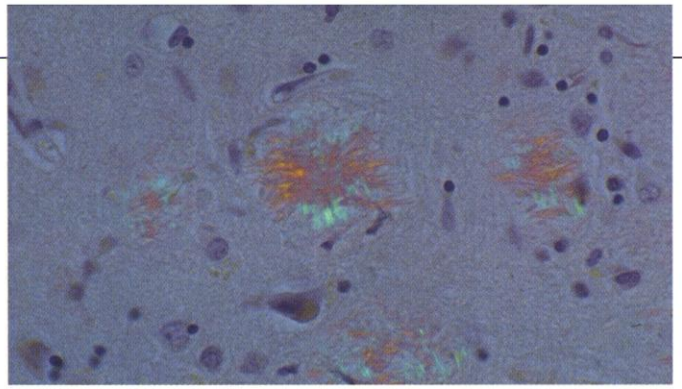

IMAGES

Hallmarks of Disease

Many pathologists would recognize the gnarled orange and blue-green plaques above: They are the signature of Alzheimer's disease. The plaques, made of amyloid protein, and neurofibrillary tangles build up in the cerebral cortex of victims, possibly killing neurons. The slide comes from a series of weekly case studies at WebPath,* a University of Utah pathology teaching site. Pathology images have become a cottage industry on the Web, with many departments posting their best pictures for medical students and researchers. Visitors can see organs ravaged by cancer, the spongy brain tissue created by Creutzfeldt-Jakob disease, cells invaded by malaria parasites, and more. Another useful site is PathWeb,† which includes a search tool that combs pathology image archives across the entire Web.

* www-medlib.med.utah.edu/WebPath/webpath.html
† pathology.uchc.edu/PWIndex/PMNT.cfm

HOT PICKS

Vanishing frogs. The alarming decline of many amphibian species in recent decades inspired AmphibiaWeb, a new database. Holding about 140 species accounts so far, the site hopes to eventually include up-to-date status reports on all species of frogs, toads, and salamanders, along with links to taxonomic and museum databases. www.amphibiaweb.org

Caught in the act. Make a computer model of calcium waves sweeping across a neuron, respiration in mitochondria, a disintegrating nuclear envelope, and more with this site's software tools for modeling cell physiological processes. Presented as Java applets, the tools are free to academic users with registration. www.nrcam.uchc.edu

Grassroots science. Created by a software engineer in Seattle, the Science Hobbyist is packed with ideas for science fair projects, fun science links, and minutiae about topics studied by amateur scientists (such as tesla coils). Don't miss the "physics for bored commuters" page with its analyses of traffic jams. www.amasci.com

NET NEWS

Getting Girls to Like Computers

Violent video games, nerdy Internet hackers, boring classes: It's no wonder girls are turned off by computers, according to a new report. If girls are ever to catch up with boys in information technology (IT), the "culture of computers" has to change, concludes a panel of school teachers, academics, and others formed by the American Association of University Women Educational Foundation.

Their report, "Tech-Savvy: Educating Girls in the New Computer Age," notes that women now earn less than 28% of the U.S. bachelor's degrees awarded in computer science, down from 37% in 1984. After surveying teachers, interviewing girls, and reviewing the literature, the panel concludes that "girls have reservations about the computer culture." E-mail and surfing the Web don't count, it says, because true IT literacy means using computers "proactively."

The situation is "of increasing concern, from the point of view of education, economics, and culture," the report notes, especially in light of the yawning shortage of IT workers. Wholesale changes are needed, it says, from better teacher training to more computer games that appeal to girls.

"Their conclusions are on target," says Mary Lou Soffa, a computer scientist at the University of Pittsburgh who has mentored IT students. "Computer science is not just doing boring work," she says, pointing to exciting computer-based careers in art and business. "But somehow we've not conveyed that [message] to girls."

SITE VISIT

The Hottest Science

High-energy astrophysics is undeniably the hottest science around. Experts in this field peer at the most powerful and highest temperature phenomena in the universe: matter getting sucked down a black hole, gas and dust streaming from an exploding supernova, mysterious gamma ray bursts. Aiding the search for these sources are x-ray, gamma ray, and extreme-ultraviolet telescopes lofted into orbit beyond Earth's light-absorbing atmosphere.

Perhaps the most important function of NASA's High Energy Astrophysics Science Archive Research Center site is as an archive of satellite data, including hour-by-hour observations by the x-ray–observing Roentgen Satellite, plus instructions for getting raw data from the Compton Gamma Ray Observatory and other telescopes. Researchers can also take advantage of Web tools such as Skyview, which calls up any part of the sky at several different wavelengths, and calculators for converting, say, solar masses to ergs.

heasarc.gsfc.nasa.gov

But you don't have to be a high-energy astronomer to enjoy many other HEASARC offerings. The Observatories section profiles more than 90 high-energy astrophysics missions since 1961 and those planned; a History of Astrophysics goes back to the first report of Halley's Comet in 239 B.C. The education section includes a movie of a black hole, lesson plans, and Webstars, an astrophysics links directory. And don't miss the HEASARC Picture of the Week, which might feature an x-ray image of the sun or baby pictures from a stellar nursery.

Science ONLINE

Signal transduction—the chemical pathways by which a cell regulates its behavior and interacts with its environment—has emerged as one of the hottest and most cross-disciplinary areas in the life sciences. *Science*'s Signal Transduction Knowledge Environment (STKE) provides a unique gateway to all things ST. Included in this rich resource are full-text access to recent journal articles; Reviews and Perspectives authored specifically for STKE; and an interactive chart of pathways linked to an authoritative database about signaling molecules. Visit www.stke.org.

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