Wee et al.

An opioid agonist and antagonist, given together, decrease cocaine abuse in rodents without causing dependence and provide a potential treatment for cocaine addiction.

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Adaptive Sleep Loss in Polygynous Pectoral Sandpipers J. A. Leski et al.

Male sandpipers spend their Arctic days mating instead of sleeping.

10.1126/science.1225636

Highly precise mass measurements of nobelium Challenges in metal recycling, the “yuck factor,” and an end to waste.

E. Minaya Ramirez et al.

Direct Mapping of Nuclear Shell Effects in the Heaviest Elements E. Minaya Ramirez et al.

Highly precise mass measurements of nobelium and lawrencium isotopes provide insight into superheavy element stability.

10.1126/science.1225636

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