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ON THE WEB THIS WEEK
>> Science Podcast
This week’s show features a study on tracing
autism’s developmental roots and a roundup
of stories from our daily news site.
>> Find More Online
Check out the latest in a series of Perspectives
on Challenges in Climate Science at
www.sciencemag.org/extra/climate.

COVER
Water swirls in a vortex above two millimeter-sized coral polyps
(pink and purple) in “Invisible Coral Flows,” which won first place in
the photography category of the 2013 Science/NSF International
Science & Engineering Visualization Challenge. The vortex, driven by
the polyps’ wafting cilia, helps the coral draw in nutrients and sweep
away waste products. The winning entries are featured in a special

Photo: Vicente I. Fernandez, Orr H. Shapiro, Melissa S. Garren,
Assaf Vardi, Roman Stocker/Massachusetts Institute of Technology

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628 Secreting and Sensing the Same Molecule Allows Cells to Achieve Versatile Social Behaviors
H. Youk and W. A. Lim
The etiquette of yeast cells that secrete signals that influence themselves and their neighbors is explored.
Research Article Summary; for full text: http://dx.doi.org/10.1126/science.1242782
>> Perspective p. 624

REPORTS

629 Classification of Interacting Electronic Topological Insulators in Three Dimensions
C. Wang et al.
Six symmetry-protected topological phases that have no counterpart in noninteracting systems are identified.

631 1D-1D Coulomb Drag Signature of a Luttinger Liquid
D. Laroche et al.
An upturn in the temperature dependence of the drag resistance of two closely-spaced conducting wires is observed.

634 Elastic Instability of a Crystal Growing on a Curved Surface
G. Meng et al.
Constant-background Gaussian curvature alters crystal growth and favors the formation of anisotropic, ribbon-like domains.

637 Rapid Soil Production and Weathering in the Southern Alps, New Zealand
I. J. Larsen et al.
Fast weathering rates in the New Zealand Alps point to a strong influence of tectonic processes on global climate.

641 Periodic Variability in the Large-Scale Southern Hemisphere Atmospheric Circulation
D. W. J. Thompson and E. A. Barnes
Large-scale atmospheric circulation in the Southern Hemisphere oscillates on a time scale of roughly 20 to 30 days.

645 A Promiscuous Intermediate Underlies the Evolution of LEAFY DNA Binding Specificity
C. Sayou et al.
Comparative and structural studies reveal how an essential plant transcription factor evolved different specificities.

649 PCP and Septins Compartmentalize Cortical Actomyosin to Direct Collective Cell Movement
A. Shindo and J. B. Wallingford
A mechanism is revealed for orchestrated cell movement during gastrulation in Xenopus.

653 Distribution of ESCRT Machinery at HIV Assembly Sites Reveals Virus Scaffolding of ESCRT Subunits
S. B. Van Engelenburg et al.
ESCRT-III proteins scaffold within assembling HIV particles to mediate viral membrane abscission.

656 A Structurally Distinct Human Mycoplasma Protein that Generically Blocks Antigen-Antibody Union
R. K. Grover et al.
High-affinity binding of Protein M to a very broad range of human antibodies may find widespread immunochemical applications.

661 Interchromosomal Communication Coordinates Intrinsically Stochastic Expression Between Alleles
R. J. Johnston Jr. and C. Desplan
A stochastic, cell-autonomous decision to express a particular transcription factor is nevertheless coordinated.

665 Loose Coupling Between Ca** Channels and Release Sensors at a Plastic Hippocampal Synapse
N. P. Vyleta and P. Jonas
The mossy fiber to the CA3 synapse operates via loose calcium microdomains established by local calcium buffering.

670 Local Impermeant Anions Establish the Neuronal Chloride Concentration
J. Glykys et al.
Imaging of a fluorescent chloride indicator reveals a role for impermeant anions in setting intraneuronal chloride levels.

675 Oxytocin-Mediated GABA Inhibition During Delivery Attenuates Autism Pathogenesis in Rodent Offspring
R. Tyzio et al.
Maternal administration of bumetanide before delivery reduces the autistic phenotype in rodent models of autism.

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