

25 March 2011 | \$10

Science

CANCER CRUSADE at **40**

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Cancer Crusade at 40

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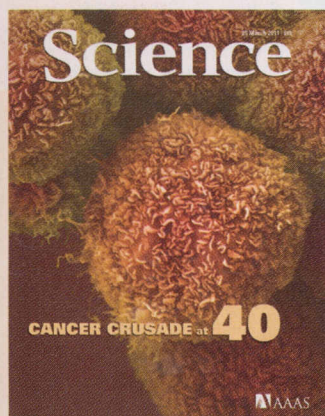
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False-color scanning electron micrograph of cells from pancreatic cancer (cell in center is ~10 μ m across), one of the cancer types whose incidence and mortality rates have not changed significantly since the 1970s. The United States National Cancer Act, signed in 1971, aimed to eliminate cancer deaths through a massive increase in research funding. A special section beginning on p. 1539 examines the state of this Cancer Crusade 40 years later.

Image: Anne Weston, Cancer Research UK, Visuals Unlimited, Inc.

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1592 Widespread Persistent Thickening of the East Antarctic Ice Sheet by Freezing from the Base

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L. Persha et al.
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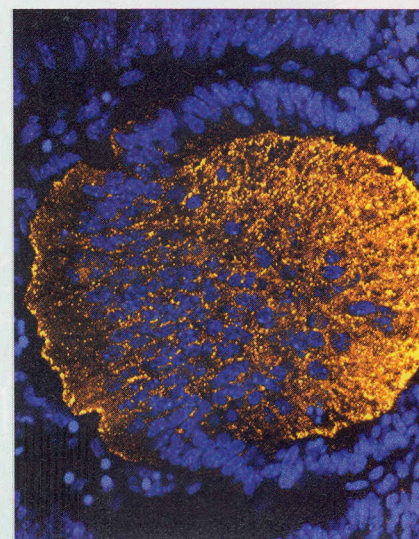
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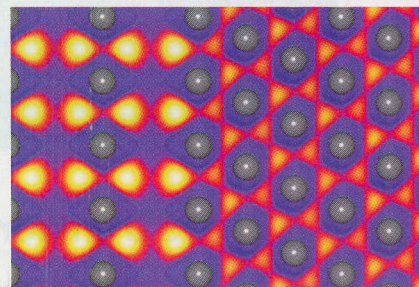
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Eosinophils Sustain Adipose Alternatively Activated Macrophages Associated with Glucose Homeostasis

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Regulation of adipose tissue macrophages by eosinophils reveals an unexpected role for eosinophils in metabolic homeostasis.
10.1126/science.1201475

Conserved Eukaryotic Fusogens Can Fuse Viral Envelopes to Cells

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A *Caenorhabditis elegans* cell-surface fusion protein can promote viral fusion with mammalian cells.
10.1126/science.1202333

AMP-Activated Protein Kinase Regulates Neuronal Polarization by Interfering with PI 3-Kinase Localization

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A bioenergy-sensing pathway determines axon initiation and growth in neurons.
10.1126/science.1201678

Global Trends in Wind Speed and Wave Height

I. R. Young et al.

Wind speeds over the world's oceans have increased over the past two decades, as have wave heights.
10.1126/science.1197219

Polarized Gamma-Ray Emission from the Galactic Black Hole Cygnus X-1

P. Laurent et al.

This gamma-ray emission originates from a jet of relativistic particles that is formed in close proximity to the black hole.
10.1126/science.1200848

SCIENCENOW

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Highlights From Our Daily News Coverage

Long-Neglected Experiment Gives New Clues to Origin of Life

A 53-year-old flask containing brown sludge may reveal how the first amino acids were created.
<http://scim.ag/old-experiment>

Navy Sonar May Mimic Killer Whale Sounds

This finding could explain cetacean strandings.
<http://scim.ag/whale-sonar>

Cause of Lethal Disease in China Unmasked

A new bunyavirus poses some riddles.
<http://scim.ag/lethal-disease>

SCIENCE SIGNALING

www.sciencesignaling.org

The Signal Transduction Knowledge Environment

22 March issue: <http://scim.ag/22Mar2011>

RESEARCH ARTICLE: In Vivo Systems Analysis Identifies Spatial and Temporal Aspects of the Modulation of TNF- α -Induced Apoptosis and Proliferation by MAPKs

K. S. Lau et al.

A systems-level analysis of signaling in the mouse intestine identifies critical mediators of inflammation and regionally specific responses.

PERSPECTIVE: CD69—An Unexpected Regulator of T_H17 Cell-Driven Inflammatory Responses

P. Martin and F. Sánchez-Madrid

CD69 deficiency promotes differentiation of inflammatory T_H17 cells and exacerbates autoimmune diseases in mice.

MEETING REPORT: The Yin and Yang of Signaling in T_{reg}s and T_H17 Cells

F. Pan et al.

This meeting in Shanghai focused on the relationship between regulatory and inflammatory T cells.

FUNDING SOURCES

Check out the new opportunities for funding signaling research and training.

SCIENCE CAREERS

www.sciencereers.org/career_magazine

Free Career Resources for Scientists

CTSciNet: Conducting Cancer Clinical Trials

K. Hede

Training courses teach young cancer researchers the skills needed to design and carry out clinical trials.
<http://scim.ag/cancertrialstraining>

CTSciNet Q&A: Finding and Exploiting Cancer's Weaknesses

K. Travis

Clinician-investigator David Solit studies the genetic basis of cancer tumors and looks for novel therapies that target specific mutations.
<http://scim.ag/solitqanda>

SCIENCE TRANSLATIONAL MEDICINE

www.sciencetranslationalmedicine.org

Integrating Medicine and Science

23 March issue: <http://scim.ag/stm032311>

COMMENTARY: A National Cancer Clinical Trials System for Targeted Therapies

J. Mendelsohn

Clinical cancer research requires a well-supported and efficient national clinical trials network that engages in innovative trials of modern cancer therapies.

COMMENTARY: Accrual to Cancer Clinical Trials in the Era of Molecular Medicine

R. L. Schilsky

In the testing of targeted cancer therapies, new issues can complicate the decision by patients or providers to participate in clinical trials.

RESEARCH ARTICLE: Breast Cancer Methylomes Establish an Epigenomic Foundation for Metastasis

F. Fang et al.

PODCAST

T. A. Chan and A. Colmone

Breast cancer methylomes contribute to metastatic potential, modulate the metastasis transcriptome, and predict disease outcome.

RESEARCH ARTICLE: Genotypic and Histological Evolution of Lung Cancers Acquiring Resistance to EGFR Inhibitors

L. V. Sequist et al.

Lung cancers undergo dynamic genetic and histological changes upon developing resistance to EGFR inhibitors.

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SCIENCEPODCAST

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Free Weekly Show

On the 25 March *Science* Podcast: targeted cancer therapy, progress with cancer genomes, mechanisms of metastasis, immunity's role in cancer, and more.

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Science Policy News and Analysis

VIDEOFEATURE

video.sciencemag.org

Sequencing Cancer Genomes: Targeted Cancer Therapies

Applying DNA sequencing to cancer genomes is providing insights that have allowed researchers to turn some cancers into chronic diseases rather than deadly ones. Still, the ultimate goal is to kill the cancer.

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and www.sciencemag.org/special/cancer2011/

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