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High-resolution (0.25 meters per pixel) hillshade map showing the topography of the San Andreas Fault in the Carrizo Plain of California. Two stream channels that bend at the fault have been displaced about 10 meters (lower right) by two earthquakes and 16 meters (upper left) by as many as five earthquakes, including the most recent earthquake in 1857. Blue indicates lower elevations. See pages 1117 and 1119.

Image: O. Zielke, J. R. Arrowsmith/Arizona State University; L. Grant Ludwig, S. O. Akçiz, G. R. Noriega/University of California, Irvine; topography data gathered by the B4 Project and processed by OpenTopography

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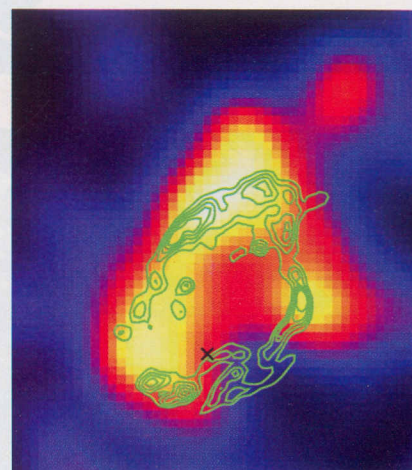
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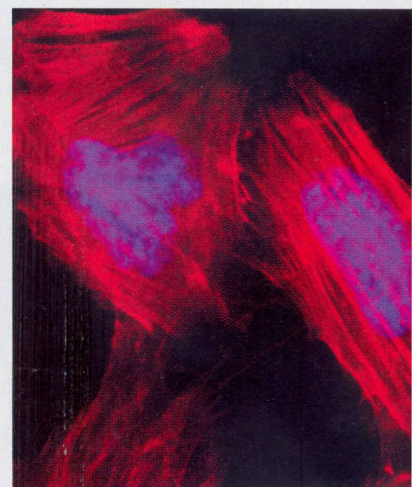
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Plasticity in the mouse brain's visual cortex can be re-induced by neurons embedded by an earlier transplantation.

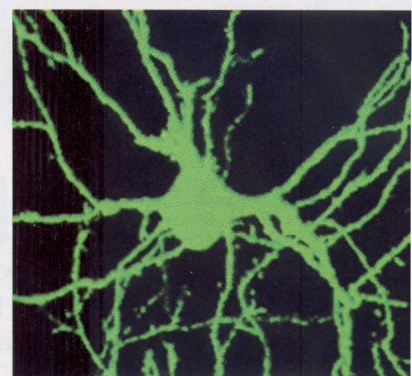
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CKAMP44: A Brain-Specific Protein Attenuating Short-Term Synaptic Plasticity in the Dentate Gyrus

J. von Engelhardt et al.

A synaptic protein that regulates postsynaptic AMPA receptor responses has been cloned and functionally characterized.
10.1126/science.1184178

β_2 -Adrenergic Receptor Redistribution in Heart Failure Changes cAMP Compartmentation

V. O. Nikolaev et al.

A change in the distribution of a signaling molecule on the surface of heart muscle cells may contribute to heart failure.
10.1126/science.1185988

Unicellular Cyanobacterial Distributions Broaden the Oceanic N_2 Fixation Domain

P. H. Moisaner et al.

Nitrogen fixation in the South Pacific Ocean is partitioned among several microbe species with distinct ecophysiologicals.
10.1126/science.1185468

Patterns of Diversity in Marine Phytoplankton

A. D. Barton et al.

Highest diversity occurs in physically dynamic mid-latitude zones; lowest diversity and highest biomass occur toward the poles.
10.1126/science.1184961

Constraints on the Formation Age of Cometary Material from the NASA Stardust Mission

J. E. P. Matzel et al.

Transport of inner solar system material to the Kuiper Belt and incorporation into comets took at least 2 million years.
10.1126/science.1184741

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Is a Dolphin a Person?

Dolphin intelligence poses tricky scientific and ethical questions.

Lack of Sleep Is Contagious

Sleep-deprived teens tend to have sleep-deprived friends and friends who use drugs.

The Mathematics of Clumpy Crime

Models may help police break up criminal hot spots.

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RESEARCH ARTICLE: Apoptotic Cells Activate the "Phoenix Rising" Pathway to Promote Wound Healing and Tissue Regeneration

F. Li et al.

PODCAST

C.-Y. Li and A. M. VanHook

Caspases in dying cells trigger the release of growth signals that promote tissue repair.

RESEARCH ARTICLE: DNA-PKcs Controls an Endosomal Signaling Pathway for a Proinflammatory Response by Natural Killer Cells

S. Rajagopalan et al.

Akt and DNA-dependent protein kinase are required for the activation of NF- κ B by an endosomal receptor.

PERSPECTIVE: A New Role for RPTP σ in Spinal Cord Injury—Signaling Chondroitin Sulfate Proteoglycan Inhibition

Y. Duan and R. J. Giger

RPTP σ mediates the inhibitory effects of chondroitin sulfate proteoglycans on axonal growth.

PERSPECTIVE: ER Stress in Pancreatic β Cells—The Thin Red Line Between Adaptation and Failure

D. L. Eizirik and M. Cnop

The response of IRE1 α to metabolic ER stress is modulated by its interaction with RACK1.

FUNDING SOURCES

Find grants and funding opportunities for research and training in cell signaling.

SCIENCE CAREERS

www.sciencereers.org/career_magazine

Free Career Resources for Scientists

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E. Pain

Laia Crespo accumulated academic and business credentials to build a career in investment management.

For Physician-Scientist Couple, Success Is in Balance

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Deepali Kumar and Atul Humar say their shared specialty helps them balance work and family life.

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RESEARCH ARTICLE: Development of Personalized Tumor Biomarkers Using Massively Parallel Sequencing

R. J. Leary et al.

PERSPECTIVE: Cancer Sequencing Gets a Little More Personal

L. Prokunina-Olsson and S. J. Chanock

Technology to detect personal genetic aberrations in cancer cells moves closer to the clinic.

RESEARCH ARTICLE: Adipocyte-Derived Factors Potentiate Nutrient-Induced Production of Plasminogen Activator Inhibitor-1 by Macrophages

P. Kishore et al.

PERSPECTIVE: Adipose Tissue Macrophages—A Piece of the PAI of Metabolic Syndrome

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Macrophages within fat tissue release a hormone that contributes to atherosclerosis and insulin resistance.

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Science Policy News and Analysis

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