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>> Policy Podcast
Listen to an interview with Perspective author Eric Miska on using RNA as a signaling molecule between organisms.
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COVER
Clouds pass over Kenya’s Lake Magadi, where geologists are drilling a core to gather detailed climate data from the ancient lake bed. Data on past climates are vital for researchers seeking to understand how anthropogenic climate change will affect Earth’s ecosystems and species, including its effects on infectious diseases and food security. See the special section beginning on page 472.

Photo: © Martin Harvey/Alamy
Anthropogenic Seismicity Rates and Efficient Generation of H2
H. A. Eskandarian et al.
The bacterial pathogen Listeria monocytogenes exploits histone modifications to reprogram its host.
Research Article Summary; for full text: http://dx.doi.org/10.1126/science.1238858

The Evolution of Social Monogamy in Mammals
D. Lukas and T. H. Clutton-Brock
Social monogamy developed in mammalian species where males could not defend access to multiple females.
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Hierarchical Porous Polymer Scaffolds from Block Copolymers
H. Sai et al.
Spinal decomposition of block copolymers and oligomeric additives produces three-dimensional hierarchical porous polymers.

Liquid-Mediated Dense Integration of Graphene Materials for Compact Capacitive Energy Storage
X. Yang et al.
Electrochemical capacitors made with compressed gels of chemically converted graphene exhibit high energy density.

Detection of a Spinning Object Using Light’s Orbital Angular Momentum
M. P. J. Lovey et al.
Orbital angular momentum modes of light can be used to detect rotation.
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Efficient Generation of H2 by Splitting Water with an Isotothermal Redox Cycle
C. L. Muhich et al.
A thermal process for generating H2 from water uses pressure changes to recycle between catalyst redox states.
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Anthropogenic Seismicity Rates and Operational Parameters at the Salton Sea Geothermal Field
E. E. Brodsky and L. J. Lajoie
The net volume of geothermal fluid extracted is the most direct control on induced seismicity rate.

Two Dimensions of Value: Dopamine Neurons Represent Reward But Not Aversiveness
C. D. Fiorillo
Experiments in monkeys suggest that positive and negative expectations are represented by different types of neurons.

Functional LysineModification by an Intrinsically Reactive Primary Glycolytic Metabolite
R. E. Moellinger and B. F. Cravatt
A reactive intermediate formed during glycolysis reacts nonenzymatically to inhibit glycolytic enzymes.

Cytochrome P450 Drives a HIF-Regulated Behavioral Response to Reoxygenation by C. elegans
D. K. Ma et al.
A worm model of ischemia-reperfusion injury reveals protective mechanisms potentially relevant to stroke and heart attack.

Robustness and Compensation of Information Transmission of Signaling Pathways
S. Uda et al.
Information theory analysis of cell signaling reveals mechanisms for reliable cellular responses despite signal variability.

Sequencing Y Chromosomes Resolves Discrepancy in Time to Common Ancestor of Males Versus Females
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Global diversity in the Y chromosome and mitochondrial DNA coalesce at approximately the same times in humans.
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Low-Pass DNA Sequencing of 1200 Sardinian Reconstructs European Y-Chromosome Phylogeny
P. Francalacci et al.
Local human demographic history is inferred from in-depth DNA sequence analyses of Sardinian men’s Y chromosomes.
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The Microbial Metabolites, Short-Chain Fatty Acids, Regulate Colonic Treg Cell Homeostasis
P. M. Smith et al.
Bacterial fermentation products regulate the number and function of regulatory T cells in the mouse colon.
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