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Fluorescence microscopy image showing fragmentation
of chromosomal DNA (green) during programmed cell death
or apoptosis in a Caenorhabditis elegans embryo. Chromosomes
are stained blue and nuclear envelopes red. During apoptosis,
the ribonuclease Dicer, known for its role in gene silencing,
is converted to a deoxyribonuclease and initiates this
DNA fragmentation process. See page 327.

Image: Jay Parrish/University of Colorado

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SCIENCENOW  
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Earth-Like Planets May Abound In the Milky Way  
Dying stars reveal the chemical signatures of rocky worlds.  

Cholesterol Genetically Linked to Eye Disease  
Scientists uncover connection between age-related macular degeneration and a gene that regulates good cholesterol.  

When Social Fear Disappears, So Does Racism  
Children with genetic disorder shed light on the roots of racial prejudice.

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The Signal Transduction Knowledge Environment  

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A microRNA network regulates the tumor suppressor PTEN in prostate cancer.

PER SPECTIVE: Not Lost in Space—Trafficking in the Hedgehog Signaling Pathway  
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Free Career Resources for Scientists  
Conventions of Scientific Authorship  
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Adding Humanitarian Value to Mathematics  
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THE GONZO SCIENTIST  
The Gonzo Scientist travels to Senegal with an astrophysicist to deliver the universe to remote villagers.

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PER SPECTIVE: Optimal Control of Blood Glucose—The Diabetic Patient or the Machine?  
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Diabetic patients may benefit from a device that uses a computer algorithm to deliver proper amounts of insulin and glucagon.

PER SPECTIVE: Challenges in Using Stem Cells for Cardiac Repair  
C. L. Mummery et al.  
Stem cell–derived cardiomyocytes offer promise for treating damage caused by heart attacks.

RESEARCH: A Bi-Hormonal Closed-Loop Artificial Pancreas for Type 1 Diabetes  
F. H. El-Khatib et al.  
An algorithm continuously delivers appropriate insulin and glucagon doses to diabetic patients, maintaining their blood glucose at normal values, even after high-carbohydrate meals.

T. Janowitz and D. K. Menon  
The methods and devices used in the clinical management of neurological patients can provide data to facilitate progress in treating brain trauma.

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