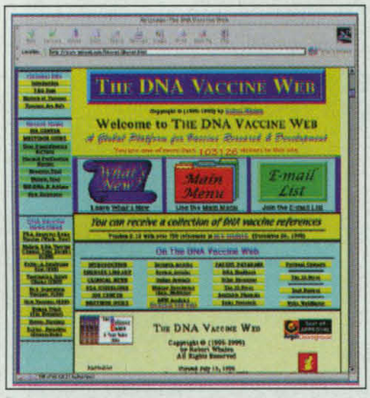
SITE VISIT

DNA Vaccine Boosterism

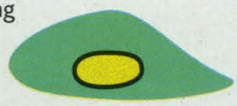
Vaccines made with DNA have burst onto the research scene in the past 5 years, and a handful of formulations, including one against Lyme disease, have reached the market. For the latest information on vaccines in development against diseases such as rabies, malaria, and herpes, check out the DNA Vaccine Web.



www.genweb.com/Dnavax/dnavax.html

DNA shots are a hot commodity, as some may prove cheaper and easier to manufacture than traditional protein-based vaccines, according to the DNA Vaccine Web. For newcomers to this area, the site briefly describes how the vaccines work (viral or bacterial DNA is injected into a patient, whose genetic machinery uses it as a template to make a protein against which the person's immune system can generate antibodies). The site links to news stories on DNA vaccines, and every month creator Robert Whalen, a vaccinologist at the Centre National de la Recherche Scientifique in Paris, updates a list of 1900 papers and counting on the subject. Whalen also chronicles upcoming meetings, lab protocols, and vaccine missives from the U.S. Food and Drug Administration.

HOT PICKS



Cellmation. Want some help visualizing the cascades of biochemical reactions in a living cell? This site features colorful Shockwave animations of proteins zipping about during apoptosis, nucleocytoplasmic transport, antigen presentation, and other cell activities. www.shinbiro.com/~virbio/index.html

Skullduggery. Reach out and touch the skull of *Australopithecus afarensis* or that of a ring-tailed lemur at this virtual gallery of hominid crania—five modern primate relatives and five fossils of human ancestors. You can rotate the skulls 360 degrees, measure them, or read brief summaries on their place in human evolution. www.sscf.ucsb.edu/~hagen/crania

Burn, baby, burn. Whether studying slash-and-burn agriculture, controlled burns, or fire effects on peat bogs, scientists will welcome this database of over 10,800 fire ecology references including journal articles, book chapters, and government documents. Accompanied by a lengthy thesaurus. www.talltimbers.org/database.html

NET NEWS

Hunting Mouse Genes

A new Web database in Japan will help ratchet up the pace of genetic studies in mice, which down the line should yield insights into diseases in people. Japan's Institute of Physical and Chemical Research (RIKEN) outside Tokyo last week unveiled the Mouse Encyclopedia Index,* a library of complementary DNA (cDNA) sequences. These sequences are DNA copies of the stretches of RNA that a cell's ribosomes use to express a gene, or crank out its protein.

According to Yoshihide Hayashizaki, head of RIKEN's Genome Exploration Research Group, the index is the first mouse data bank that will focus on full-length cDNA sequences, which can help researchers figure out the function of a particular gene. The group's work is based on a new synthesis method that produces full-length cDNA clones instead of segments, and rapid sequencing techniques, all developed at RIKEN. "The group at RIKEN has done a lot of good work," says David Lipman, director of the U.S. National Institutes of Health's National Center for Biotechnology Information. "It's exciting that they're starting to make these [data] public."

For now, the site is limited: Although RIKEN has generated some 20,000 cDNA clones, it has sequenced only one end region of each clone. That identifying data, posted on the Web site, catalogs the clones and allows comparative searches across other data banks. Full-length sequence data will be posted as soon as it's available, Hayashizaki says, "and we are going to establish a system to distribute the clones."

* genome.rtc.riken.go.jp

COOL IMAGES

Math Bouillabaisse

This psychedelic diamond pattern is the cover of a 1999 calendar you can download at a site called the Primordial Soup Kitchen. Cooked up by mathematician David Griffeath of the University of Wisconsin, Madison, the site is devoted to cellular automata (CA), grids that evolve depending on mathematical rules for how one cell, or point, is related to its neighbors. (Think of the computer program "Game of Life.") Griffeath stocks his huge site with dozens of colorful CA images and Java applets for generating them. Although the explanations can get pretty technical, even mathphobes may delight in the intricate designs, which bring to mind everything from snowflakes to bacterial cultures and the '70s toy Lite Brite.

psoup.math.wisc.edu/kitchen.html

Science ONLINE

What explains a rainforest's tremendous diversity of plants? A study in Panama discussed by Tilman in the Enhanced Perspective on p. 495 points to the patchy distribution of species, which allows weaker plants to flourish in the absence of competitors. The online Perspective offers links to Web-based ecology courses, sites on tropical rainforests, overviews of biodiversity, and more. www.sciencemag.org/cgi/content/full/283/5401/495

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