NETWATCH
edited by JOCELYN KAISER

TOOLS

Modeling an AIDS Vaccine

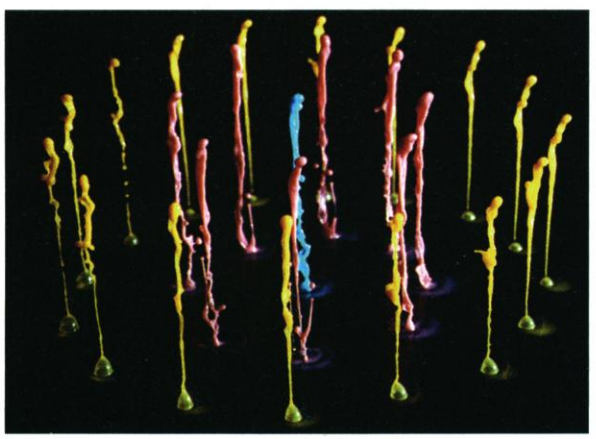
The most successful AIDS vaccine so far—in monkey experiments, at least—is a preparation made from a live, weakened version of the AIDS virus. But scientists haven't pursued this strategy for humans, because the vaccine itself could cause the disease in some cases. A new online computer model developed in the lab of biomathematician and evolutionary biologist Sally Blower of the University of California, Los Angeles, illustrates how this controversial vaccine strategy might affect different populations. At Blower's site, interactive Java applets show that even if such a vaccine caused AIDS in 5% of recipients, it could still help stem the epidemic in a country like Zimbabwe, where transmission of HIV is high. But in Thailand, where transmission rates are much lower, the vaccine could lead to an increase in the number of AIDS cases. Visitors can also tweak models that explore resistance to drugs aimed at thwarting AIDS, tuberculosis, and genital herpes.

www.biomath.medsch.ucla.edu/faculty/sblower

IMAGES

Liquid Vision

A body in motion tends to stay in motion even when that body is a drop of milk. This image of tinted milk resisting a sudden change in motion is just one of many in Mark Cramer's Gallery of Fluid Dynamics, a Web site illustrating the physics and beauty of fluids. Photographers Richard Turlington and Loren Winters created the elongated drops by lifting the platform on which the milk rested, then suddenly jerking it downward. Cramer, a professor of engineering at Virginia Polytechnic Institute and State University in Blacksburg, includes images of shock waves from wind-tunnel experiments and supersonic cars, vortices (which include tornadoes and smoke eddies), and the plasma bow shocks we know as auroras. Interesting links range from Winters's high-speed photography site at the North Carolina School of Science and Mathematics to animations of breaking waves.



For those seeking total immersion, check out efluids.com, a new site started by two engineering professors that includes a Who's Who, job listing, conferences, gallery, and links to fluids tutorials.

www.eng.vt.edu/fluids/msc/gallery/gall.htm

FIELD GUIDES

Butterfly Net

Butterfly enthusiasts—or people simply wondering about the pretty insects fluttering through their backyard—can turn to Butterflies of North America, an online atlas. Visitors will find photos, county checklists, and details about the feeding habits, migration, and conservation status of nearly 750 Lepidoptera species. The bog copper shown at left (*Lycaena epixanthe*), for example, makes its home in cranberry bogs in the eastern United States, where caterpillars dine on shrubs and adults on flower nectar.

The atlas also links to fact sheets explaining such matters as how to raise butterflies and how they differ from moths. (Hint: Butterflies usually have clubbed antennae.) And it lists e-mail addresses of state "butterfly coordinators," who will help identify specimens and verify new sightings. Both professional and amateur lepidopterists contribute to the atlas, which is hosted by the U.S. Geological Survey's Northern Prairie Wildlife Research Center. Curious about other insects? The center also maintains Web atlases of North American moths, dragonflies, and mayflies.

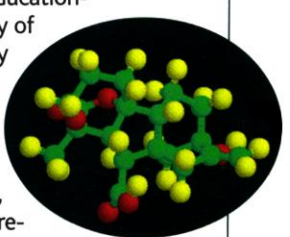
www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/bflyusa.htm

RESOURCES

Getting Hip to Plant Hormones

Hormones get blamed for some crazy behavior in humans, but you should see what they do to plants. These potent growth regulators stimulate flowering, induce cell elongation, determine sex, and more. Students and professionals can learn about their form and function at the Plant Hormones site, created by plant physiologist Steve Croker of the University of Bristol, U.K., and colleagues.

The home page is adorned with a rotating model of gibberellin A_1, one of the field's early finds and a ubiquitous hormone. If "gibberellin" sounds like gibberish to you, click on Educational Resources. A primer there describes this family of more than 90 hormones, first discovered by Japanese scientists in a rice seedling fungus. Read on for the history, biochemistry, and use in biotechnology of plant hormones, including auxins—growth hormones originally isolated by a student of Darwin's—plus cytokinins, ethylene, and abscisic acid. Other links lead to reviews of plant-hormone books, lectures, and molecular structures. Back at the home page, visitors can look up plant-hormone scientists in a directory or join an e-mail discussion group.



www.plant-hormones.bbsrc.ac.uk

Send great Web site suggestions to netwatch@aaas.org

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