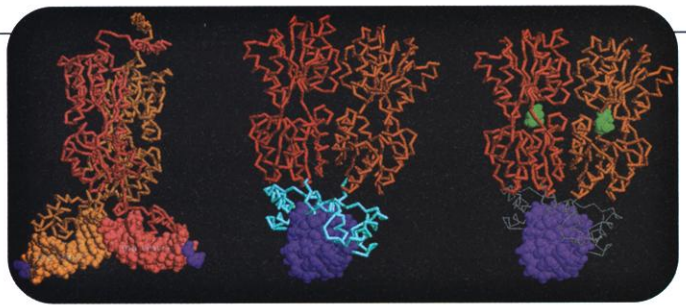


CREDIT: T. DRISCOLL AND F. REICHSMAN/BIOCHEMISTRY IN 3D, ONLINE SUPPLEMENT TO *LEHNINGER PRINCIPLES OF BIOCHEMISTRY*, BY D. NELSON AND M. COX, WORTH PUBLISHERS, 2000

COOL IMAGES

Protein Cinema

Mere specks of meat to some, proteins to biochemists are the stuff of life and their contortions an endless puzzle. Students can get a hands-on feel for how proteins work at Biochemistry in 3D,* a Web site packed with state-of-the-art interactive teaching models and movies. (It accompanies the textbook *Lehninger Principles of Biochemistry*, ed. 3.) A tutorial on the classic *Escherichia coli* gene regulator called lac repressor (LacR), for example, examines in detail how this protein that's normally glommed onto DNA falls away if triggered by a lactose molecule, which allows lactose metabolism genes to be expressed. [Snapshots above show (from left) two views of the LacR dimer bound to DNA, and the dimer after a lactose analog binds, causing LacR to detach from DNA.] Hold down your mouse to twist and turn the models, or click the controls to toggle between wire frame, ribbons, ball and stick, and more. Other tutorials include oxygen-binding proteins and bacteriorhodopsin, a proton pump; restriction enzymes, DNA, and RNA are coming soon.

* www.worthpublishers.com/lehninger3d/index.html

HOT PICKS

Weighing the alternatives. Echinacea wards off colds, St. John's Wort will cure depression: If you're skeptical of such claims, find out what research has actually shown for 100-some herbs at HerbMed, an "evidence-based herbal formulary." The site posts excerpts from articles in PubMed on clinical studies, mechanisms, warnings, and ethnobotanical uses; links lead to PubMed abstracts. www.amfoundation.org/herbmed.htm

Global meltdown. Mountain glaciers, sea ice, and seasonal snow cover are all shrinking as temperatures have warmed over the past century. For an overview of these trends and the changes greenhouse gas warming may bring, visit State of the Cryosphere, a brief primer that includes a glossary and references. nsidc.org/NASA/SOTC

NET NEWS

Data Hideaway

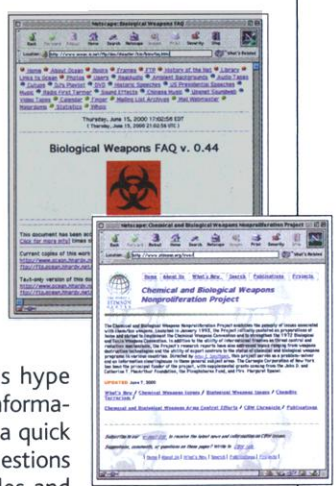
Worried that government snoopers can eavesdrop on your e-mail or Web browsings? If it's absolute privacy you seek, soon you can rent a server housed on a rusting hunk of metal and concrete in the North Sea that's billed as "the world's most secure" data haven.

The new data bunker is Sealand, a former World War II British navy fortress 10 kilometers off eastern England. In 1967, the abandoned gun tower was taken over by a family who then claimed that a British court decision made it sovereign territory. Now Sealand's cash-strapped royals have hitched up with HavenCo (www.havenco.com), started by several U.S. techies. The company, which opens 1 September, will offer Internet servers that are "subpoena-free ... there are no laws about storage or transmission," says spokesperson Bill Scannell. Only spam, child porn, and Internet attacks are off limits. Scannell expects customers willing to fork over $500 to $5000 per month for a server will include banks, e-commerce companies, and "individuals who just feel like being left alone." To avoid sabotage, HavenCo is installing multiple Internet links—fiber-optic cable, microwave, and satellite—all sending encrypted data, of course.

The plan has its skeptics. If governments really need to get into HavenCo's servers, to investigate money laundering or terrorism, for example, they could invoke international law enforcement treaties, suggests Don Heath, president of the Internet Society in Reston, Virginia. "I think these data havens are going to be short-lived," he says. But "if nothing else, it will show people are serious about wanting privacy."

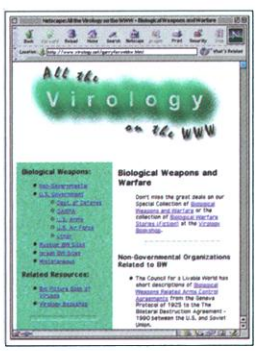
SITE VISITS

Bioweapon Worries



Biological weapons are big news these days, amid growing concern that "poor man's weapons" like anthrax or botulism toxin could fall into the hands of rogue states or lone terrorists. The United States is spending big money on everything from helping cities prepare for attacks to developing better vaccines. Meanwhile, officials try to decide if they should destroy the world's last smallpox stocks and fret over ending a shortage of anthrax vaccine for U.S. troops.

Whether you think the attention is hype or well-founded, you'll find a wealth of information about bioweapons on the Web. For a quick overview, visit this Frequently Asked Questions page* sprinkled with quotes from articles and documents. Topics range from how biological weapons are defined—viruses, bacteria, and sometimes toxins used to cause harm—to experts' recent assessments and relevant books. Offering a deeper look is the Chemical and Biological Weapons Nonproliferation Project† at the Stimson Center in Washington, D.C. Find out about countries that the experts believe have bioweapons—including the United States, North Korea, Israel, and Iraq—or peruse reports on topics such as international efforts to find work for scientists from Russia's former bioweapons labs. There's also a table of major agents, such as the bacterium *Pasteurella tularensis*; a dose of just 10 to 50 of the organisms can cause rabbit fever, which kills 30% of victims.



For more biological weapons links, see this list‡ of disarmament projects and Department of Defense sites, such as its controversial anthrax immunization program. You can also read the 1972 Biological Weapons Convention, still not ratified as countries wrangle over verification.

* www.ocean.ic.net/ftp/doc/disaster/bio/biowfaq.html
† www.stimson.org/cwc
‡ www.virology.net/garryfavwebbw.html

Send Internet news and great Web site suggestions to netwatch@aaas.org