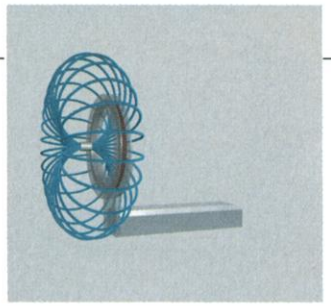
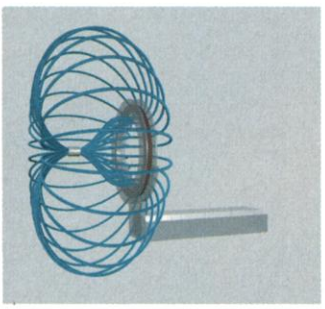
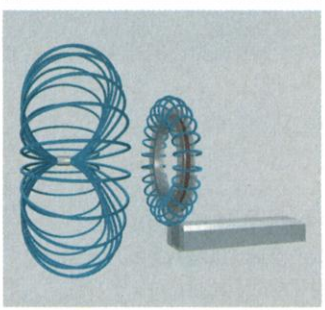
NETWATCH

edited by JOCELYN KAISER







CREDIT: (TOP) J. BELCHER, S. OLBERT, M. BESSETTE, L. MINTON/MIT

COOL IMAGES

Seeing Fields

Moving a magnet through a wire coil to generate a current, reproducing what Michael Faraday first noticed around 1821, is a neat experiment to watch. But it's not always easy for students to grasp what's going on. To help make such demos clearer, MIT's John Belcher and colleagues have plugged electromagnetism equations into software used by animators and video game makers. The result is movies showing field lines billowing out from charged objects and current-carrying wires. The frames at left, for instance, come from an animation of field line tensions resulting from Faraday's law, the basis of electric motors. Other animations in a growing collection include charged spheres and a magnet levitated by a superconductor.* Even professionals might be surprised by the weird patterns that appear when you turn on a dipole.

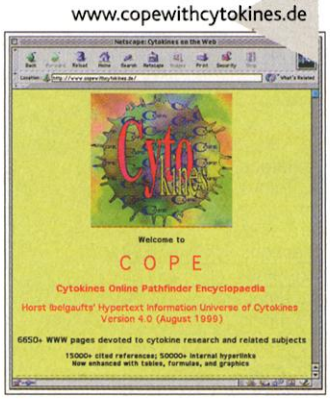
* web.mit.edu/jbelcher/www/anim.html

SITE VISIT

Sorting Out Cytokines

Cytokines are small proteins that facilitate everything from wound healing to fighting viruses to killing tumors. As triggers for biochemical processes, they're a lot like hormones, except that cytokines are made by cells all over the body rather than specific organs. There are hundreds of them, often with cryptic names like ABCD-1 and Ck-beta-8. A single cytokine can do many jobs, and different cytokines can perform the same function. Confused? Then check out COPE: Cytokines Online Pathfinder Encyclopaedia.

www.copewithcytokines.de



COPE "is a first-aid kit for those people who come into the field and are hopelessly overwhelmed," says Horst Ibelgaufts of the University of Munich, who built the site from his printed reference on cytokines. Once accustomed to the somewhat clunky layout—on each page, you have to scroll past a screen of ads and journal links—visitors will find over 6600 hyperlinked entries. Arranged alphabetically, they define the function of each known cytokine and cover topics ranging from hematology to apoptosis, bioassays, and recombinant cytokines. Irked by "acronymania," Ibelgaufts has also tucked in a few humorous entries, including TGIF factor, whose action, we're told, is similar to that of endorphins.

HOT PICKS

Banks of mutations. Researchers studying human variation or inherited disease may appreciate this site, which links to scores of mutation databases for specific traits and diseases. The list, ranging from albinism to glycogen storage, blood antigens, and *p53* cancer genes, is part of an international project to knit them into one database.
ariel.ucs.unimelb.edu.au:80/~cotton/glsdb.htm

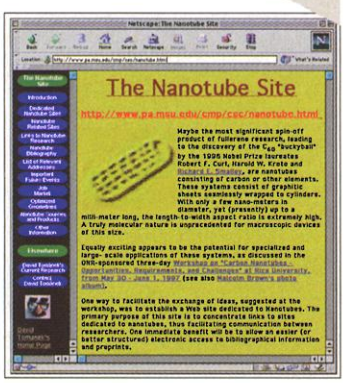
Enviro cyberlibrary. Need some help wading through the Web's flood of environmental science info? This site, created by a librarian, offers a choice set of links, from ecology journals to hazardous waste documents to sites for finding a good graduate program. eastlib.east.asu.edu/Reference/even

Tech transfer junction. This new site aims to hook up university tech transfer officials with companies by posting blurbs about discoveries awaiting commercial takers. Visitors can register and browse ideas for free, but the site wants a cut of resulting licensing agreements. www.uventures.com

SITE VISIT

Tubing Trip

www.pa.msu.edu/cmp/csc/nanotube.html



Discovered just 9 years ago, the tiny cylinders of carbon known as nanotubes have become the hottest variation of the all-carbon hollow molecules called fullerenes. Nanotubes are already in use as tips in atomic-scale microscopes, for example, and are under consideration for applications ranging from tiny tweezers to superconductors to flat TV displays.

The Nanotube Site, run by physicist David Tománek at Michigan State University in East Lansing, serves as both a central Web site for researchers and an introduction to the field. In one subsection, an honors student is compiling the latest published data on tube dimensions, conductance, tensile strength (stiffer than steel, but flexible), and other physical properties that depend on the tube's geometry and whether it's single- or multiwalled. Even for well-studied tubes, however, many properties are still being debated. Back at the main page, visitors will find lists of jobs, meetings, and companies that sell the tubes. Find out more by following over 100 outside links, including researchers' labs, magazine articles, galleries of the lacey structures, and even nanotube poetry.

Science ONLINE

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