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ON THE WEB THIS WEEK
>> Science Podcast
Listen to stories on the minimum requirements for a Y chromosome, the future of missile defense, details of an extraordinary gamma-ray burst, and more.

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COVER
Hit distribution (red, early; green, late) of a neutrino interaction with the Antarctic IceCube neutrino detector on 14 July 2011. Light from this transfer of 250 teraelectron volts of energy fills a sphere 600 meters across. This event, among the highest-energy neutrino interactions ever observed, forms part of the first evidence for a high-energy neutrino flux of astrophysical origin. See pages 920 and 947 and http://dx.doi.org/10.1126/science.1242856.

Credit: IceCube Collaboration
964 Constraints on the Late Holocene Anthropogenic Contribution to the Atmospheric Methane Budget L. Mitchell et al.

Records derived from polar ice cores provide constraints on methane emissions during the late preindustrial Holocene. >> News story p. 918

967 Commensal Bacteria Control Cancer Response to Therapy by Modulating the Tumor Microenvironment N. Iida et al.

971 The Intestinal Microbiota Modulates the Anticancer Immune Effects of Cyclophosphamide S. Vlaut et al.

The gut microbiota promote the efficacy of several antineoplastic agents in mice. >> News story p. 921

976 Substitutions Near the Receptor Binding Site Determine Major Antigenic Change During Influenza Virus Evolution B. F. Koel et al.

The major antigenic changes of the influenza virus are primarily caused by a single amino acid near the receptor binding site.

979 Yeast Reveal a “Druggable” RpS5/Nedd4 Network that Ameliorates α-Synuclein Toxicity in Neurons D. F. Tardiff et al.

Screening in yeast yields an effective therapeutic for Parkinson’s patient-derived neuronal stem cells.

983 Identification and Rescue of α-Synuclein Toxicity in Parkinson Patient-Derived Neurons C. Y. Chung et al.

Studies in mice and rats elucidate the function of a protein encoded by a gene that affects language. >> Perspective p. 944

987 The Human Language–Associated Gene SRPX2 Regulates Synapse Formation and Vocalization in Mice G. M. Sia et al.

Studies in mice and rats elucidate the function of a protein encoded by a gene that affects language.

995 Defining Stem Cell Dynamics in Models of Intestinal Tumor Initiation L. Vermeulen et al.

Common genetic alterations during tumor initiation in the mouse gut reveal clonal advantages. >> Perspective p. 938