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ON THE WEB THIS WEEK
>> Science Podcast
Listen to stories on the quantum cryptography arms race, salt-starved ecosystems, and more.

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Check out the latest in a series of Perspectives on Challenges in Climate Science at www.sciencemag.org/extra/climate.

COVER
A circulator for sound. The arrows represent acoustic signals flowing through the device (diameter: ~20 centimeters), which circulates sound in a nonreciprocal fashion: Signals can flow from left to top, from top to right, and from right to left, but not in the opposite directions. This creates one-way communication channels for sound, allowing listeners to hear but not be heard in return. See pages 495 and 516.

Image: Erik Zumalt, Cockrell School of Engineering, The University of Texas at Austin

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Published by AAAS
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A. Simoni et al.
Flies use a mechanosensory organ to sense a low-frequency vibration and reset the brain’s biological clock.

Marine Tubeworm Metamorphosis Induced by Arrays of Bacterial Phage Tail–Like Structures
N. J. Shikuma et al.
Benthic marine larval development is triggered by a bacterially expressed structure of phage origin.

Reversal of Female Infertility by Chk2 Ablation Reveals the Oocyte DNA Damage Checkpoint Pathway
E. Bolcun-Filas et al.
Elucidation of a system that monitors DNA damage in both meiotic and resting oocytes in mice is shown.

Timing Mechanism Dependent on Cell Division Is Invoked by Polycomb Eviction in Plant Stem Cells
B. Sun et al.
A regulatory circuit controlling plant flowering genes leads the way to reconstruction of a time-delay control system.

Exome Sequencing Links Corticospinal Motor Neuron Disease to Common Neurodegenerative Disorders
G. Novarino et al.
Analysis of hereditary spastic paraplegia genes identifies mutants involved in human neurodegenerative disease.

Ultrafast Long-Range Charge Separation in Organic Semiconductor Photovoltaic Diodes
S. Gélinas et al.
Ultrafast spectroscopy shows electrons and holes separating faster than simple diffusion would imply in organic photovoltaics.

Sound Isolation and Giant Linear Nonreciprocity in a Compact Acoustic Circulator
R. Fleury et al.
Directional fluid flow is used to control and isolate the propagation of sound.

Unlocking the Potential of Cation-Disordered Oxides for Rechargeable Lithium Batteries
J. Lee et al.
Cation-disordered compounds achieve high lithium (Li) storage capacity, with scope for high-energy density Li battery electrodes.

Low Core–Mantle Boundary Temperature Inferred from the Solidus of Pyrolite
R. Nomura et al.
High-pressure experiments suggest that Earth’s mantle melts at lower temperatures than previously predicted.

Savanna Vegetation–Fire–Climate Relationships Differ Among Continents
C. E. R. Lehmann et al.
Evolution cannot be overlooked when aiming to predict the potential global impacts on savanna dynamics in a warming world.

Reward Female pheromones are bad for male flies.
C. M. Gendron et al.
Female pheromones are bad for male flies.

Drosophila Life Span and Physiology Are Modulated by Sexual Perception and Reward
C. M. Gendron et al.
Male nematodes produce a soluble signal that shortens the life span of worms of the opposite sex.

Mating Induces Shrinking and Death in Caenorhabditis Mothers
C. Shi and C. T. Murphy
Sperm and seminal fluid cause Caenorhabditis mothers to die shortly after they produce offspring.

Males Shorten the Life Span of C. elegans Hermaphrodites via Secreted Compounds
T. J. Maures et al.
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Effector Specialization in a Lineage of the Irish Potato Famine Pathogen
S. Dong et al.
A potato pathogen has changed one of its protease inhibitors that targets its new host plant protease.

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