IMAGES

SPACE CINEMA

The Milky Way ensnares a neighboring galaxy, squashes it, and sucks it into orbit. A pale bubble bulges from the sun's surface and then explodes into a ragged fountain. Those are just two of the dramatic selections you can screen at the Astrophysics Visualization Archive from the American Museum of Natural History's Hayden Planetarium. Produced by researchers at various institutions, the site's 50 movies and animations show off topics in planetary science and astronomy. The ripples in this still (above), for example, illustrate how a cluster of galaxies warps passing light, a phenomenon known as gravitational lensing. >> haydenplanetarium.org/hp/vo/ava/index.html

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WEB TEXT

Elemental, My Dear Watson

Published in the 3rd century B.C.E., Euclid's *Elements* stood as the authority on geometry for more than 2000 years. In this Web edition of the classic text, math professor David Joyce of Clark University in Worcester, Massachusetts, furnishes explanatory notes and updates. The pages also feature Java applets so that readers can, say, fiddle with the dimensions of a triangle to convince themselves of Proposition 6 from Book I, which holds that if two angles in a triangle are equal, the sides opposite them are also equal. >> aleph0.clarku.edu/~djoyce/java/elements/elements.html

LINKS

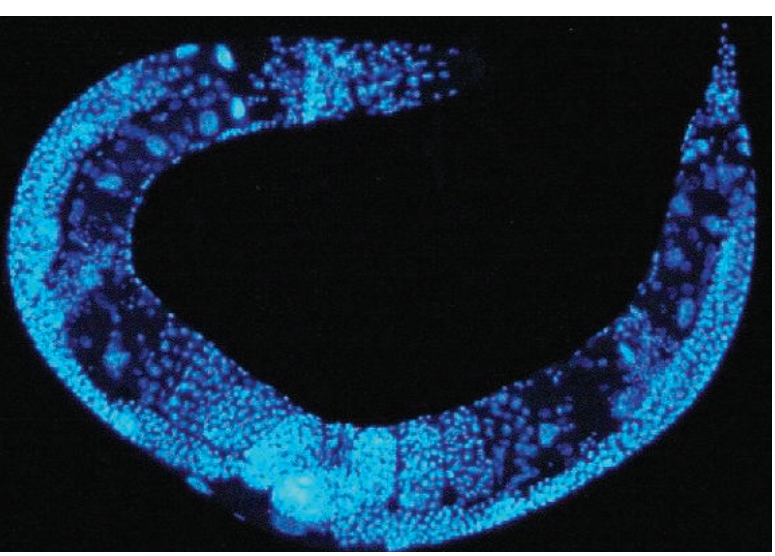
Let's Get Analytical

Looking for virtual experiments to introduce students to the idea of chemical equilibrium? How about a primer on flow injection analysis? Drop by the Analytical Sciences Digital Library, edited by Cynthia Larive of the University of California, Riverside. The site houses annotated links to more than 300 sites about chemical measurements and instruments. Aimed at high school through professional levels, the offerings include class notes, tutorials, simulations, and protocols. To help teachers share ideas, the site also posts original content, such as a complete lab manual and other peer-reviewed contributions. Online forums let users discuss how to integrate the materials into class. >> www.asdlib.org

DATABASE

Blood Work

Because it ferries most of the proteins in the body, blood is a rich resource for doctors trying to diagnose disease and researchers fishing for new molecules. Tap into a comprehensive list of blood proteins at the Plasma Proteome Database from Johns Hopkins University in Baltimore, Maryland, and the Institute of Bioinformatics in Bangalore, India. Stowed here are data from the literature on the more than 7500 protein variants that enter the plasma at some time. For each version, or isoform, you'll find standard genomic information such as gene and amino acid sequences. Entries also indicate the molecule's usual cellular location, whether its gene harbors any common mutations, and whether it contributes to any diseases. You can also link to PubMed abstracts of papers that furnish gene activity measurements. >> www.plasmaproteomedatabase.org



RESOURCES

<< The Word on the Worm

High school students and cell biologists alike have consulted *WormBook* to learn about *Caenorhabditis elegans* and methods for studying it. The year-old reference serves as a companion for the genomics storehouse WormBase and provides almost 90 peer-reviewed chapters, all written by wormologists, on different aspects of nematode biology. Page through the molecular biology section to learn how the animals fix broken DNA, or visit the evolution and ecology chapters to meet some of the pathogens that make life miserable for worms. Beginners will find tips on basic procedures such as how to stain the slippery creatures to delineate cellular structures. The cool blue spots freckling this nematode (left), for example, are cell nuclei tagged with DAPI, a compound that clings to DNA. Lab veterans can bone up on more advanced techniques such as how to shut down genes. >> www.wormbook.org

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